

# 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, whose systematic method allowed for the review of 233 articles that were published in two databases: Web of Science (Wos) and Scopus. 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 that allow for accelerated learning and educational change so required by this society in the current situation.

## CCS CONCEPTS

General and reference, document types, reference works; Social and professional topics, Computing technology policy, Government technology policy

## KEYWORDS

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

## ACM Reference format:

Honorato-Errázuriz, J. & Ramírez-Montoya, M. S. (2020). Innovative public policies in the development of reading skills in basic education: a systematic mapping of literature. In Proceedings of the 7th International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM 2020). University of Leon. Spain.

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## 1. INTRODUCTION

Students who learn to read comprehensively in basic first grade ensure good academic performance throughout the basic educational path. Generating an impact on learning to read in the first years impacts the entire school system, accelerates learning, and makes it 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 that 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 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

## 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] consider 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 involve 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 program whose objective is a public intervention such as the development of direct reading on a social reality, which is used, in conjunction with other programs and other instruments, to implement a public policy.

To make effective any public policy, and in this case the development of reading skills, it is crucial today to consider those elements that impact the citizenry and to 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.

## METHODOLOGY

The method of systematic mapping makes it 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 have been used that 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, it is explicit implies that both the sources used and the search and selection/exclusion criteria are made known and reproducible by being systematic 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 carry out this study, several methodological ideas from studies carried out 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, which is illustrated in Figure 1 considering your study.

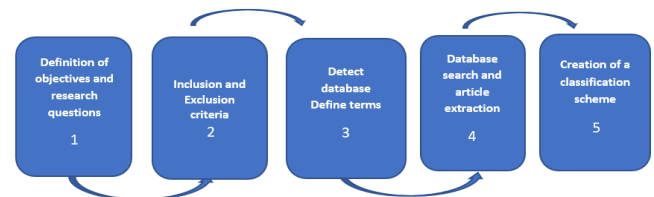


Figure 1 Protocol for systematic literature review

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

Research Question	Types of response
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

**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
(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 > 2014
WOS search chain
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&HCI, SSCI, CPCI-SSH, CPCI-S.

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.

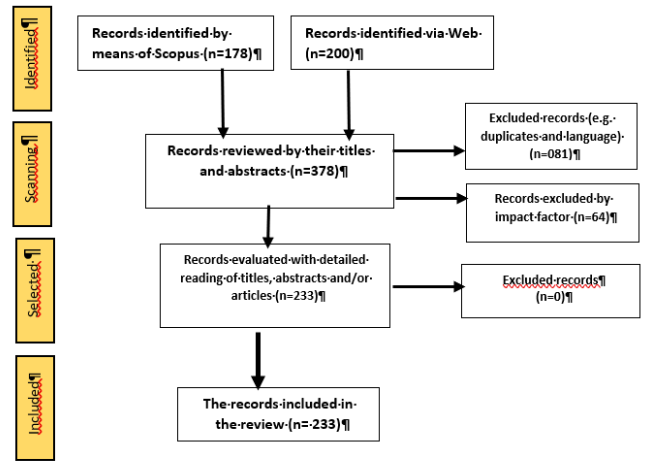


Figure 2: Review phases

RESULTS

The methodological process of mapping was applied, creating an Excel database where articles and metadata needed to answer the research questions, as well as to illustrate the results, were organized. This database can be accessed at the following link

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 (seeFigure3).

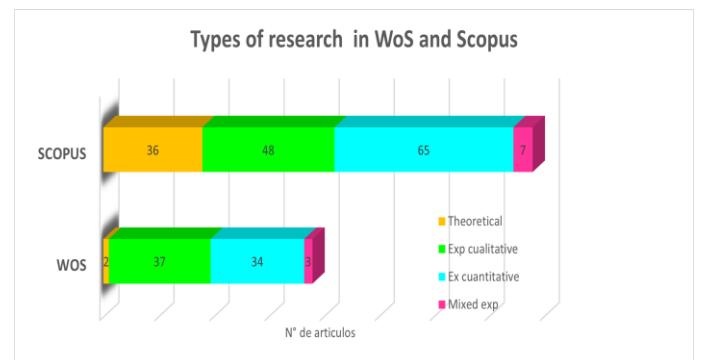


Figure 3. Number of articles according to the type of methodology

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



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

## 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 or 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.

## 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.

## ACKNOWLEDGMENTS

This work is developed in the Doctorate programme: Training in the Knowledge Society [74,75], the main tool for communication and visibility of progress. It will include all the publications, stays and attendance at conferences during the course of the work. The thesis is developed in the GRIAL Group of the University of Salamanca [76]

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