

## **The impact of educational policies on the quality of teaching: A systematic review of studies on school reforms**

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### **ABSTRACT**

In Brazil, free and quality education is a constitutional right for all. (Brazil, 1988) With a view to fulfilling this right, the National Education Plan (PNE) was proposed in 2014, by Law 13.005, and in its goal 7 it establishes the promotion of the quality of basic education in all stages and modalities. For the development of this goal, 36 strategies are proposed, among them, the development of the National Common Curriculum Base (BNCC).

**Keywords:** National Education Plan, Curriculum development, Quality of education.

### **INTRODUCTION**

In Brazil, free and quality education is a constitutional right for all. (Brazil, 1988) With a view to fulfilling this right, the National Education Plan (PNE) was proposed in 2014, by Law 13.005, and in its goal 7 it establishes the promotion of the quality of basic education in all stages and modalities. For the development of this goal, 36 strategies are proposed, among them, the development of the National Common Curriculum Base (BNCC). (Brazil, 2014)

In view of this, in 2015 the process of writing the BNCC for all Basic Education began, however, in 2016, the process is fragmented with the approval of Provisional Measure No. 746/2016, converted into Law 13,415/2017, which stipulates a major educational reform in the High School stage. In early 2018, while the BNCC for Early Childhood Education and Elementary Education is in the process of implementation, the BNCC for High School undergoes the reformulation of its 2nd version to adapt to the new proposal, and its 3rd version is approved at the end of this year. Therefore, there are two scenarios, by 2020 the BNCC for Early Childhood Education and Elementary Education should be implemented in all schools and by 2022 the BNCC for High School. (Casto, 2020; Brazil, 2016; Brazil 2017)

The normative document that determines the organic and progressive set of essential learning that every student must develop in Basic Education is called the National Common Curricular Base (BNCC), so that their learning and development rights are ensured, the formulation of the curricula of the school systems and networks of the States, the Federal District and the Municipalities and the pedagogical proposals of the school institutions must have it as a national reference with the objective of to minimize

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the fragmentation of educational policies, thus hoping to guarantee a common level of learning for all students. (Brazil, 2018) Thus, through the studies of Dias and Matos (2012) it is possible to characterize the BNCC as a public policy, as it seeks the response of the public power - the development and implementation of essential learning - to a political problem - educational inequality and lack of quality.

To ensure that the established objectives are achieved and to evaluate the effectiveness of the implementation of a public policy, in this study the BNCC, monitoring and evaluation must be carried out in different stages: before, during and after implementation. Prior assessment helps to identify the needs and demands of users, as well as to set clear and realistic objectives. During implementation, the mid-term assessment allows you to track the progress of implementation, identify challenges and bottlenecks, and make necessary adjustments. Subsequent evaluation, on the other hand, allows you to measure the effectiveness of public policy and evaluate its impacts, both positive and negative, on users and society in general. (Trevisan and Van Bellen, 2008)

## **OBJECTIVE**

In this context, the systematic review intends to compare the process of evaluating the implementation of educational policies in different countries, addressing the following research questions:

- What are the contexts of educational reforms?
- What teaching quality indicators are used to assess the (un)success of educational reforms?
- How are the impacts of educational reforms measured?
- Is proficiency sufficient to evaluate an educational policy?
- Is performance/proficiency enough to measure teaching quality?
- How have school reforms impacted the quality of education?

Based on this review, it will be possible to identify the main processes used to evaluate the implementation of educational policies, as well as to present an overview of the main indicators related to teaching quality and effectiveness. In addition, the review will allow the systematization and analysis of the data found, with the objective of providing subsidies for the elaboration of the evaluation of more effective and equitable educational policies.

## **METHODOLOGY**

The systematic review of the literature was conducted through the structure proposed in the Parsial virtual environment (2023): selection of research question, selection of database and article sources,

choice of search terms, application of practical screening criteria, application of methodological screening criteria, review and synthesis of results.

In order to identify ways to assess the impacts of the implementation of the National Common Curriculum Base on the quality of Brazilian education, articles and review articles were selected, through the indexed databases *Scopus* and *Web of Science*, covering the period from January 2023 to March 2023, limited to journal articles published in English, Spanish and Portuguese.

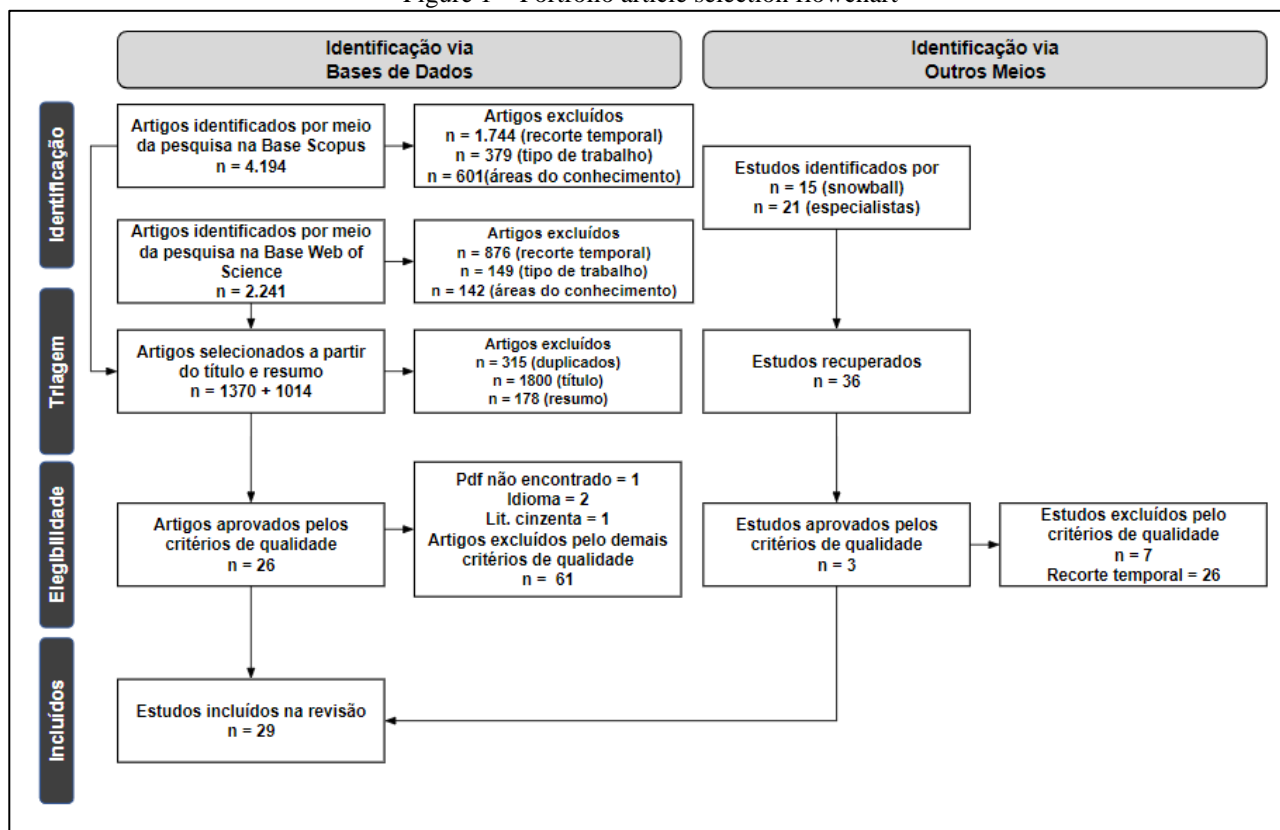
As the objective was to identify the implementation processes of different educational policies in different countries, especially their evaluation process, the search string applied to abstracts, keywords and titles was ("scholar" OR "student" OR "young") AND ("adjustment" OR "alteration" OR "modification" OR "reform" OR "reorganising") AND ("gymnasium" OR "high school" OR "school" OR "secondary school") AND ("competence" OR "efficiency" OR "performance" OR "proficiency").

After restricting the areas related to Administration, Public Administration, Social Sciences, Economics, Education, Management, Multidisciplinary and Psychology in the databases, the search resulted in 2,384 articles, reduced to 26 after applying eligibility and quality criteria.

The selected studies had their references manually reviewed to identify other publications adhering to the subject in the process known as snowball. Studies indicated by experts were also added. In order to standardize the time frame, it was decided to exclude 26 studies, included through the snowball process or indicated by experts, that did not fit the period from January 2013 to March 2023. All classified studies were applied to the criteria of eligibility and quality.

Figure 1 shows all the stages of selection and inclusion of the studies.

Figure 1 – Portfolio article selection flowchart



Source: Prepared by the Authors.

## DEVELOPMENT

The classified articles were submitted to the qualification process. In this process, 1 study in which it was not possible to find the full text in pdf format, 2 studies in which only texts in languages other than Portuguese, English and Spanish were found were also excluded, and 1 study that dealt with gray literature. After this exclusion, intending to select which articles could answer relevant questions for the research, the remaining 98 studies were qualified through 8 questions elaborated on the implementation and evaluation of educational policies/reforms. In Chart 1, it is possible to identify the purpose of each qualifying question, which had three levels of answer possible: "yes", "partially" and "no". Each level was assigned scores of 1; 0.5 and 0, respectively.

Table 1 – Brazilian population by household situation in 2003

| Qualifying question  | Purpose   |
|--|---|
| Is the theoretical framework robust and qualified?           | Evaluate whether the sources cited are reliable and relevant to the research area.      |
| Does the article discuss the impacts of educational reforms? | Identify which impacts are mentioned in the literature in general.                      |
| Are research gaps/opportunities marked?                      | Check whether limitations are presented to the conclusions drawn and new possibilities. |

|   |  |
|---|--|
| Does the article present the context in which the educational reform took place?              | Identify the motivation of educational reforms to understand the evaluation relationship.            |
| Does the article mention indicators of teaching quality used to evaluate educational reforms? | Identify which indicators of teaching quality to evaluate educational reforms.                       |
| Does the article relate proficiency/performance to quality of teaching?                       | Analyze how the relationship between performance and the quality of education offered is understood. |
| The article discusses how to measure the effects of educational reforms?                      | Compare how the effects of educational reforms are measured.   |
| Does the article address curricular educational reforms in basic education?                   | Prioritize curricular reforms, but do not exclude the others.  |

Source: Prepared by the Authors.

In the end, 29 articles were qualified that obtained a final score higher than 6 points (cutoff score of the sum of the questions). These studies were recorded and their information was tabulated. Table 1 indicates the selected articles, the number that were cited in the indexed databases, the objective of the study in adherence to the research and the main conclusions of the author(s) that can contribute to the issues discussed in this research.

Table 1 – Results of the qualification of the articles

| Article                                   | Quotes   |      |          | Punctuation | Objective(s) and considerations  |
|---|----------|------|----------|-------------|--|
|   | (Scopus) | (Os) | (Google) |             |  |
| Aloisi and Tymms (2017)                   | 11       | -    | 28       | 8           | The authors seek to compare the ability of policy-malleable variables to affect PISA scores with that of non-policy-malleable variables. There is a broad effort to make curricular reforms align their references with PISA and this reflects a concern in the redefinition of evaluating the quality of teaching by mathematical assumptions. The authors suggest multidisciplinary approaches to educational data analysis and policy advice. |
| Petersburg; Pyhälö e Soini (2016)         | 56       | -    | 137      | 7,5         | The study addresses the national curriculum reform in Finland and aims to gain stakeholder perception. In their analyses, the authors argue that the form of implementation has a strong impact on the results obtained.   |
| Floats; Kodde-buitenhuis e Doorman (2019) | 20       | 7    | 51       | 7           | The authors compare the performance of students from pilot schools in the implementation of the Dutch mathematics curriculum reform and students who used the old curriculum. Students from the pilot schools showed more diversity in problem-solving strategies.   |
| Gualberto and Rodrigues (2021)            | -        | -    | 1        | 7           | The authors analyzed the relationship between the degree of curricular autonomy in schools and the performance of students in PISA. No clear evidence of a causal relationship was observed. However, aspects such as gender and socioeconomic inequalities were presented as the most relevant aspects for understanding the students' performance.   |
| Prendergast and Treacy (2017)             | 24       | 22   | 53       | 7           | The authors aimed to investigate the immediate effects of a curricular approach on Irish students and to explore the opinion of teachers of this new methodology. One of the issues raised was the possibility of understanding the discrepancy between the  |

|  |    |    |     |   |   |
|--|----|----|-----|---|---|
|  |    |    |     |   | intended curriculum and the implemented curriculum, so that they could really draw more realistic conclusions.  |
| So e Kang (2014)                           | 50 | 40 | 116 | 7 | The study discusses the impacts of education reform in South Korea, where a competency-based curriculum for the 21st century has been implemented. Although the author discusses the importance of the competency-based approach, he reinforces the need to care for teacher autonomy and the need for continuing education in order to have an effective curricular reform.                              |
| Konstantinos Kounetas <i>et al.</i> (2023) | 0  | 0  | 0   | 7 | The authors address an educational reform in Greece with a focus on passing Higher Education. Although it is not a curricular reform, the study demonstrates that there are other indicators to evaluate educational policies.  |
| Karakolidis <i>et al.</i> (2021)           | 3  | 2  | 4   | 7 | The study seeks to provide improved approaches to investigate how performance is distributed among subgroups. Evidence is identified that Ireland has made reasonable progress in tackling inequality, but student performance in mathematics is still explained by demographic and socioeconomic characteristics.  |
| Cheung; Keung e Mak (2019)                 | 5  | 4  | 10  | 7 | The study investigates the impact of curriculum reform in Hong Kong by comparing the perceptions of different stakeholders (school principals, teachers, and students). Evidence of positive perceptions was observed between the parties.  |
| Tobin, Nugroho A. Lietz (2016)             | 10 | 7  | 29  | 7 | The authors sought to synthesize the results of two systematic reviews that examined evidence of the link between large-scale evaluation and education policies in economically and Asia-Pacific countries. The study cannot delve into the particularities of the reforms.   |
| With Gopinathan (2016)                     | 95 | 82 | 187 | 7 | The article offers an alternative explanation for Singapore's educational success and questions the use of PISA as the main indicator of educational performance of a school system, problematizing that skills have an economic focus. The authors attribute the country's success precisely to the fact that it decided not to fully align its curriculum with PISA as the wave of other countries did. |
| Baite A Hotbain (2014)                     | 2  | 3  | 13  | 7 | The study addresses an educational reform focused on underperforming schools. It helps to understand the specific approaches that achieve better results. Although the authors found evidence of improvement in performance, they question the cause-and-effect relationship of educational reform, raising the need for studies regarding the fidelity of implementation.                                |
| Salazar-Morales (2017)                     | 5  | 6  | 16  | 7 | The author investigates the educational turnaround of Peru's results after 43 years of failure. The study also reflects on the focus on cases of failure and suggests deepening the arenas of successful cases of implemented policies.   |
| The Given (2014)                           | 2  | 2  | 8   | 7 | The article evaluates the impacts on the Polish reform in which there was an increase of one year for the completion of high school.  |
| Choi A. Jereem (2016)                      | 17 | 17 | 52  | 7 | The authors investigate, through PISA data, when students in the Spanish education system are disadvantaged when compared to other education systems. Evidence is observed that the gap occurs long before high school, without the possibility of specifying the exact moment. Thus, the authors warn against simplistic analyses of PISA rankings.  |

|                                 |    |    |    |     |  |
|---------------------------------|----|----|----|-----|--|
| Pham (2022)                     | 1  | 1  | 2  | 7   | The study examined the effects produced by the renovation of the Innovation Zone in Memphis, Tennessee. The results highlight peer collaboration, a positive learning environment and the recruitment of effective educators as important practices that are likely to facilitate better school performance as part of future school reform plans.   |
| Van de Werfhorst (2018)         | 22 | 20 | 43 | 6,5 | The study addresses inclusive policies with a focus on reducing educational inequalities in different parts of the world. Evidence was observed that reforms towards comprehensive education reduced inequalities between students from different social backgrounds, but reduced the average performance of students.   |
| Machin; McNally e Wyness (2013) | 19 | 15 | 47 | 6,5 | The study compares the education system of England, Scotland, Wales and Northern Ireland after the political devolution of the United Kingdom. The analysis becomes differentiated because it allows the comparison of different educational reforms with a very similar regional context, allowing to minimize factors that influence performance. There is a complexity in evaluating educational policies in terms of cost-benefit given the difficulty in totaling expenditures. However, evidence was found that increased resources can improve outcomes and more targeted spending can benefit students from disadvantaged backgrounds. |
| Dahmann (2017)                  | 22 | 19 | 74 | 6,5 | The author investigated the effects of instructional time in high school in Germany. The results suggest that increasing instructional time benefits male students by exacerbating gender differences.   |
| Razo (2018)                     | 7  | -  | 44 | 6,5 | With the objective of applying the CLASS method to evaluate the curricular implementation in Mexico after 9 years, the study presents evidence that although there is a pattern among teachers in teaching, it is still not possible to affirm that the proposed curriculum is the executed curriculum.  |
| Nakayasu (2016)                 | 7  | -  | 40 | 6,5 | The authors proposed to analyze the curricular reform with a focus on the competencies of the twenty-first century after the country declined in the PISA ranking.   |
| Carlson e Lavertu (2018)        | 21 | 18 | 51 | 6,5 | This paper estimates the effect of Ohio's recovery efforts on student achievement and school administration. A financial incentive policy in low-performing schools is evaluated. Although it has shown positive results, the authors warn of the need for future analyses to identify long-term effects and possible turnarounds.   |
| Ferraro and Pöder (2018)        | 8  | 6  | 9  | 6,5 | The authors propose to analyze through PISA performance indicators, Italian educational reforms, since this system presents distinctive results characterized by high equity and low efficiency scores. In his studies, he observes evidence that schools with more curricular and evaluative autonomy tend to have a better overall performance. However, they stand out for the limitations due to the fact that the evaluation addresses a single country.  |
| Bower (2013)                    | 11 | 9  | 75 | 6,5 | The study analyzes several school reforms and social reforms, making a relationship of how the performance of students was impacted, especially the most disadvantaged. The author addresses that most of the factors that interfere in school performance happen outside school. Very short-term school reforms may have greater impacts on performance, but in the long term social reforms have greater impacts. He does not advocate the exclusion of one or the other type of reform, but the use of both in a complementary way.   |
| Bonilla A D (2018)              | 6  | 7  | 35 | 6,5 | The study sought to estimate the impacts of a policy focused on low-performing schools. Evidence was observed that Kentucky obtained more expressive results by combining other methodologies in the implementation of the reform.   |
| Gorlitz and Gravert (2016)      | 7  | 7  | 21 | 6,5 | The authors analyzed a reform in which the degree of difficulty in obtaining a high school academic diploma increased. Evidence was found that dropout rates increased without causing performance increases.  |
| Macqueen <i>et al.</i> (2018)   | 23 | 23 | 62 | 6,5 | The study contributes to a broader discussion about standardized tests to evaluate educational reforms. Addressing the use of the standard language (in this case, English), it questions the effectiveness of this evaluation for subgroups, in the study in question, indigenous peoples.  |
| Burks e Hochbein (2013)         | 5  | 7  | 24 | 6,5 | It examined the impacts of implementing a reform focusing on schools with persistent underperformance. Short-term studies demonstrate improvement in performance.  |

|                            |    |   |    |     |  |
|----------------------------|----|---|----|-----|--|
| Khanvenson e Carnoy (2016) | 17 | 9 | 35 | 6,5 | The authors sought to assess the unintended and intended academic effects associated with post-Soviet educational reforms. Evidence was observed that the bilingual approach demonstrated evolution in the performance in PISA indicators. |
|----------------------------|----|---|----|-----|--|

Source: prepared by the author.  
 Subtitles: WoS – Web of Science

## THE PROCESS OF IMPLEMENTING AN EDUCATIONAL REFORM

The implementation of an education reform is a multifaceted process that depends on diverse actors, socio-cultural and economic contexts that reflect specific challenges of each country and/or region. Changes can involve everything from changing curricula to renewing assessment policies and although there are different points of view and different approaches, most agree on the importance of the active participation of those involved in the process, such as teachers, specialists and other education agents. Pietarinen, Pyhältö and Soini (2016), for example, highlight how the top-down and bottom-up approach to Finland's reform was associated with its success, as it incorporated different interest groups into the experience. Prendergast and Treacy (2017), on the other hand, address that a reform should reflect the beliefs and concerns of teachers, that is, promote a bottom-up approach, since these actors are the ones who will put the guidelines into practice. The authors also emphasize the need for the professional development of teachers as a primary factor for the success of a reform.

So and Kang (2014) complement these points of view with the experience of Korea, emphasizing that although curricular changes, assessment and models of more autonomy are extremely important, for the reforms to reflect practical changes they must incorporate changes in teaching styles, assessment instruments and even in school culture.

Although most authors recognize the importance of educational reforms, there is a consensus that demographic and socioeconomic aspects are still the main factors that influence student performance, reinforcing the interference of sociocultural and economic aspects in the specific educational context of each country. In other words, the success of an educational reform is directly related to external conditions in the school environment and is not always associated with an increase in performance.

## THE EVALUATION OF EDUCATIONAL POLICIES

As in the implementation process, the evaluation of educational policies must consider social trends and changes in the country's context, analyzing not only immediate results, but also long-term impacts (Aloisi and Tymms, 2017). Thus, the complexity of determining the (un)success of a policy is clear. Effective implementation, but without changes in performance in large-scale assessments, can be characterized as a successful reform for some and unsuccessful for other types of approach. For example, Baete and Hochbein (2014) examined the effects of a reform taking into account criteria such as performance, while Cheung, Keung and Mak (2019) used the perception of stakeholders as a reliable





criterion to measure the effectiveness of an educational reform. In the first case, the authors express concern about whether the performance actually reflects the change or whether there are other factors external to the change that may be the cause of a differentiated performance. The authors of the second example, on the other hand, highlight the significantly different perceptions of the same dimension.

In short, the evaluation process should ideally reflect the objectives envisaged in a change, but in many cases, these effects are not easily disaggregated from factors other than reform. Although it is not a simple task, it is common for studies that relate parameters such as average performance in large-scale international and national evaluations to infer about an educational policy, but highlighting the need to adopt a broad and integrated approach, considering factors such as equity and implementation time.

Also noteworthy are the studies by Tobin, Nugroho and Lietz (2016), who analyzed how evaluations are used by decision-makers and observed that their use is more frequent in the phases of agenda definition, implementation, monitoring and evaluation of a policy, and less frequent in policy design. The authors also warn of common problems in education systems regarding evaluation, such as financial constraints for high-quality evaluation or in a continuous process, low technical capacity in the interpretation and dissemination of results, among others.

## THE IMPACT OF EDUCATIONAL POLICIES ON THE QUALITY OF TEACHING

In general, studies suggest that the impacts of educational reforms on the quality of teaching can be complex and variable. Some studies indicate modest or varied results depending on contextual factors and the implementation process, while a few have been able to measure positive effects. Thus, it is relevant to reinforce a more comprehensive and contextualized reading in impact assessments.

Due to the complexity of education systems and the variety of factors that influence the teaching and learning process, making it difficult to accurately measure the effects caused by education policies, assessing the impact of education reforms becomes a challenging task. (Aloisi and Tymms, 2017; Gualberto and Rodrigues, 2021) However, many studies use rigorous evaluation methods, including quantitative and qualitative analyses, and strengthen the importance of understanding how these policies took place and whether they are promoting the planned improvements.

In summary, authors such as Aloisi and Tymms (2017) and Kounetas *et al* (2023) observed that there does not seem to be a significant effect of curriculum reforms on the performance of large-scale international assessments. However, Karakolidis *et al* (2021) observed that the variation between the performances of different groups in Ireland reduced, which can be considered evidence of a more equitable education system even while maintaining its averages almost constant. Bonilla and Dee (2018), when investigating the effects of school reforms in Kentucky, found that some schools experienced improvements, but considerably different between schools.



Therefore, the studies found mixed results and use different approaches to discuss the impacts of policies. Thus, it is important in a reform evaluation to understand the context of the country or region in which it is inserted and to be clear about what is intended to be measured, that is, what objective is intended to be evaluated. Highlighting this stage as one of the instruments for decision-making, but not the only factor to be considered.

It is relevant to mention that the fact that the studies do not find highly expressive results of impacts on the quality of teaching arising from educational reforms does not mean that they are not necessary, but rather that the expectations of the evaluators are aligned with this return in small and incremental results and not large and frequent ones. (Aloisi and Tymms, 2017)

## **FINAL CONSIDERATIONS**

According to Machin, McNally and Wyness (2013), comparing educational reforms in terms of effects on educational performance is less complex than analyzing them in terms of cost-benefit, since accurately measuring the amounts spent on these policies is an almost impossible task. It can be said that evaluating an educational policy in terms of quality is even more complex. Although a significant number of studies refer the quality of education to performance in large-scale standardized assessments, especially international ones, many warn of the need to understand the extent to which these results effectively reflect the quality of education, the implementation of the reform itself, and even question the impacts on minority populations.

In their study, Aloisi and Tymms (2017) present studies that show that the results of the Program for International Student Assessment (PISA) have influenced the construction of national curricula with the aim of aligning their knowledge with the content of the test. Although the authors mention that the Organization for Economic Cooperation and Development (OECD), responsible for the application and dissemination of the results, states that the Organisation does not have the objective of evaluating countries' curricula, but rather "life skills", they reiterate that the Organization praises countries that align their curriculum references with "21st century skills". Therefore, it is questioned to what extent the results reflect the quality of the education service offered or the alignment of some countries with this evaluation. Under no circumstances is it intended to discredit the curricular reforms with the intention of alignment, nor even to criticize the use of large-scale evaluation in the monitoring of educational policies. However, as proposed in the studies by Aloisi and Tymms (2017), Baete G and Houchbein (2014), Prendergast and Treacy (2017), Macqueen et al.. (2018), among others, these evaluations should be triangulated with other methods, indicators, and different times to understand more carefully the results of a change in an education system, especially in more disadvantaged populations.



Although much questioned, the literature is quite solid in relating teaching quality with performance, but in addition, it is highlighted that its effectiveness is not limited to the evolution of the general average indexes. It is a consensus that when evaluating the quality of education, they analyzed the distribution of performance in relation to socioeconomic levels, gender, among other factors addressed, in order to measure the equity of the educational system. Ironically, studies such as those by Ferraro and Pôde (2018) and Van der Werforst (2018) have obtained evidence that systems that demonstrate greater educational equity have lower average performances. Therefore, it is believed that when evaluating the impacts of educational policies on the quality of education, the balance between these two factors should be considered: average performance of the system and equitable distribution.

## LIMITATIONS AND FUTURE RESEARCH

When analyzing the scope of the studies in terms of the authors' countries of origin, there is a significant geographic density in developed countries, especially in the United States. About 27% of the selected studies have at least one American author. Although the articles cover several regions, not restricted to the author's country and the academic relevance of the authors' countries is recognized, this research sought to analyze a systemic view of the evaluation of educational reforms, when this regional pattern was perceived, it is believed that there is a limitation of the research regarding heterogeneity. A possible consequence of this limitation would be the repetition of studies referring to the same educational reforms and the evaluation of teaching being restricted to similar lines of study. Thus, a possible future analysis would be to compare whether there are divergent lines of study in the evaluation of educational policies from those presented in this research when only authors from developing and/or underdeveloped countries are used.

Another limitation observed is the broad search for the evaluation of educational policies, which generated numerous articles, requiring a very high cut-off score due to the limitation of time to analyze qualified studies in detail. Thus, for future research, it is suggested to analyze unique aspects, or just impact, equity or another indicator.

In addition, it is suggested to research methods or processes that investigated the fidelity of the implementation of educational policies as mentioned by Baete G and Houchbein (2014) so that the causal relationship with the proposed indicators can be investigated.



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