Jour-OLS
Journal of Online Learning Studies

Volume 2 | Issue 1 | 2023
https://jourols.com/index.php/jols

The scope of inclusive learning in distance education: Systematic Literature Review

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Suggested citation: Soydan Oktay, Ö. (2023). The scope of inclusive learning in distance education: Systematic Literature Review. *Journal of Online Learning Studies*, 2(1), 1 -14.

Highlights

- Inclusive distance education is a concept that has come to the fore after the COVID-19 pandemic.
- In inclusive distance education, access to technology, technological literacy, and access to education are of primary importance. For this reason, it is necessary to create a sense of belonging through participation elements by providing access support.
- Inclusive distance education supports equal opportunities in education and the idea of quality education.
- Inclusive distance education offers a holistic approach to the basic concepts of distance education and inclusive education.
- Inclusive distance education has a high potential to contribute to the Sustainable Development Goals of quality education (SDG-4), gender equality (SDG-5), poverty reduction (SDG-1), health and well-being (SDG-3), social justice and reducing inequalities (SDG-10), industry, innovation and infrastructure (SDG-9), peace and justice (SDG-16).

Keywords: Distance education, Inclusive education, Inclusive distance education, Inclusive online education, Inclusive e-learning

Abstract

This study examines the approach(es) to the use of inclusive education and distance learning in articles that discuss inclusive education in the context of distance learning. The study's primary purpose is to understand the development and impact of the approach to using inclusive education and distance education together and to emphasize the role of inclusion in education in the context of the Sustainable Development Goals and UNESCO Education Monitoring Reports. The research, designed as a systematic review, includes 24 articles published after 2016 in the Web of Science database. The study utilized MAXQDA Analytic Pro (24.0.0) software to analyze the abstracts and keywords of the selected articles. The study explores the correlation between inclusive education and distance education and the emergence of the concept of inclusive distance education. The study's findings draw attention to the potential of inclusive distance education to promote equity and inclusion in education. This study aims to provide researchers, educators, and policymakers in distance education and inclusive education with a greater understanding of inclusive distance education. As a result, this study stands out as research highlighting the development and importance of inclusive distance education and promoting inclusion in education.

1. Introduction

The vital role of education in the development of societies has created the need for quality education. This need is also included in the United Nations (UN) Sustainable Development Goals (United Nations, 2023b) and supported by international organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) and UNICEF (UNESCO, 2023b; UNESCO, 2023a; UNESCO, 2015; Independent-Group-of-Scientists-appointed-by-the-Secretary-General, 2023). The COVID-19 pandemic has led to a clear recognition of the necessity of distance education in education. Distance education supports equality of opportunity thanks to its time, space,

Doi: http://doi.org/10.5281/zenodo.10574867
Received 29 Nov 2023; Revised 19 Dec 2023; Accepted 29 Dec 2023
ISSN: 3023-4190.

and content flexibility. However, as stated in the UNESCO "Global Education Monitoring Report 2023", the transformation of distance education about technology is likely to negatively affect the potential of distance education for equality of opportunity. In other words, considering the concepts of equality, equity, and justice (Czerniewicz & Carvalho, 2023; Kurubacak & Yüzer, 2004) in distance education, diversified contents, effective use of interaction types, use of different modalities for accessibility, and support services should be developed. All these requirements pave the way for the convergence of distance education with inclusive education, and thus, examples of the joint implementation of inclusive education and distance education (Arias-Velandia et al., 2018; Bocci & Bonavolontà, 2020; dos Santos & Fernandes, 2022; Rice et al., 2023; Kawane et al., 2023; Vorlíček et al., 2023; Tesolin & Tsinakos, 2018) are emerging.

The study aims to identify the approaches to using inclusive education and distance education concurrently in articles found in the Web of Science (WOS) database from 2016 onwards. The study examines inclusive education within the context of distance education by analyzing the keywords and abstracts of the relevant articles. In line with this purpose, the study aims to answer the following questions:

- Q1- Which concepts do scientific articles on inclusive education in the context of distance education focus on in their keywords?
- Q2- How is the distribution/change of the concepts used in the abstracts of scientific articles on inclusive education in the context of distance education according to years?

2. Literature

Kocdar and Bozkurt (2023, p.883), emphasizing the diversity of concepts defining special needs in education, state that the focus of all terms is the adaptations that learners need in their learning processes in open, distance and digital education (ODDE). These adaptations vary according to learners' specific needs. Inclusive education is a process that aims to provide all learners with the opportunity to learn and achieve together, regardless of their individual differences. Analyzing the lack of consensus and clarity on the nature, function, and scope of the term “inclusive education” in his study, González (2021) emphasizes that inclusive education should be studied and researched independently of special education. On December 13, 2006, the Convention on the Rights of Persons with Disabilities (CRPD) adopted by the United Nations under Article 1-Purpose states that "Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others (Lawson, 2018; United-Nations, 2023a)." This article highlights that disabilities encompass more than just physical and mental impairments. It makes it clear that the idea of disability also covers intellectual and emotional disabilities.

Furthermore, the CRPD (United Nations, 2023a) is the first legal document to refer to quality inclusive education. Sustainable Development Goal (SDG) 4 of the United Nations Sustainable Development Goals (United Nations, 2023b), adopted in 2015, affirms quality, inclusive, and equitable education. Inclusive education is central to achieving high-quality education for all learners, including those with disabilities, and developing inclusive, peaceful, and just societies (United Nations, 2016, p.1)." In this regard, since 2016, the scope of inclusive education has expanded to include everyone, in line with SDG 4.

Inclusive education is a process that aims to provide all learners with the opportunity to learn and achieve together, regardless of their individual differences (Aguilar et al., 2017). Czerniewicz and Carvalho (2023, p.444) emphasize that inclusion is not only about equity, equality, and justice. These concepts are also interconnected, and Open, Distance, and Digital Education have the potential to remove barriers to education, bring together many people from different cultures, and support greater participation in education (Czerniewicz & Carvalho, 2023, p.455). Distance education is crucial in providing inclusive educational opportunities to students unable or unwilling to participate in traditional education (Kovačević & Radovanovic, 2023). In addition, distance education provides students with advantages such as time and space independence, reproducibility of courses and resources, and flexibility of communication with instructors and peers (Turan et al., 2022). However, a thorough analysis of the learner's current situation and needs should accompany the provision of these flexibilities. It may be possible to remove the barriers to learner participation with environment and material designs that consider learners' opportunities and their conditions. Rice et al. (2023), who reached similar findings as a result of their research, aim to propose a research-based conceptual framework for Inclusive Online, Distance, and Digital Education (IODDE) in K-12 environments. Therefore, in their studies, they focus on two main types of support (policy support and direct

student support) and the biopsychosocial needs of students. The authors stress the significance of digital and educational access as distinct types of access and argue for establishing access and support by the requirements of students to achieve success. Rice and Dunn (2022) emphasize that redesigning digital spaces to confront social inequalities directly is also necessary for learning. The evidence suggests that access depends on individual needs and that minimizing inequalities requires addressing access through the learning environment and materials.

UNESCO (2023, p.256) defines equality as eliminating gender inequalities and ensuring equal access to education and vocational training at all levels for vulnerable people, including persons with disabilities, indigenous peoples, and vulnerable children. Education is the key to achieving the 2030 SDGs (UNESCO, 2023, p. 419). With this approach, all countries must support the transformation process necessary to achieve the SDGs (Independent-Group-of-Scientists-appointed-by-the-Secretary-General, 2023, p. xii). Due to the closure of schools during the COVID-19 pandemic, more than 1 billion students worldwide had to receive distance education. However, half a billion students (31 percent), most of whom are poor (72 percent) and live in rural areas (70 percent), have yet to be reached through distance education (UNESCO, 2023, p.27). The emerging situation points to the need for appropriate, equitable, scalable, and sustainable approaches to using ICTs. At the end of its Global Monitoring Report (UNESCO, 2023), UNESCO, driven by the motto "Education for all," emphasizes the need to regulate the use of technology in a way that protects learners from negative impacts, ensures the right conditions for equitable access, and prepares teachers for the use of technology. The reason for this emphasis is the potential of technology to support the continuity of learning in emergencies and for marginalized groups. However, technology is not a panacea; it is a contextual tool that aids in surmounting obstacles to attaining education. Countries can use platforms such as radio and television to provide access to marginalized groups and all learners in times of crisis. In this sense, creating solutions in line with learners' needs can prevent disproportionate exclusion (UNESCO, 2023, p.42).

Vorlíček et al. (2023), focusing on the three basic concepts of inclusive learning as access, participation, and support, underline that access to technology should not be a problem to prevent the digital divide (Sezgin & Fırat, 2020) and to avoid digital exclusion. Methlagl (2022) states that inclusive education studies are increasing (19.6% annually) with international collaborations and emphasizes the importance of technology acceptance and access to technology in optimization by mentioning the contributions that digital education and digital educational technologies can provide to inclusive learning. Canosa and Díaz (2022) analyzed six dimensions in line with the solutions identified by UNESCO: curriculum access adaptations, curriculum adaptation, Universal Design for individualized and personalized education for learning, project-based learning based on real-life problems, instructional support, and family support. Ultimately, they found that inequality was associated with access, use, and ownership of technologies. This context reflects the necessity of using technology in line with learners' accessibility. In their study on radio use in distance education, Kurubacak and Yüzer (2004) state that the most effective way to optimize distance education systems is an approach based on economy, technology, and equality. Cost-effectiveness and efficiency are economics concepts, while communication technologies are relevant to technology. Equity refers to gender, accessibility, minorities, language, and religion. In inclusive education, resources should be available in different languages, adapted to different contexts and realities, and accessible to all learners (UNESCO, 2023, p.62). Tesolin and Tsinakos (2018), who offer strategies to improve learning motivation by increasing interaction through multimodal presentations, express how technology should be used in education as follows: "Technology is neither inherently limiting nor inclusive and is always subject to how it is used in education (p.72)." In light of this information, it is necessary to consider the barriers that students face when deciding which technology to use.

Such barriers include access limitations, language barriers, level of diversity, learning difficulties, and physical and social-emotional development limitations. Page et al. (2021), who investigated the issue of school engagement, explain it in terms of four elements: belonging, engagement in learning, positive peer relations, and positive distance learning experience. They identify four thematic challenges: access to learning materials, the need to use technological tools, difficulties with participation, and falling behind peers due to lack of participation. They also emphasize that teacher-student (Oktay & Yüzer, 2021, p. 91) and student-student interactions (Oktay & Yüzer, 2021, p. 89) can promote and increase school engagement. Thus, participation, one of the critical elements of inclusive learning, can provide a sense of belonging through interactions, social relationships, and education. Based on pedagogical, psychological, and sociological foundations, the research of Marocco et al. (2019), based on the ACCORD project, aims to provide teacher support through inclusive distance learning. Instructors can utilize the

principles of inclusive teaching to help students feel a sense of belonging, provide them with access to course materials, and support them in achieving their learning goals. The current context requires empathy and resilience from both students and instructors (Columbia Center for Teaching and Learning (CTL), 2023). Support is essential to meet these requirements. In other words, teacher support, family support, and support from decision-makers affect the quality of education in inclusive learning.

In his study, Frumos (2020) that distance learning has a flexible structure that will allow the implementation of inclusive pedagogy and that teachers and students need to adapt to the emerging learning environment. She states that applying Universal Design principles can provide a starting point for teachers using inclusive pedagogy with distance learning to provide equal learning opportunities for everyone. He also emphasizes that the shortage experienced during the pandemic was not due to the shortage of distance education but rather the necessity for teachers and students to use technology. Thus, it provides a perspective on the combination of distance education and inclusive pedagogy at the heart of inclusive learning. Da Silva Mano and Augustijn (2023), in their study Towards a sustainable and inclusive distance education, identify several elements. These elements are increasing flexibility by allowing learners to create their learning paths, exhibiting a consistent structure in terms of presentation style and platform offered during the course, and eliminating the barrier of entry for learners by requiring less hardware and the need to use sustainable software. The authors characterize the course they created by considering these elements as an essential step towards inclusive distance education. In the new education method that emerged after the pandemic, it is necessary to develop a design accessible to everyone, considering the obstacles to accessibility, communication, participation, and learning. Teaching and family support should be provided by providing psychological and emotional support, contributing to learner motivation and emotional state, and supporting multiple representations, expressions, and forms of participation with Universal Design. There should also be a parallel structure between regulations and practices (Canosa & Díaz, 2022, pp.10-11). The Inclusive Distance Education Toolkit (INEE, 2023) is a resource for educators working to make distance education more inclusive. The toolkit guides designing accessible learning materials, supporting students with disabilities, and creating a welcoming and inclusive learning environment.

In summary, inclusive distance education aims to provide equal educational opportunities to all students, regardless of their academic level or circumstances. In line with this aim, inclusive distance education involves creating an inclusive learning environment accommodating students' different cultures, beliefs, and values. Considering that distance education aims to provide lifelong learning through equal opportunities in education, to meet individual and social needs, and to deliver education to large masses by utilizing communication technologies, it is possible to say that inclusive learning exhibits a parallel structure with the basic concepts of access, participation, and support to provide education for all.

3. Methodology

This study, which aims to examine the approach(es) towards the use of inclusive education and distance education together in articles discussing inclusive education in the context of distance education, is designed as a systematic review. The systematic review is an efficient practice for identifying gaps in the literature (Zawacki-Richter, 2020, p.vi) and obtaining a solid overview of the relevant literature. It is often challenging to draw precise boundaries of concepts in educational research. Drawing clear boundaries of concepts in educational research takes much work. This difficulty is felt in systematic review studies in the field of education (Zawacki-Richter, 2020, p.xii). Reviews serve to reveal evidence obtained through previous research. It is necessary to conduct new primary research to find answers to questions to which existing research does not provide clear and complete answers (Newman & Gough, 2020, p.3). This study aims to determine the approach(es) that emerge by using the concepts of distance education and inclusive education together with a constructivist logic (Newman & Gough, 2020, p.7).

3.1. Study Group

The research focuses on determining the contexts of the concepts of "inclusive online education" and "inclusive distance education," which emerge together with "distance education" and "inclusive education." With this focus, the researcher preferred to use the Web of Science (WOS) database for scanning. The WOS database contains high-quality, high-impact publications. The researcher, who clarified the search string concepts as a result of the pilot scan, performed the search on October 10, 2023, using the following query string in the title, abstract, author keywords, and Keywords Plus fields in all versions of the WOS database:

Results for "distance education" (Topic) AND "inclusive education" (Topic) OR "inclusive distance education" (Topic) OR "inclusive online education" (Topic)

3.2. Inclusion and Exclusion Criteria

The inclusion criteria were as follows: (a) the research examines Distance Education and Inclusive Education together; (b) Distance Education and Inclusive Education are used together in the title, abstract, author keywords, and Keywords Plus fields; (c) the document type is an article; the exclusion criteria were as follows: (a) the research does not examine Distance Education and Inclusive Education together, (b) the document type is not an article, (c) it was published before 2016. The review questions and conceptual framework were instrumental in establishing the inclusion and exclusion criteria (Newman & Gough, 2020, p.8).

3.3. Research Procedures and Data Analysis

The researcher followed the PRISMA 2020 Abstracts Checklist (Page et al., 2021a) throughout the research process. The researcher created the PRISMA flow diagram for abstracts (Page et al., 2021) based on inclusion and exclusion criteria (See Fig 1).

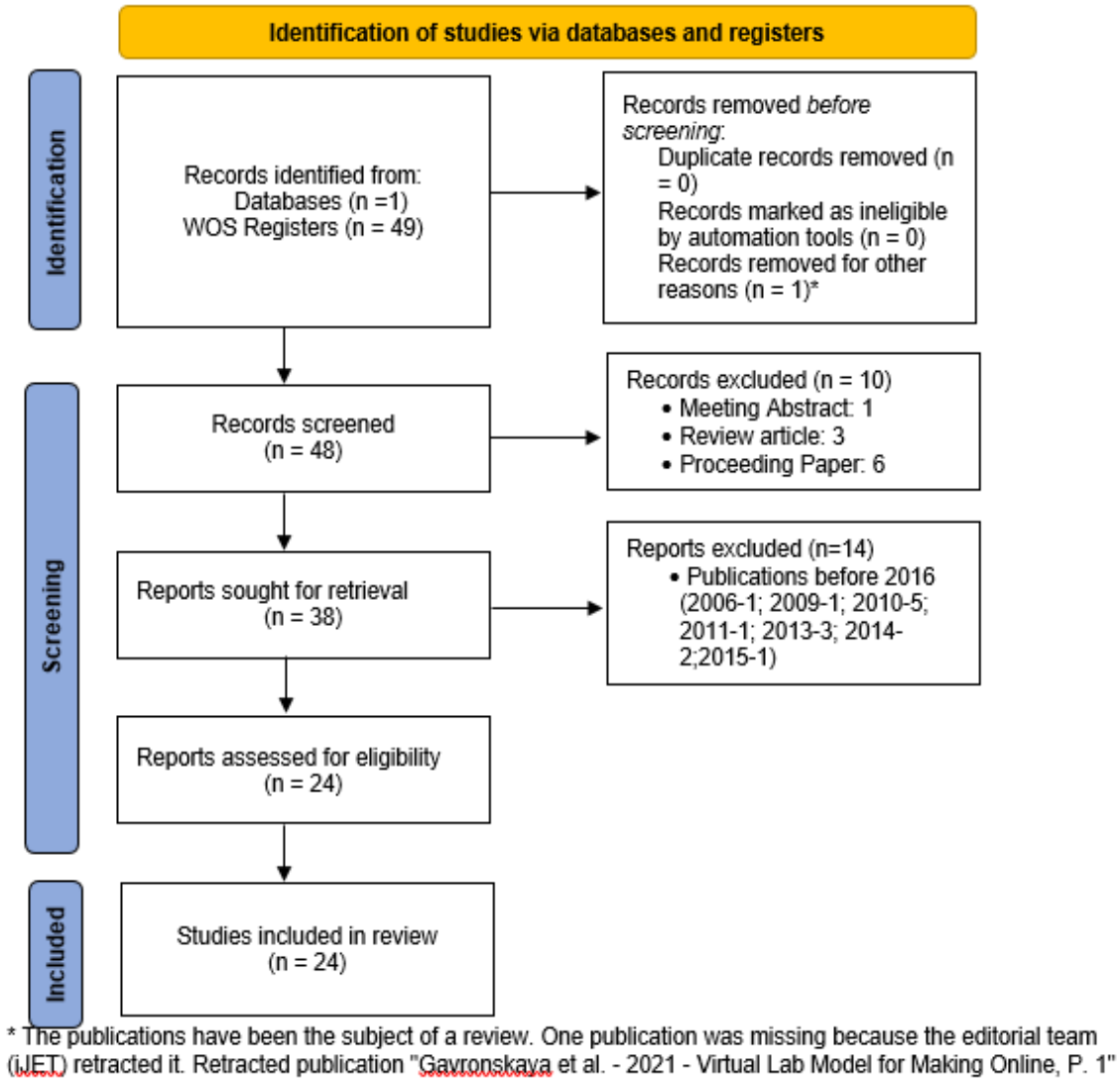

Fig.1. Flow diagram for PRISMA abstracts

Abstracts and descriptive information of 24 articles (See Table 1) accessed by the inclusion and exclusion criteria were transferred from WOS to MAXQDA Analytics Pro (24.0.0) and analyzed. The researcher also used the VOSviewer program (version 1.6.20) in the bibliometric analysis of keywords. Studies in all languages were included in the research to eliminate the risk of bias. He received support from an experienced researcher during the data collection and analysis stages. The supported researcher reached the same findings using the same processes.

Table 1.

Table of selected articles, authors, and titles

Authors	Name of the article
Barrera et al. (2017)	Attentıon to diversity in MOOCs: A methodological proposal
Fernandez et al. (2017)	Educational inclusion in distance education through management platforms
Arias-Velandia et al.(2018)	Women and Men performance in face-to-face, virtual, and distance higher education in Colombia
da Silva et al. (2018)	A continuing education specialized training service: An experience in a virtual learning environment Eureka
Souza et al. (2018)	Educational inclusion and distance education as a subject of educational legislation
Marocco et al. (2019)	Attain cultural integration through teachers' conflict resolution skills development: The ACCORD Project.
Frumos (2020)	Inclusive education in remote instruction with universal design for learning
Lemos et al. (2020)	Analysis and diagnosis of Moodle accessibility for visually impaired students
Bocci & Bonavolontà (2020)	Develop inclusive environments in online university education: results of an exploratory research.
Page et al. (2021)	Fostering school connectedness online for students with diverse learning needs: inclusive education in Australia during the COVID-19 pandemic
Salvador-García (2021)	Gamifying in times of coronavirus: a case study
Jones et al. (2021)	Intersecting barriers to adolescents' educational access during COVID-19: Exploring the role of gender, disability, and poverty
Canosa & Díaz (2022)	Inclusive education and COVID-19: An analysis of the Spanish legislative framework
Starks (2022)	Serving students with disabilities in K-12 online learning: Daily practices of special educators during the COVID-19 pandemic
Arteaga et al. (2022)	Challenges of inclusive teaching at the elementary school level during COVID-19
Gil-Quintana and de Leon (2022)	Digital Divide Versus Inclusion in Primary Education. The Perspective of Spanish Families
Marino-Jiménez and Ramírez-Rodríguez (2022)	Systemic analysis of school distance Peruvian education in the context of COVID-19
dos Santos and Fernandes (2022)	Distance inclusive research scenarios: A discussion on financial education
Tessaro and Restoule (2022)	Indigenous pedagogies and online learning environments: a massive open online course case study
Carro-Olvera and Sánchez-Olavarría (2022)	Distance primary education in COVID-19 time from the analysis of the "Aprende en Casa" strategy in Tlaxcala, México
Vorlíček et al. (2023)	Issues and challenges of inclusion in distance teaching and learning from the perspective of university students and teachers
Zajac & Benton-Lee (2023)	Microaggressions: Experiences of diverse graduate nursing students in online education
Kawane et al. (2023)	Exploring the elements of strengthening online higher education in disaster risk reduction: A perspective of sustained strategy in post-COVID-19
Rice et al. (2023)	A research-based conceptual framework for inclusive K-12 online, distance, and digital education

4. Findings and Discussions

The distribution of the publications accessed by years indicates that the number of publications addressing the unity of distance education and inclusive education increased after the pandemic (See Fig 2).

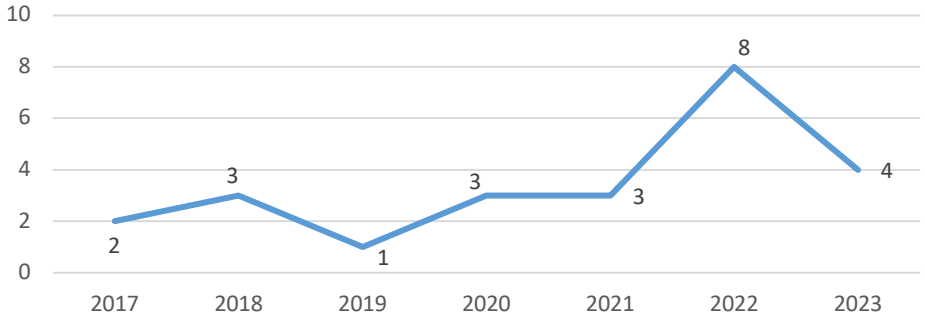

Fig.2. Distribution of articles by years

When the number of authors by year is analyzed (See Fig.3), it is seen that a total of 80 authors took part in 24 articles. The most exciting finding in this graph is that 14 authors were involved in 1 article published in 2019 (Marocco et al., 2019).

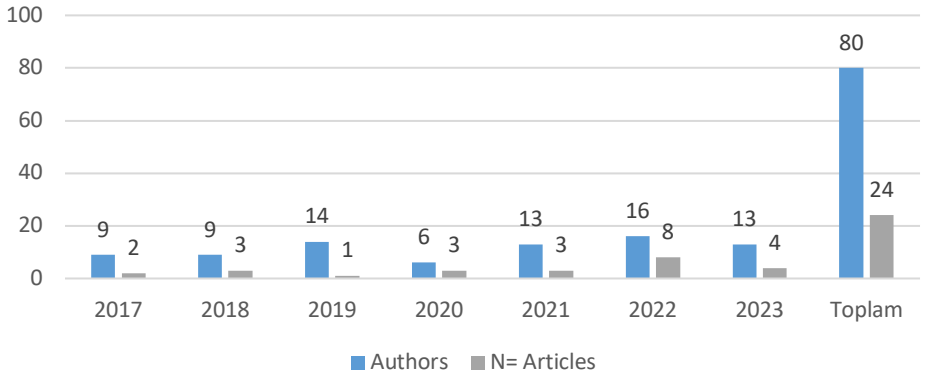

Fig.3. Number of authors and distribution by years

Table 2 shows that the most common language used in 24 studies was English (41.67%), followed by Spanish (37.5%) and Portuguese (16.66%). The English articles were published within the last five years, and most (75%) were published during and after the COVID-19 pandemic.

Table 2.

Language distribution table of articles by years

	2017	2018	2019	2020	2021	2022	2023	TOTAL	%
English	0	0	1	1	2	2	4	10	%41,67
Italian	0	0	0	1	0	0	0	1	%4,17
Portuguese	0	2	0	1	0	1	0	4	%16,66
Spanish	2	1	0	0	1	5	0	9	%37,5
N= Articles	2	3	1	3	3	8	4	24	%100

Q1. Concepts focused on in the keywords of scientific articles on inclusive education in the context of distance education

A total of 143 keywords were used in the analyzed studies (N=24). A total of 143 keywords were used in 24 studies. The keywords with the highest frequency are distance education (f=17); inclusive education (f=12); Covid 19 (f=10); education (f=8); Universal Design for Learning (f=4); diversity (f=2); inclusive online education (f=2); higher education (f=2); education technology (f=2); teachers (f=2); policies (f=2); online special education (f=2). The distribution of 143 keywords according to years, the highest number of keywords (f=44) was used in 2022, when most studies were conducted. In 2023, when half as many studies were performed as in 2022, the frequency of keywords was 28. When the distribution of the words with the highest frequency according to years is examined, distance education (2017: 2; 2018:3; 2019:1; 2020:3; 2021:0; 2022:6: 2023:2) and inclusive education (2017:0; 2018:2; 2019:0; 2020:2; 2021:2; 2022:2; 2022:5; 2023:1), especially in 2022, an intensive use draws attention.

The keyword "inclusive online education" was used by Tessaro and Restoule (2022) and Rice et al. (2023). The code matrix browser examined the co-use of distance education, inclusive education, and inclusive online education. It is seen that the keywords distance education and inclusive education are frequently used together in 2018 (f=2), 2020 (f=2), 2022 (f=3), and 2023 (f=2). The keyword inclusive online education was used frequently in 2022 (f=1) and 2023 (f=2) (See Table 3). These findings can be interpreted as the SDG-4 goal of quality and equitable education in 2016 (United Nations, 2016; p.1) initiating a trend toward considering distance and inclusive education together. Distance education-inclusive education in the pre-pandemic period can be expressed as an indicator that the context of inclusive learning described by González (2021) is not limited to individuals with disabilities and has been accepted in some circles for a long time. The COVID-19 pandemic has created mandatory use of distance education and caused all segments of society to meet distance education. Two studies conducted in 2020 using the critical concepts of distance education and inclusive education together may reflect the COVID-19 pandemic process. Especially in 2022 and 2023, the use of distance and inclusive education together points to the search for new approaches in SDG-4. The use of the keyword "inclusive online education" in recent years also indicates that the inclusive distance education approach has started to be examined and scrutinized. In summary, it can be concluded that the scope of the concept of inclusive education has expanded in the post-2016 period and that it will be possible to realize its optimum potential by increasing the inclusiveness of distance education, which exhibits a flexible and egalitarian approach that offers the opportunity to reach a wide range of segments.

Table 3

Code matrix browser table

	distance/online education (keyword)	inclusive education (keyword)	inclusive distance/online education (keyword)
Barrera et al. (2017)	1	0	0
Fernandez (2017)	1	0	0
da Silva et al. (2018)	1	0	0
Arias-Velandia et al.(2018)	2	1	0
de Souza et al. (2018)	1	1	0
Marocco et al. (2019)	2	0	0
Frumos (2020)	1	1	0
Lemos et al. (2020)	1	1	0
Bocci & Bonavolontà (2020)	1	0	0
Jones et al. (2021)	0	0	0
Page et al. (2021)	0	1	0
Salvador-Garcia (2021)	0	1	0
Carro-Olvera & Sánchez-Olavarría (2022)	1	0	0
Marino-Jimenez & Ramirez-Rodriguez (2022)	0	1	0
Starks (2022)	2	0	0
Arteaga et al. (2022)	0	1	0
Canosa & Diaz (2022)	1	1	0
Gil-Quintana & de Leon (2022)	1	1	0
dos Santos & Fernandes (2022)	1	1	0
Tessaro & Restoule (2022)	1	0	1
Zajac & Benton-Lee (2023)	0	0	1
Vorlicek et al. (2023)	1	1	0
Kawane et al. (2023)	1	1	0
Rice et al. (2023)		0	1

The bibliometric analysis of keywords confirms that "inclusive online education" has been used in recent years (See Fig. 4). After the pandemic, it can be said that the concepts of distance education and inclusive education have been examined in an approximate context. This can be expressed as an indicator of the trend toward using inclusive learning in distance education.

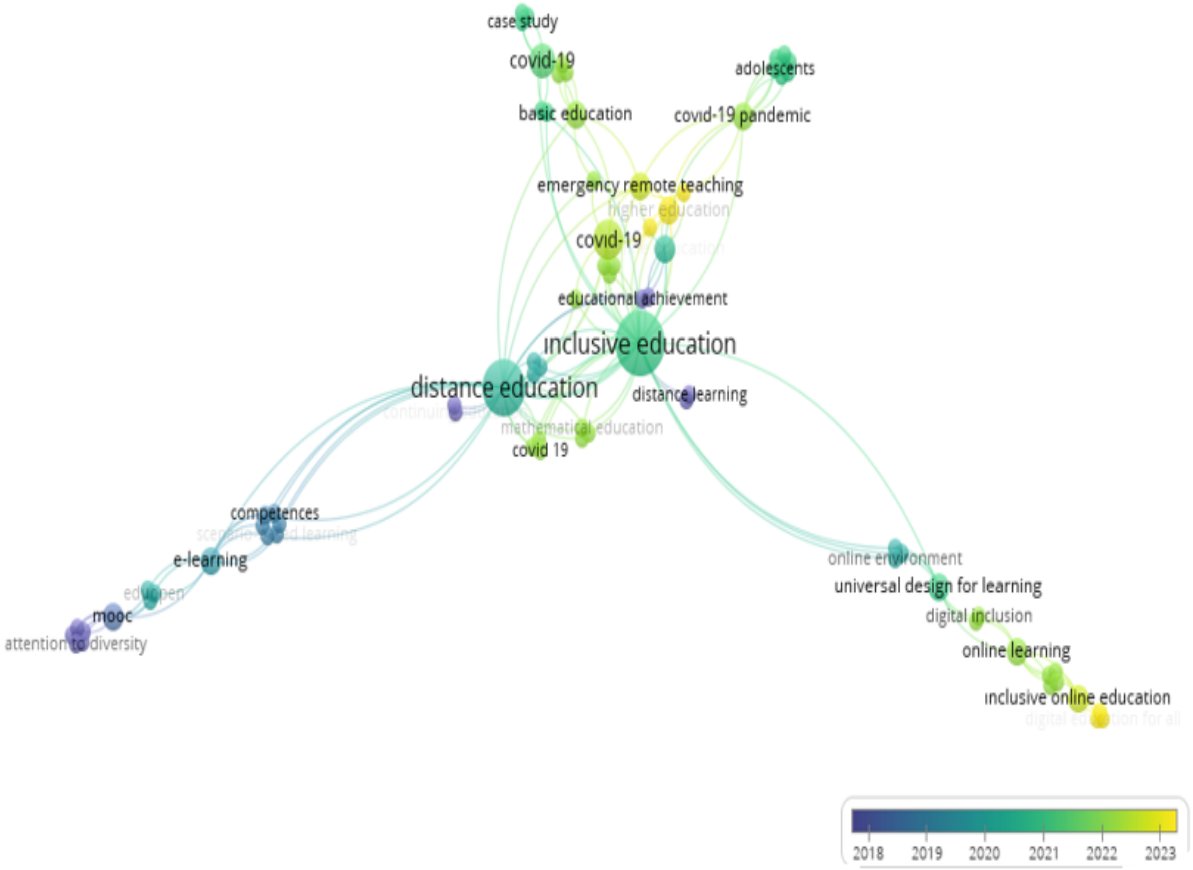

Fig.4. Distribution of keywords over the years

Q2. Distribution/change of the concepts used in the abstracts of scientific articles on inclusive education in the context of distance education by years

When the concepts used in the abstracts are analyzed, the ideas with the highest frequency are "distance education" (f=44) and "learning" (f=41). These concepts are followed by "teacher" (f=21), "inclusive" (f=18), "design" (f=16), "special needs" (f=14), "inclusion" (f=14), "ability-abilities" (f=13), "Covid-19" (f=12), "inclusive education" (f=12), "perspective" (f=11), "challenges"-"participation"-"support" (f=10). Among the codes in the summaries, the codes with frequencies below ten are "access" and "disability" (f=9), "pedagogy" (f=7), "university" (f=8), "digital"-"racial microaggressions" (f=6).

The concepts used other than the frequently repeated ones and their frequencies are as follows: "student, instruction, connection" (f=5); "educational inclusion, gap, adapt, activity, remote learning, Universal design for learning" (f=4), "modality, climate, online educational environment, diversity, emotion, indigenous pedagogies, quality, based learning, curriculum" (f=3), "family, policy, autonomous community, capacity, gender inclusivity, barrier, inequality, motivation, literacy, demand, digital technology" (f=2), "digital divide, experiential activities, flexibility, belonging, interaction, faculty strategy, intellectual learning, project-based learning, successfully" (f=1) (See, Fig. 5).

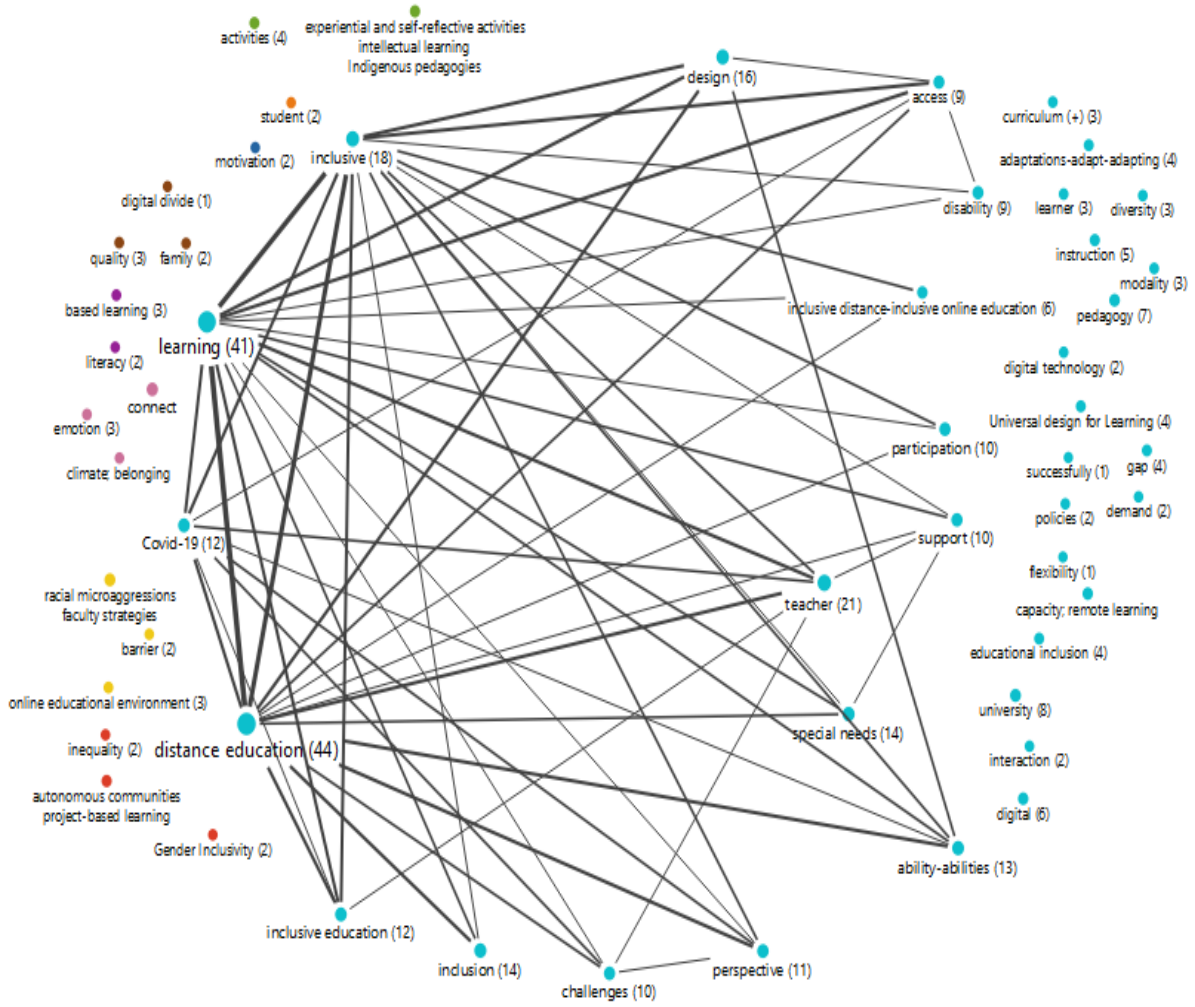

Fig.5. Code map of abstracts

When the interrelationships of the related codes are analyzed, it is seen that the code "inclusive distance/online education" is directly related to the codes "inclusive," "distance education" and "learning." Notably, the code "access," expressed as the basic concept of inclusive education, is directly related to "inclusive." "Learning," "Covid-19," and "distance education" codes; the code "participation" is directly related to "inclusive," "learning," and "distance education" codes; and the code "support" is directly related to "inclusive," "learning," and "distance education" codes. This finding supports the views of Czerniewicz & Carvalho (2023), Kawane et al. (2023), and Tesolin & Tsinakos (2018), who emphasize the potential of distance education to support access and participation by ensuring inclusiveness. The relationship of the code "design" with the codes "inclusive," "learning," "distance education," and "ability-abilities" is in parallel with the views on a design by da Silva Mano and Augustijn (2023), Canosa and Díaz (2022), Frumos (2020).

The studies with the phrases "inclusive online education," "inclusive distance education," "inclusive online, distance and digital education," and "Inclusive Distance Research Scenario" in the abstracts point to the same context. Distribution of the studies according to the related concepts; "inclusive distance education "inclusive distance education (Carro-Olvera & Sánchez-Olavarría, 2022; Jones et al., 2021)" (f=2), "inclusive online education (Bocci & Bonavolontà, 2020; Kawane et al., 2023)" (f=2), "inclusive online, distance and digital education (Rice et al., 2023, p. 1)" (f=1); "Inclusive Distance Research Scenario (dos Santos & Fernandes, 2022, p. 1)" (f=1). Since these concepts point to the same context, they were coded with "inclusive distance/online education." Considering the use of these codes over the years, it can be seen that they are used intensively, especially in 2020 and after (See Table 4).

While the frequency of using the concepts of inclusive education and distance education together in sentences in the abstracts is (f=4), the frequency of using them together in paragraphs is (f=9). It is noteworthy that these uses

intensified during and after the pandemic (DE+IE sentence 2022 (f=3); DE+IE paragraph 2020 (f=1); 2021 (f=1); 2022 (f=4)).

Table 4.

Distribution of the first 21 codes according to their frequencies by years

	2017	2018	2019	2020	2021	2022	2023	TOTAL
distance education	8	4	2	8	4	14	4	44
learning	2	1	4	8	3	13	10	41
teacher	0	0	1	5	4	6	5	21
inclusive	2	2	1	2	2	6	3	18
design	0	1	0	5	0	6	4	16
special needs	1	3	0	1	2	4	3	14
inclusion	1	4	0	4	1	0	4	14
ability-abilities	0	1	0	5	1	5	1	13
Covid-19	0	0	0	1	3	6	2	12
inclusive education	2	1	1	1	1	6	1	13
perspective	1	0	0	3	1	2	4	11
challenges	0	0	0	2	3	3	2	10
participation	0	0	0	0	4	4	2	10
support	0	2	0	0	1	3	4	10
access	0	0	1	2	1	3	2	9
disability	0	0	0	1	1	6	1	9
pedagogy	2	1	0	0	0	4	0	7
university	0	1	0	2	0	0	5	8
digital	0	0	0	0	0	5	1	6
inclusive distance/online education	0	0	0	1	1	2	2	6
racial microaggressions	0	0	0	0	0	0	6	6
TOTAL	19	21	10	51	33	98	66	298
N=Articles	2	3	1	3	3	8	4	24

5. Conclusion and Suggestions

The mutually supportive structure of the basic concepts of inclusive education and distance education as independent educational approaches has remarkably come to the fore, especially after the COVID-19 pandemic. Using the basic concepts of inclusive education, such as access, participation, and support, together with distance education, has a high potential to contribute to increasing the inclusiveness of distance education. Inclusive distance education is perhaps the only way to provide equal educational opportunities to disadvantaged groups caused by access limitations, language barriers, learning level diversity, learning losses, physical and social-emotional limitations, ethnicity, religious beliefs, gender, socio-economic status, forced migration, disability, and special needs. In ensuring the sustainability of distance education and inclusive education, it will be possible to offer equal opportunities in education in line with the needs of societies and individuals by considering these two educational approaches together and providing access, participation, and support in line with Universal Design Principles. Inclusive distance education can contribute to the Sustainable Development Goals of quality education (SDG-4), gender equality (SDG-5), poverty reduction (SDG-1), health and well-being (SDG-3), social justice and reducing inequalities (SDG-10), industry, innovation and infrastructure (SDG-9), peace and justice (SDG-16). Thus, an important step can be taken in creating a sustainable world. There is a need for research on the feasibility of the "Inclusive online/distance/digital education" approach and the opportunities the applications provide. The fact that there are few publications in the literature on inclusive distance/online education indicates the need for research on this subject. This research is limited to certain key concepts. Investigating "inclusive online/distance/digital education" contexts using different scanning concepts may be helpful.

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