REVISTA SOCIAL FRONTERIZA
ISSN: 2806-5913
https://revistasocialfronteriza.com/ojs/index.php/rev/index
Vol. 3 Núm.1 (114-129): Marzo-abril 2023
Contacto@revistasocialfronteriza.com
Editorial: Complementos en la Ciencia
Frecuencia Bimestral

Universal Design for Learning as a tool to promote educational inclusion in Ecuador.

Diseño Universal para el Aprendizaje como herramienta para fomentar la inclusión educativa en Ecuador.

Autores:

Isabel Cecilia Aguirre Vargas
Universidad Nacional de Educación UNAE
Ciudad: Azogues
País: Ecuador
Correo Institucional: isabel.aguirre@unae.edu.ec
ORCID: https://orcid.org/0009-0006-7583-4693

Nube Jaqueline Carangui Lojano
Centro de Educación Inicial María Montessori
Ciudad: Azogues
País: Ecuador
Correo Institucional: nubecarangui@hotmail.com
ORCID: https://orcid.org/0009-0002-0091-2256

Jenny Fabiola González Sánchez
Prefectura del Cañar
Ciudad: Azogues
País: Ecuador
Correo electrónico: jenyfa28@gmail.com
ORCID: https://orcid.org/0000-0002-0107-0823

Citación/cómo citar este artículo:

Aguirre, I., Carangui, N. y González, J. (2023). Universal Design for Learning as a tool to promote educational inclusion in Ecuador. Revista Social Fronteriza, 3(1) pp. 114 -129

Enviado: 30-Noviembre, 2022 **Aceptado:** 30-Diciembre, 2022 **Publicado:** 6, enero-2023

Aguirre, I., Carangui, N. y González, J. (2023). Universal Design for Learning as a tool to promote educational inclusion in Ecuador. 114-129

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Abstract

The main purpose of the UDL is to be able to anticipate the barriers or challenges that may arise, taking into consideration that these depend mainly on the context in which the student finds himself and the pedagogical approaches applied by the teacher, as well as assuming that it is possible that improvements may be required that favor student learning. Therefore, this article aims to analyze the DUA as a tool to promote educational inclusion in Ecuador, in which case a research based on a documentary design was carried out, since a systematic review of different publications available in the databases of indexed journals and reports that would allow to comply with the formulated objective was carried out. Consequently, the collection of information was not carried out through direct sources, but on the contrary through the selection of six secondary sources that met the necessary criteria to guarantee their validity and relevance for the present study. The findings suggested that the DUA is a key pedagogical framework to achieve integral educational inclusion, since the principles that demarcate this model are aimed at recognizing the individual needs of each student considering the diversities that exist within the classroom. However, it is concluded that despite its importance and contribution, not all educational actors are sufficiently trained regarding the correct application of the SAD which can constitute a disadvantage and limit its use.

Keywords: Education; Universal Design for Learning; educational inclusion; Learning resources.

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Resumen

El propósito principal del DUA radica en poder anticipar las barreras o los desafíos que pudieran suscitarse, tomando en consideración que estos dependen principalmente del contexto en el que se encuentra el estudiante y los enfoques pedagógicos aplicados por el docente, así como también asumiendo que es posible que se requiera realizar mejoras que favorezcan el aprendizaje de los estudiantes. Por lo tanto, este artículo tiene como objetivo el analizar el DUA como herramienta para fomentar la inclusión educativa en el Ecuador, en cuyo caso se realizó una investigación basada en un diseño documental, puesto que se llevó a cabo una revisión sistemática de diferentes publicaciones disponibles en las bases de datos de revistas indexadas e informes que permitieran dar cumplimiento al objetivo formulado. En consecuencia, el levantamiento de la información no se realizó por medio de fuentes directas, sino por el contrario mediante la selección de seis fuentes secundarias que cumplieron con los criterios necesarios para garantizar su validez y relevancia para el presente estudio. Los hallazgos encontrados sugirieron que el DUA es un marco pedagógico clave para alcanzar la inclusión educativa integral, puesto que los principios que demarcan este modelo están orientados a reconocer las necesidades individuales de cada estudiante teniendo en cuenta las diversidades que existen dentro del aula de clase. No obstante, se concluye que a pesar de su importancia y aportación, no todos los actores educativos se encuentran lo suficientemente capacitados respecto a la correcta aplicación del DUA lo que puede constituirse en una desventaja y limitar su aprovechamiento.

Palabras claves: Educación; Diseño Universal para el Aprendizaje; inclusión educativa; recursos de aprendizaje.

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Introduction

Inclusion has become a process that leads to the implementation of a series of changes involving various fields of action and the participation of the different actors in a society (Espada, et al., 2019). In the educational field, a series of challenges have arisen that have had to be addressed emergently to promote the inclusion of students with disabilities, however, the process has been gradual and for this it has been necessary to implement institutional policies aligned with what is established in the current regulatory framework that determines the responsibility of the Ecuadorian State and the competent agencies. to promote an education system that guarantees equality, equity, and respect for the diversity of students who converge in the classroom. In addition, it has been necessary to restructure the pedagogical approaches applied by the teaching staff so that they can diversify and guarantee the participation and permanence of the student body and avoid a possible dropout in the medium or long term (Ministerio de Educación, 2020).

The approach of recognition of diversity fosters a new juncture on contemporary educational systems and pedagogical processes, because it leaves aside the segmentation between students with and without disabilities, since it is considered that everyone is different and therefore require a wider range of resources and support tools that allow them to be included in teaching environments, actively participate and achieve meaningful learning. This implies moving towards the implementation of Universal Learning Designs (UDL), in which the fundamental axis of curriculum development focuses on students, leaving aside standardized models (Pérez & Hernández, 2017; Galicians, 2022).

The UDL is described as a theoretical model that contributes to creating the right conditions within the educational environment for all individuals with or without disabilities to access teaching processes that fit their needs and their reality, thus favoring to achieve an active and meaningful learning. This frame of reference arose in response to the urgency of attending to the diversity of students who are integrated into the classroom. It should be noted that in the context of fundamental human rights, all people have access to equitable and quality education, therefore it is essential that

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different forms of learning be considered in order to reduce the barriers that limit the full participation of all (Delgado, 2021; Parody et al., 2022).

However, problems associated with the implementation of the UDL in educational institutions may also arise, since to achieve favorable results it is required that both managers and teaching staff have sufficient knowledge and training for its correct application, since it is one of the essential pedagogical models to promote inclusion, It needs to respond to the needs of a diverse environment, so that it can provide students with and without disabilities with the essential resources to create participatory spaces and achieve the desired learning. In the Ecuadorian context, the progress achieved is still insufficient to guarantee educational inclusion, this is attributed to the fact that there are still barriers that limit the access and participation of students with disabilities to different educational environments, this leads to absenteeism and / or dropout. Therefore, it is essential that actions continue to be carried out and mechanisms implemented to overcome these barriers in favor of the entire student community (López & Mendoza, 2021).

Based on this perspective, this research focuses on the development of a systematic review of the available literature with reference to the implementation of the UDL, with the aim of conceptualizing this model and collecting experiences to determine how favorable its application is to promote inclusive education. In turn, through a documentary study it will be possible to identify how much is known to date about this model, what are the recurring problems that limit its effectiveness and what are the actions that must be followed to achieve better results in favor of inclusion.

Theoretical foundation

Despite being a design developed forty years ago, its application and results in the educational area is considered a novel activity, which has been little researched in what corresponds to the implementation (Capp, 2020). The requirement for this implementation is to maintain an approach with the reality that happens in the school process, being the strengthening of attitudes and skills coexisting these as basic values in pedagogy, which put the student as a center of study where the main teaching and learning process is established to which the knowledge will be destined (Bravo & Santos,

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2019). The focus of the DUA in education is carried out in order to include all students, where their different abilities and potentialities are considered, eliminating any pedagogical barrier, promoting the participation of all members of the classroom, in order to generate a society of professionals with a representative contribution of integral training in community development (Gargiulo & Metcalf, 2022)

The Universal Design of Learning is integrated with three fundamental elements, breaking the separation between students with disabilities and the so-called normal (Seok & Quiros, 2019). The first principle has as reference to the educational body which must provide in its educational intervention different forms of representation, the following describes that the student tries to express what he learned during the pedagogical instruction, ending with the motivation that caused what he learned and interest that shows to continue learning. The organization can be carried out in a different way, that is, it depends on the teaching purpose to be achieved, however, the content is solid, the guidelines presented by DUA provide a framework of reference having as perspective the permission of application to any educational component (Lagos, 2019; Herrera, et al., 2019).

The definition of the objectives, selection of the contents, the didactic materials, ending with the evaluation of what has been learned, respond to a process of diversification (Houston, 2018). Determining that the principles and guidelines of the DUA are those that are framed in this reasoning, that is, they are the essential ones for the selection of work tools generating the styles of evaluation of the knowledge taught (Bedrossian, 2018).

Success in education comes hand in hand with the implementation of methodological teaching strategies, these should be attractive to students, fostering a taste for scientific knowledge (Griful, et al., 2021). For this, the use of pedagogical games, the manipulation of new communication technologies which favor the learning process being more attractive for the educator and his students is important (Celis & Zea, 2018). On the other hand, (Diaz & Sánchez, 2018), they mentioned that the didactic strategies that are implemented in the teaching process must consider diversity from the curricular scheme, in which the importance of the various organizational forms of space, techniques and methods that have been used is pointed out.

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This means that the existence of application needs to the didactic pedagogical procedures that are carried out through dynamic games can generate knowledge capture solutions in an easy way, being the ideal procedure for the reduction of problems that are found in daily life, allowing students to generate their own knowledge through experimentation, inquiry, exploration and research (Dempsey, et al., 2021). Inclusive education is aimed at guaranteeing the right of all children within the educational area, the quality in which everyone should have an opportunity to learn, develop their educational and personal potential, in the same way reach a level of skills to guarantee the enjoyment of their rights as participatory citizens in the general society, keeping in context their responsible activities with the society that surrounds them, presenting appropriate characteristics from a family, cultural, gender, religion and origin context.

Government rights guarantee that education is accessible to all citizens in general, however, it is necessary to ensure that quality education is distributed to each of the students in their various educational stages. Additionally, it is mentioned that teachers must accept and maintain a line of respect for the diversity to which they impart knowledge, learning to give value to a new learning opportunity and not identify it as a problem.

Methods

The study was carried out through a documentary design based on the systematic review of publications in which the DUA and its applications to promote educational inclusion are described and analyzed. In this case, the bibliographic materials that were selected met criteria of timeliness and credibility, to ensure that the information presented is relevant to fulfill the research objective. Regarding its scope, it was descriptive, which allowed detailing the characteristics and principles that frame this pedagogical model to later expose the findings found in a summarized way for analysis and discussion.

The protocol applied for the selection, registration and analysis of bibliographic information sources was based on the parameters described in the PRISMA statement, whose purpose is to offer researchers a structured guide for the synthesis of studies

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based on three aspects: 1) motivation of the study; 2) applied methodologies and 3) findings found (Sánchez, et al., 2022). The search platforms used were Scielo, Dialnet, Redalyc, Ministry of Education of Ecuador and Google Scholar, from which six scientific articles were extracted that met the following inclusion and exclusion criteria:

Criteria for inclusion of studies

- Scientific articles published during the period 2019-2023.
- Articles that the variables of DUA and inclusive education.
- Articles published in Spanish.
- Articles that have been published in Ecuador are prioritized.

Criteria for exclusion of studies

- Books, theses or conference reports.
- Publications that are more than five years old.
- Publications made in unreliable sources.

To facilitate the search through the different platforms, keywords associated with the subject of study were used: "Universal Design for Learning", "DUA", "inclusive education", "DUA in Ecuador", "inclusive education in Ecuador". The articles that met the defined criteria were organized in a table, in which the most relevant information was summarized for further analysis.

Results

Through the review of the selected articles, the following general findings are summarized:

Table 1: Article Review

Article	Intervention	Methodology	Conclusions
(Coppiano & Corral, 2021)	To analyze the educational	Non-experimental research based on a	The UDL is a methodology that can

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	experiences associated with the implementation of the DUA in the Ecuadorian context.	quantitative, exploratory-descriptive approach. A field study and a review of documentary information were conducted to complement the findings.	promote educational inclusion, however, in Ecuador it has been scarcely applied. The level of knowledge of educators on this subject is low, which prevents them from applying strategies based on the principles of the UDL, so it is recommended to implement knowledge update programs so that teachers can incorporate this innovative methodology.
(Cortés, Ferreira, & Arias, 2021)	Analyze the theoretical foundations of the UDL and its contribution to educational inclusion in international contexts.	Based on a qualitative approach, a systematic review of publications found on websites of international institutions and UNESDOC was conducted.	The review of international experiences showed that in some cases the fundamentals of the SAD tool are not fully applied. Under this scenario, it is concluded that there are still many aspects that must be addressed

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			to achieve educational inclusion.
(Pincay & Cedeño, 2023)	Analyze the way in which the DUA affects educational inclusion under the approach of recognition of diversity.	Research based on a mixed approach, exploratory-descriptive level. Educator surveys, expert interviews, and review of secondary information were applied.	The findings reflect that the application of the DUA in the Ecuadorian educational framework is still limited, which has had a negative impact on the processes of educational inclusion. Although there are teachers who have the necessary knowledge regarding this subject and from this they apply strategies to attend to student diversities, there are also educators who do not have knowledge about it and therefore must be trained.
(Espada, Gallego, & González, 2019)	Identify the strategies used by educators at the basic education level in order to	Research based on a quantitative, descriptive level approach. A survey was applied to a sample of 26 educators from	The findings of this research reflected that less than 30% of educators have knowledge about the DUA, likewise actions

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	establish whether they correspond to the principles of the UDL.	different educational institutions in Ecuador.	were identified that limit the accessibility of students with visual and hearing disabilities, due to the lack of preparation of the teaching staff, who in many cases do not have the skills to meet the specific needs of these students.
(López & Mendoza, 2021)	Collect theoretical information that allows deepening the knowledge regarding the SAD in the Ecuadorian context.	Research based on a qualitative approach of a narrative nature, through the systematic review of secondary information.	In the Ecuadorian educational field, the application of the UDL has not yet been standardized to promote inclusion at all levels of training. For this purpose, it is necessary to deepen the knowledge of this tool and mainly to guide educators so that they can implement it.
(Gallegos, 2022)	Conduct a systematic review to obtain in-depth information	Research based on a documentary review, the PRISMA protocol was applied for the	The findings reflect that the DUA is a pedagogical model that can promote educational inclusion,

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regarding the DUA and the role it plays in promoting educational inclusion.	selection of sources of scientific relevance.	because it encourages the recognition of student diversities that converge in the classroom. However, the poor preparation of teachers, who are recommended to be trained in this area, was identified as a limitation for its application.

In a general context, it was possible to identify that at the local level there is little knowledge regarding the UDL, although international experiences highlight its effectiveness in promoting educational inclusion, there are other factors that have prevented its application in a greater number of educational institutions. In this case, educators have not received training in this regard, do not know about the principles of the DUA and the strategies that can be applied to make teaching programs more flexible, so that several of the authors referenced agree on the need to train teachers so that they can implement this pedagogical model.

Discussion

The UDL according to the perception of different authors can be seen as a pedagogical model, a tool or a methodological guide. Despite the divergences associated with its conceptualization in the studies reviewed, there is a convergence regarding its contribution to the promotion of educational inclusion. Since its principles focus on equality and equity, it envisages the development of diversified teaching strategies so that pedagogical curricula can be adapted to the specific needs of students at different levels of training.

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However, research conducted by other authors suggests that there is still little knowledge about the UDL, which implies that it has not been implemented in all educational institutions in Ecuador. The few experiences that have been collected to date highlight its usefulness in promoting educational inclusion, for which it is necessary to train the teaching staff and provide the advice required for the development of plans for its application.

Conclusion

The theoretical contributions made by various authors referenced in this article allow us to conclude that the DUA represents a tool and a pedagogical model that promotes inclusive education, since it addresses different approaches that comprehensively allow the design of educational programs flexible enough to adapt so that it can respond to the needs of each student. The recognition of the diversity that integrates the classrooms is an important step to ensure access to education for students with disabilities, since through the application of effective strategies it allows to reduce the gaps and barriers that still limit their inclusion.

Likewise, it is concluded that the DUA promotes the creation of conditions that favor student learning, through the implementation of strategies that allow working on the development of skills, abilities, and competencies. However, it is necessary that educators have the necessary knowledge for its application, for this it is recommended that in teacher training processes they are provided with the tools to recognize educational barriers and design strategies that allow them to minimize them.

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Conflicto de intereses

La autora declara que este trabajo no presenta conflicto de intereses