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## Innovative public policies in the development of reading skills in basic education: regarding the systematic mapping protocol\*

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### ABSTRACT

Today the urgency to improve comprehensive reading in the first years of schooling is even greater as a result of the Pandemic, especially in Latin America. Generating innovative public policies focused on the development of this competence will be fundamental to diminish the educational gap generated. The objective of this article is to analyze the evidence published over the last four years (2015 and 2020) with respect to innovation in effective public reading policies and to identify publications on the subject that can contribute with other studies or practical experiences in order to accelerate the learning process. The systematic mapping was used as a systematic method for the review of 233 articles that were published in Web of Science (WoS) and Scopus database. Inclusion, exclusion and quality criteria were applied to obtain the maximum of relevant information. The results show the type of methodology and evaluation used, the most cited articles, the journals where they were published, the geographical distribution of the authors, application contexts and the topics addressed. This document is presented as a challenge for educational policy developers and in particular for those who focus on reading skills, providing evidence to generate transferable models for accelerated learning and educational change so required by this society in the current situation.

### CCS CONCEPTS

• General and reference • document types • reference works

### KEYWORDS

\*Innovative public policies in the development of reading skills in basic education: regarding the systematic mapping protocol

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Public policy, reading skills, basic education, mapping method, innovation, technology, empirical method

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### 1 INTRODUCTION

Students who learn to read comprehensively in first grade ensure good academic performance throughout the basic educational path. Learning to read in the first years impacts the entire school system, accelerates learning, and makes possible to shorten the large learning gap generated in Latin America, especially for groups that live in vulnerability. The design and implementation of effective and innovative public policies, focus on learning to read, have become a matter of urgency for the countries resulting from the Pandemic [1] The evidence indicates that if learning to read comprehensively is delayed or made difficult, it has high consequences in people's lives and a great social impact [2.3.4]. For this reason, public policies involving reading in Latin America have taken on great importance in the last decade, which will increase significantly due to the suspension of classes because of the Pandemic. These policies have become strong indicators of

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the quality of education and the progress of countries [5] and a goal for countries and their planning in future public policies [6]. Hence the importance of designing and implementing reading programs that develop this competence early [7,8,9]. Therefore, the need arises to carry out a systematic mapping of the available literature on successful public policies in reading at the basic level, in order to contribute to research and to the countries' decisions on this subject

## 2. LITERATURE REVIEW

In this systematic mapping, public policy implementation is defined as the process by which governments transform their political vision into programs and actions to execute results. [10]. Governments are judged by their political decisions, their results and their effectiveness, that is, by the impact of their policies on the lives of their citizens. Effectiveness is associated with the design of public policies [11,12], which are based on criteria such as coherence, consistency and congruence between policies and objectives, along with flexibility of use among the options of different tools [13,14,15,16]. International organizations such as the Global Centre for Public [17] considers that the implementation of educational policies is a complex and evolving process, whose effectiveness today is based on citizen participation, public-private partnerships [18,19,20,21], their empowerment, and iteration, at the time of implementation, along with policy reflection and evaluation. The literature shows evidence of innovation in intervention models [22] that involves local communities and stakeholders in reaching the end user [23,24]. Innovations in technologies are a powerful tool at the level of a technological product or process, a good or a service [25,26,27], increasing effectiveness and enabling quality learning [28]. An innovative public policy will be effective if it allows for the empowerment and participation of citizens in the design of planning strategies, [29] facilitates the evaluation of program impact, and strengthens the State's capacity to establish development strategies that are consistent and sustainable over time.

Today, the acquisition of comprehensive reading skills is considered a basic right of every citizen. And in a continent with great educational inequalities, the learning of comprehensive reading becomes even more urgent. Evidence indicates that if the learning of comprehensive reading is delayed or become difficult, it has high consequences in people's lives and a great social impact [30,31]. Hence the importance of designing and implementing early reading comprehension development programs as part of public policies [7,8,32,33,34,35]. In this systematic mapping, comprehensive reading is defined as a competence with three components: oral language, ability to decode printed text and strategic knowledge according to McKenna and Stahl's cognitive model [36]. A reading program whose objective is a public intervention such as the development of direct reading on a social reality used in conjunction with other programs and other instruments, could be an integrated public policy.

To make it effective it is crucial to consider the elements that impact the citizenry and evaluate the impact of the effects

produced directly or indirectly by each intervention. In this way, evidence-based decisions can be made in the generation of new public policies, in such a way, that countries optimize their resources and accelerate the reduction of learning gaps. Global organizations are promoting this type of evaluation [37,38,39], so that developing countries can achieve international standards, greater productivity and inclusive growth [40]. Some authors, due to the complexity of the educational context, suggest using impact evaluation in the framework of a mixed methodology [41].

There has been increased interest in global research in this field over the last decade, now more than ever before in the current context of the pandemic. Latin America has been faced with a very tough health and economic scenario, which will have a strong impact on increasing the learning gaps in the educational system [42,43,44,45,46]. According to the OECD, it could take between 21 and 29 years for some countries in the continent to achieve performance levels equivalent to those of the OECD countries [47], prior to the Pandemic. This systematic review of the literature on innovation in public policy and the development of comprehensive reading skills is key to narrowing the gap in developing countries that will see a significant decline in their progress. In this sense, the objective of this article is to analyze the most recent empirical evidence published, [48] focusing on being able to answer the following questions: What research has been carried out in this area? How much experimental or theoretical research? Which countries, which publishers are behind these studies on public policy in reading? What future research and questions could be formulated based on this categorized review? For the systematic mapping study was conducted on articles published in January 2015 to December 2019, following various methodologies. In this way, an overview of the state of the art with respect to educational public policies in early reading and innovation is obtained. The document presents the context, methodology, results, data analysis and finally, a conclusion that mentions the findings and areas of opportunity for future research.

## 3. METHODOLOGY

The systematic mapping method makes possible to identify what is known about a topic, what has been researched, what aspects remain unknown, and to obtain information about current trends and future challenges regarding this topic. This review is systematic, not arbitrary: neither biased nor subjective, on the contrary, it considers examining the best available scientific production using the best sources of information. It is complete because information systems are presumed to facilitate access to the bulk of the quality production of a discipline at the international level; and nothing has been discarded or included without following other criteria than those made explicit. Furthermore, being explicit implies that both the sources used and the search and selection/exclusion criterias are known and reproducible and explicit. Other researchers are allowed to check the work and, if they wish, follow the steps and contrast the results obtained to determine their accuracy or degree of success. In order to

Research Questions	Types of responses
RQ1 How many studies are in the WOS and Scopus databases from 2015 to 2019?	Number of articles in Scopus Number of articles in WOS Number of duplicate items Number of theoretical-conceptual articles Number of empirical scientific articles.
RQ1a What type of design did they use?	Qualitative Design Quantitative Design Mixed Design
RQ2: Which articles are the most cited?	Most cited articles
RQ3: What is the geographical distribution of the authors?	Geographical location of the first author
RQ4 Which journals have published more on this line of research and at what quartile levels of the journal are they?	Magazines with more publications Q level of the magazine
RQ5 : What field of application of educational public policies is the most frequent in the articles ?	Number of articles in each type of public policy according to these categories? (Social, Economy, Health, Education, Politics, Environment, Cultural)
RQ6: In what contexts are these studies carried out?	Articles that implement their public policies considering a System context, or a Model, Program or Tools context
RQ7: What are the main issues addressed in this line of research?	Number of research articles on public policies oriented towards the key concepts of welfare and progress (Work-Life Balance Skills/Behaviors, Social Connections, Civic Engagement, Governance, Environmental Quality, Health Standard)
RQ7a: What are the key words related to innovation in each study?	Number of articles that consider innovation based on the following classification, Knowledge, Design, Technology Marketing, Organization
RQ8: What is the classification or scheme that groups the existing gaps for future studies?	Number of unique articles, related with PE criteria identification process, performance management process, criteria integration, criteria measurement

carry out this study, several methodological ideas from studies were considered [49,50,51] and a protocol with defined steps to work on scientific reports on the area of study. The research protocol has been outlined, and is illustrated in Figure 1:

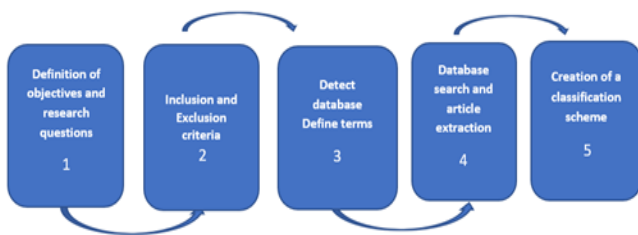


Figure 1 Protocol for systematic literature review

A good systematic mapping always has the research question in mind. According to the work of Kitchenman et al. [52], specifying research questions is the most important part of any systematic review. The questions drive the entire methodology of the systematic review; the search process must identify primary studies that address them, the process of data extraction to extract the data needed to answer the questions. And the process of data analysis must synthesize the data in such a way that the questions can be answered. The methodology allows for the identification of research gaps and opportunities for future research. To achieve this, questions

are developed and at each step of the methodology, the authors behind the methodology are written and cited. Table 1 shows the research questions developed for this study.

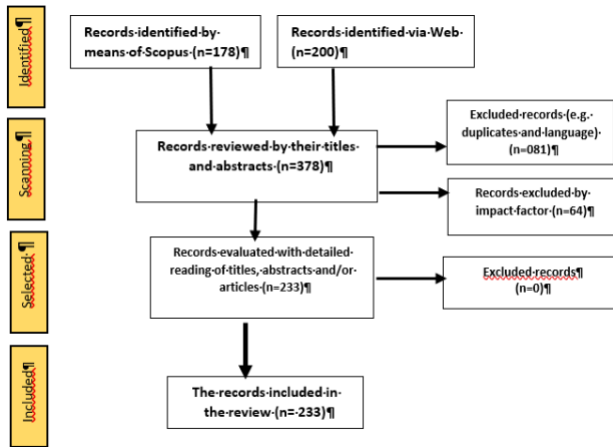
Table 1 Research questions and type of response sought in the review

Key to this methodology is defining the criteria for inclusion and exclusion: According to Kroll et al. [53] In this study, the following were included: studies on innovative public policies related to reading skills, those published only in journals that can be found in two databases: Web of Science (WOS) and Scopus, published from January 2015 to December 2019, and related to the educational sector (social sciences, psychology, multidisciplinary, educational research, medical education, environmental education). The exclusion criteria were; duplicated articles, books, book chapters and speeches, articles in Q-rated journals, articles in difficult-to-translate languages such as Russian.

Table 2. Wos and Scopus search chains

Scopus search chain
<b>(TITLE-ABS-KEY (educational) AND TITLE-ABS-KEY (public AND policies) AND TITLE-ABS-KEY (innov*) OR TITLE-ABS-KEY (school AND reading AND programs) AND DOCTYPE (ar ) AND PUBYEAR &gt; 2014</b>
WOS search chain
<b>TEMA: (educational) AND TEMA: (public policies) AND TEMA: (innov*) OR TEMA: (school "reading program") Refinado por: TIPOS DE DOCUMENTOS: (ARTICLE) Período de tiempo: Últimos 5 años. Índices: BKCI-S, BKCI-SSH, SCI-EXPANDED, ESCI, A&amp;HCI, SSCI, CPCI-SSH, CPCI-S.</b>

In this step, the search and extraction of articles was completed and they were placed in an Excel sheet. The database search produced 200 results in Scopus and 178 in Scopus. Subsequently, the duplicates were eliminated, the Scopus database was maintained and WOS was reduced to 132 articles. Then, a detailed review of the journals in which the articles were published was performed and 64 were eliminated because it was not possible to identify their impact factor (Q) and finally 13 articles were eliminated because of the language factor, leaving those in Spanish and English. Finally, the database was composed of 233 articles included in total.



→ Figure-2: Review-phases

### 4. RESULTS

The methodological process of mapping was applied, creating an excel database where articles and metadata needed were organized to answer the research questions, as well as to illustrate the results. This database can be accessed at Doi: 10.5281/zenodo.4075686

#### RQ1 How many studies are in the WOS and Scopus database from 2015 to 2019?

A total of 233 items were obtained. The abstracts of all the articles were reviewed to determine that 83% of them are experimental, 120 of Scopus and 74 of WOS; being the qualitative methodology the most abundant (51%), then the quantitative (44%) and the mixed one that reaches only 5%. On the other hand, 38 (16%) of the studies follow a theoretical-conceptual methodology, of which 36 are Scopus and 2 WOS studies (see Figure3).

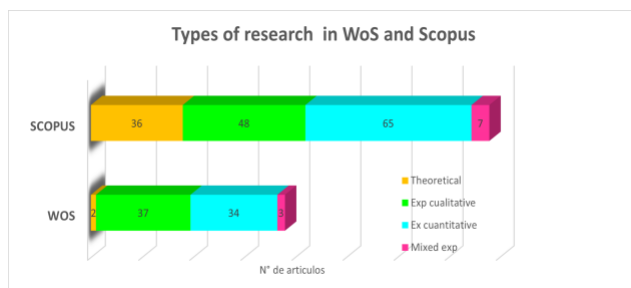


Figure 3. Number of articles according to the type of methodology

#### RQ2: What are the most cited articles?

100% of the most cited studies (more than 20 times) are found in the Scopus Base and correspond entirely to the area of Education. The most cited in the systematic review (i.e., 50 times) is related to research on the digital governance of public education.

#### RQ3: What is the geographical distribution of the authors?

Considering the first name of the authors, the articles related to public policies and the development of reading skills are distributed most frequently in the United States (31%), followed by the United Kingdom with 13%, Brazil (6.4%) and India (4%).

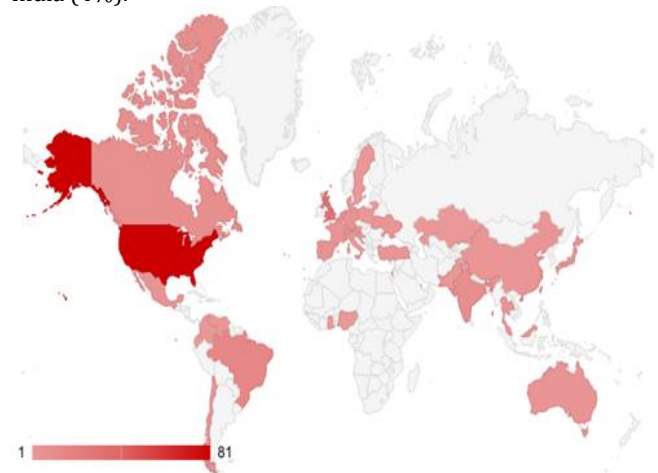


Figure 4: Geographical distribution of authors of articles by country

#### RQ4. Which are the journals with more publications in this line of research?

The main journals in the ranking that contain studies on innovative educational public policies in relation to reading are shown in Figure 5:



Figure 5: Journals with more publications on this study theme Figure 6 shows the representation of the impact factors of each journal; Q1 (blue), Q2 (green), Q3 (pink) and Q4 (orange) and shows the areas or topics of study most published in the journals in their

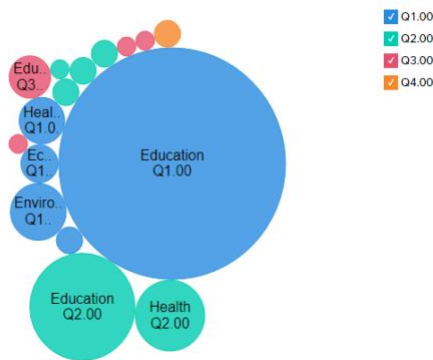


Figure 6 Journal frequency in articles and impact factors

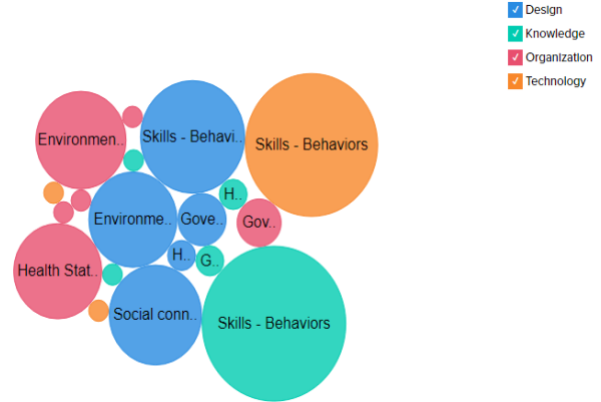


Figure 8 Types of innovation in public policy in relation to categories of well-being and quality of life

**RQ.5 What area of society impacts public policy in this study?**

The fundamental area of action where research is applied is education, given the search criteria. The institutions that participate are mostly private (65%), then public 34% and only 1% of them participate in co-creation of public and private institutions. In environment and health, 83% and 86% occur in the public sector. In the area of Economy and Health, co-creation is favored.

**RQ6: In what contexts are these studies developed?**

Program		Model	
Elementary School	Secondary School	Higher Education	S...
	Nursury -Elemen...	Not applied	...
	Hig... Sc...	System	Tools
	Midd... Not a...	Not applied	Not... ... Poli...

Figure 7: Public policy tools versus educational level

**RQ7: What are the themes present in the research lines?**

If we consider a country's focus on well-being and quality of life [55,56], 55% of the articles focus their public policies on developing skills and changing citizens' behavior, 18% and 10% on environmental quality, health status and social connections. Finally, 6th in government governance, knowledge (green) organization (red) and technology (orange).

**5. DISCUSSION**

Recent scientific research in relation to innovative public policies in the educational field and in particular in the development of reading skills is strongly inclined towards empirical studies on theoretical-conceptual ones, and qualitative methodology on quantitative ones. The mixed methodology is scarce (see Figure 3), and covers topics related to the application of models and tools in public policy and the use of social media in student self-efficacy [57,58,59]. The studies are published in high impact journals, among them Reading and Writing Quarterly (see Figure 7). This opens a research space that, according to authors such as [60,61,62], would enrich research by increasing the appropriation of knowledge and the sustainability of the policy under study.

An innovative public policy will be effective if the design of planning strategies facilitates the evaluation of program impact and enhances the State's capacity to establish development strategies that are consistent and sustainable over time. According to the OECD [18]. Governments must develop public policies by building technical capacities to design, implement, monitor and evaluate them using technologies digital to establish strategies and develop them in a more efficient and sustainable way. This is in line with this systematic review of literature, whose article more cited, far above average, is related to innovation in public policy; the digital governance of public education. Added to this is the high presence (Figure 8) in studies of innovation as new knowledge and the use of technology in them [25,26].

Although it can be seen that the current high-standard research in these Wos and Scopus databases on public policy considers technology, these studies are carried out primarily by countries such as the United States and England (see Figure 4). In Latin America, the studies carried out do not reach 5% of this review and in these, innovation has been delayed. The pandemic has raised this concern and, except in Paraguay due to its anticipated Ceibal Plan [63], the existing technological gap has further increased the educational gap. These technologies, says the Inter-American Development Bank, [64] represent a powerful tool for improving the empowerment and participation of citizens in the design of planning strategies. They facilitate the evaluation of the impact of government

programs and projects related to the development agenda and enhance the state's capacity to establish consistent and sustainable development strategies. As for citizen participation as a relevant factor in the effectiveness of public policies, it appears only rarely as a theme in the research reviewed. A large proportion of educational studies involve the private sphere more than the public sphere, and there is little coordination between the public and private spheres. Public-private co-creation is mostly seen in the area of economy and health, where studies show how this combination between private and state actors promotes innovation [65]. Evidence indicates that alliances and networks are fundamental at both local and global levels to increase the effectiveness and results of public policies. Technology is an opportunity to advance this line of citizen participation by making public policy more effective.

The management indicators for verifying compliance with Agenda 2030 consider that the countries of the region should develop public policies focused on the development of reading skills [11], in order to accelerate learning and thus narrow the gap between vulnerable and non-vulnerable contexts and between countries. The development of reading skills as a public policy must be part of the development plans of nations in order to achieve the sustainable development agenda. The high impact journals of this research seek to disseminate scientific information and evidence as a result of programs that cover topics that include factors such as motivation [66] emotions, learning strategies [67] successful pedagogical practices [68], as well as the use of technology in the development of reading skills [69]. Students with difficulties and in vulnerable environments are the focus of many of these studies [70].

The review of studies from 2015 to 2019 shows that there is a trend in research conducted in the school system in the implementation of programs rather than in the generation of models of intervention in public policies. This is related to the view that a program allows for the management of more specific reading strategies to optimize comprehensive reading and a model includes multiple factors and interactions that allow for broader and in turn more complex and transversal management in public policy. The few articles about models of intervention in the school system include varied factors such as self-efficacy, interactions, reading frequency, and emotional support [29] or refer to strategic instructional models for students with learning difficulties or a particular reading model [71,72]. Scientific research and the formulation of transferable models of intervention in public policies that affect the initial levels and all the actors involved, alliances and networks and the use of technology and accumulated evidence regarding reading, and a quantitative evaluation of the mixed type that allows for enriching the policy and raising the standard, are required. Innovation from knowledge and technology can be the driving force for integrating all actors throughout the design, planning and implementation process with the option of impact assessment.

This systematic mapping of the literature will contribute to research in relation to public policy in the countries of the region in the current context of the pandemic, allowing them to obtain evidence and approaches to advance new research and management on the subject. Some limitations to this study

were the use of only two databases in the search; WOS and Scopus which restricted the search and the language, which led to the exclusion of some articles written in the Russian language. Those with translation were incorporated.

An important recommendation for future researchers focuses on entering studies related to performance management processes or public policy management (37%) and on context identification processes (22%), i.e., those processes, methodologies or evaluations that allow knowledge of the contexts and the involvement of public policy actors in decision-making. They are followed by criteria that include the evaluation of public policies (19%) and those oriented towards integrative approaches (18%) that cover various dimensions or lines of action that in a coordinated manner enhance educational policies.

## 6. CONCLUSION

This mapping of literature contributes especially to the current challenges of research around the conditions required to design and implement innovative public policies in the educational field, specifically around the development of reading in basic education. Today, in the context of the Pandemic [73], this challenge is declared an emergency for the world and in particular for the countries of the Latin American region [12] where the learning gaps have increased and the impact is still uncertain. Literature evidence shows that it is necessary to generate public policies that are responsible, have an impact on citizens, and are sustainable and effective. This requires the creation of intervention models and programs based on evidence on reading

affecting the initial levels of schooling, involving all actors in forming communities, alliances and networks that incorporate innovation and technology in such a way as to optimize communication and policy evaluation. These results have practical implications for educational policy makers, particularly those focusing on reading skills, a

The call to open up to incorporate innovation, to generate public-private links that will make it possible to speed up and incorporate innovation in the design, implementation and evaluation of public policies in such a way as to generate models that can be transferred to other policies, which will make it possible to contribute to the processes of appropriation of knowledge and technology in the educational change so required by this society in the current situation.

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