MULTIDISCIPLINARY SCIENCE JOURNAL

RESEARCH ARTICLE
Published Online: October 30, 2025
https://doi.org/10.31893/multiscience.2026313

Education, presidential proposals, and pandemic: Analysis of the Colombian case (2018 and 2022)

Pedro Piedrahita-Bustamante[a] | **Carlos Hernán González Parias**[a]

[a]Tecnológico de Antioquia, Colombia.

Abstract The article analyzes changes in the educational proposals of Gustavo Petro and Sergio Fajardo, candidates for the presidency of Colombia, between 2018 and 2022, with a focus on the impact of the COVID-19 pandemic on their educational platforms. The objective is to examine how their 2022 programs adapted to the academic challenges exacerbated by the pandemic compared with their 2018 proposals. The study applies a qualitative and comparative design, using process tracing to identify causal links between the pandemic and changes in education policy proposals. Two inferential tests, the hoop test and the smoking gun test, were used to assess the extent of the pandemic's influence. The results show that both candidates incorporated diagnoses of educational problems related to the pandemic and, in Petro's case, introduced new measures such as expanding connectivity and extending the school day. While certain proposals, such as technological innovation and infrastructure improvements, appeared in both election periods, other measures reflected adjustments to postpandemic conditions. The analysis confirmed that the pandemic acted as a catalyst for programmatic changes, particularly in the areas of technology, connectivity, ICT use, and distance learning, while revealing continuity in addressing long-standing structural challenges in Colombian education.

Keywords: education, pandemic, learning, public policies, Colombia

1. Introduction

This study examines the evolution of educational proposals from the Colombian presidential candidates Gustavo Petro and Sergio Fajardo between the 2018 and 2022 elections. This highlights the COVID-19 pandemic as a key factor behind these programmatic changes. The closure of schools, colleges, and universities caused by the pandemic made technology the primary vehicle for education, leading to virtual learning becoming the dominant approach. This situation intensified political debates over structural issues such as technological gaps, connectivity barriers, educational delays, and insufficient training in information and communication technologies (ICTs).

The focus is on Petro and Fajardo, who ran in both the prepandemic (2018) and postpandemic (2022) elections. Choosing these candidates allows the study to control for individual variables and better attribute changes directly to the pandemic's impact (Sartori, 2011). The main research question concerns how the health crisis affected each candidate's educational platform.

A review of the academic literature reveals a gap in the analysis of postpandemic education within electoral competition. Latin American political science has not extensively explored the link between education and politics, unlike its focus on topics such as political parties, democracy, and populism (Basabe-Serrano & Huertas, 2018). Scholarly work on education in this field has focused mostly on its scope, analyzing curricula, teaching methods, and research trends in political science programmes (Almond, 1999; Altman, 2005; Bejarano & Wills, 2005; Duque-Daza, 2013, 2014; Freidenberg, 2017; Bentancur & Mancebo, 2017; Obando Tobón & Guzmán-Sossa, 2020; Barrientos del Monte, 2020; Zamora-Aviles et al., 2021; Barreda & Sotillos, 2024).

Studies on the pandemic's impact on Latin American education generally focus on three areas. First, they look at the effects and challenges of the health crisis, such as the shift to remote learning and the widening of existing inequalities (Ruiz, 2020; ECLAC, 2020; Martínez-Garcés & Garcés-Fuenmayor, 2020; Hurtado, 2020; Arias et al., 2021). Second, they analyze distance education, especially its pedagogical challenges, implementation issues, and learning results during emergencies (Arriagada, 2020; Mendoza, 2020; Flores et al., 2021; Meo & Dabenigno, 2021; Salazar-Mata et al., 2022). Third, they examine the educational policies and reforms introduced during the crisis, highlighting tensions between urgent measures and long-term structural changes (Bonnéry, 2021; Lugo et al., 2020; Nogueira et al., 2021).

However, none of these works explore how these educational issues and policy changes were addressed within electoral discourse. This article fills that gap. Key concepts such as education, training, technological gaps, and distance learning are defined and delimited through the critical perspectives of Freire (1990, 2004) and Giroux (1998, 2004). The article then outlines

 Received: June 11, 2025 | Accepted: September 26, 2025

the analytical framework used to evaluate the candidates' government programs, describes the methodology, presents comparative findings, and concludes with the main results and suggestions for future research in political science.

2. State of the art

A review of the literature on the objects of study was carried out in databases such as Google Scholar, Scopus, Science Direct, and Scielo, which are based on the following search equation: "Education + pandemic + government." After an initial search, the equation was delimited with the keyword "Latin America." The research is grouped into three main streams: first, the effects and challenges generated by the pandemic for education (the one with the most significant production); second, distance education, which follows the perspective of the challenges; and third, the analysis of educational policies and their reforms during the health crisis.

On the front line, Ruiz (2020) presented an overview of the effects of the right to education globally and discussed the consequences of the use of digital platforms for the exercise of the right to education, criticizing the urgent measures of some governments, which, without sufficient empirical evidence, decided to close educational centers. The author concluded that the most significant risk of this type of measure was that the health, social, psychological, and technological emergency conditions were not analyzed (p. 57). For his part, Hurtado (2020) identified the challenges of schools in technological and methodological terms, highlighting the difficulties in the teaching-learning process (p. 185). In this sense, Katz et al. (2020) recognized that digitalization was influential in reducing educational gaps. However, in Latin America, governments should improve aspects such as mobile broadband, mobile operators, video streaming, platform development, and training in vulnerable sectors.

Rodríguez-Alarcona et al. (2022) analyzed the effects that university students in Latin America had when adapting to virtuality, revealing dissatisfaction for the majority and poor adaptation and a low academic average in the face of an accelerated pace of classes. Abrantes (2021) analyzed this situation in basic education in Portugal and reported that online teaching during confinement reached most students but left out the most vulnerable children and young people in society. Bonal & González (2021) examined challenges in schools in Catalonia on the basis of an online survey of more than 35,000 families. The authors highlight inequality and learning problems in the vulnerable population.

Similar results with samples in other countries and educational levels were presented by Kuric et al. (2021) and Jacovkis & Tarabini (2021), the latter showing that the pandemic reinforced old inequalities, highlighting the technological gaps concerning the most vulnerable. In this context, the ECLAC (2020) recognized that the actions implemented by governments in the region guaranteed education in the short term but generated inequity and exclusion that distanced the fulfillment of the 2030 Agenda and Sustainable Development Goal four on inclusive, equitable, and quality education. Reimers (2021) noted that the pandemic marked the beginning of the fifth wave of educational transformation in the region, marked by widening social, economic, and political gaps.

Other researchers have examined the effects of the pandemic on teachers. Gluz et al. (2022) studied the working conditions of secondary school teachers in Buenos Aires (Argentina) marked by gender, technological, and health inequalities and increased workload in the context of asymmetries with female teachers, who, in addition to education, had to assume care tasks in their families. Ossa et al. (2023) reviewed scales of depression and stress and subjective mental workload in teaching and nonteaching employees in Chile and reported the mental consequences, depression, and anxiety of education employees. Similar conclusions were reached by Meo & Dabenigno (2021) in Argentina, Flores et al. (2021) in Portugal, and Vera-Noriega et al. (2023) in Mexico.

Arellano-Esparza & Ortiz-Espinoza (2022), Bedoya et al. (2021), and Benites (2021) analyzed the effects on higher education in terms of decreased enrollment in universities and the associated impact on inequality. Similar work was performed by Arias et al. (2021), who systematically studied the crises of recent decades in Latin America and their effects on the behavior of higher education enrollment.

The second line of research focuses on distance education; Mendoza (2020) highlights the technological renovation of educational systems in Latin America, particularly in Mexico, although he argues that this cannot replace face-to-face education. Arriagada (2020) performs a similar analysis but with the Chilean case, stating that there is an opportunity to reform educational policies and pedagogical models on the basis of training in technology and the incorporation of collaborative and project-based learning practices that encourage cooperative work and flexibility in learning. Dussel et al. (2022) suggested that after the pandemic and the ICT-mediated educational process, the return to face-to-face education should be marked by the interrelation of social forms and the State in the offer of an education that maintains the learning of virtuality for the deployment of collaborative and shared resources to build a new pedagogical field.

The third line of studies is divided into two groups: those that analyze the public policies adopted by governments and those that review the effects of these policies. The first group includes the research of Bonnéry (2021), Lugo et al. (2020), and Nogueira et al. (2021). Bonnéry (2021) showed how, in France, government measures were not an exception but generated structural changes such as public withdrawal from education due to distance. Lugo et al. (2020) observed the technological policies implemented in Latin America between 2010 and 2018 as a basis for decision making in the implementation of ICT during the pandemic; they highlighted the challenges of the region in terms of connectivity, teacher training in technological

skills and evaluation and highlighted the need for a "comprehensive approach that addresses social justice and is based on the democratization of education from a perspective of rights in access to ICT and knowledge" (Lugo et al., 2020, p. 34). Finally, Nogueira et al. (2021) analyze the policies implemented in Brazil, Argentina, and Chile in terms of social containment, the economy, health, and education; they conclude that these policies prioritized specific groups and generated exclusionary practices and inequity.

The literature review emphasized the challenges, gaps, and educational inequalities generated by the pandemic for students, their families, and teachers. The results are similar in Latin America and Europe. However, in this survey, no studies were found on changes in education after the pandemic in the context of electoral campaigns or political contests. In this sense, this research is justified. It is considered novel in that it allows us to broaden the discussion and, from a methodological perspective of political science, to compare, at the level of political–electoral competition expressed in government programs, the adjustments and trends in education programmatic bets after the health crisis. This type of research could constitute a new line of study in political science beyond those evidenced here, collected and analyzed.

3. Theoretical perspective and conceptual definition

This study's theoretical perspective is based on Freire's (1990, 2004) and Giroux's (1998) works, which conceive education as a cultural construction for ethical and political development outside of mechanisms, methodologies, and techniques. This view understands education and its reforms beyond dispositions that lead to social domination. This work aims to understand education as a reflexive process for social change, which was affected by the COVID-19 pandemic initiated in 2020.

Owing to these effects (as revealed in the literature review), it is expected that government programs in contexts such as this one should propose diagnoses on the effects and challenges of the pandemic on education. Therefore, such presidential programs would also be expected to contain a series of policy proposals to overcome, address, and correct the challenges created around the education system at different levels. Therefore, this research proposes the following hypothesis:

H_1: Changes in the presidential programs of candidates in Colombia related to the transformation of the educational system due to the pandemic.

However, education problems in Colombia were already present even before the pandemic, since they reflect structural problems several decades ago. However, COVID-19 was an accelerator that caused these problems to be addressed more in public opinion and citizen and political debates, as they emerged more abruptly and explicitly. This means that the presidential programs could have already had proposals to solve these problems already present in society. For that reason, the second hypothesis put forward in the research is as follows:

H_2: The candidates already contemplated in their presidential programs the educational problems that the pandemic exacerbated.

To operationalize these hypotheses, eight concepts were defined following the theoretical perspective: education, training, teaching, technology and connectivity, educational backwardness, use of ICTs, flexibility, and distance education. Education is understood as a process of social action that transcends the school environment and liberates the individual from forms of oppression (Freire, 2009). Conversely, training projects ideas for individual and social liberation (Giroux, 1998; Habermas, 2009; Villamizar, 2020).

Teaching is a way of modeling habitus through the introspection of socially transmitted elements. Nevertheless, it is also the commitment of educators to generate spaces for critical reflection on social projects. (Freire, 1990, p. 17). Technology and connectivity (in education) are the social devices of exchange and communication of pedagogical processes that help to process and transmit information and produce knowledge through the redefinition of the environment and the very meaning of pedagogy (Giroux, 1996, p. 3).

Educational lags are factors that produce systemic inequality and make permanence and access to education impossible (Giroux et al., 2020). The uses of ICT (information and communication technologies) are media that shape experiences through the assimilation of social events through new narratives (Giroux, 1996). Flexibility is an attribute of the educational systems that apply ICTs to provide continuity to formative and educational processes; it generates a democratic opening of the learning scenarios of social realities (Salinas, 1998). Finally, distance education is an antagonistic model to traditional education marked by the absence of physical spaces. Therefore, it is characterized by the absence of students, work outside the classroom, the use of resources associated with ICT, etc. (Garcia, 2001).

4. Materials and Methods

To analyze the changes in the educational proposals of Gustavo Petro and Sergio Fajardo after the pandemic, a qualitative methodology guided by comparative politics was used (Landman, 2011; Sartori, 2011). A scope of causality was proposed on the basis of studying how the pandemic could have influenced both candidates' diagnoses and educational proposals.

The research method used was process tracing. (Collier, 2011; Falleti & Mahoney, 2016; Bril-Mascarenhas et al., 2017). Complementary use was made of inductive and deductive logic (Bril-Mascarenhas et al., 2017), making empirical observations and testing the theory via tests, as explained below. (Falleti & Mahoney, 2016).

The primary source of information for the empirical evidence was the candidates' government programs (Fajardo programmatic team, 2018, 2022; Petro programmatic team, 2018, 2022). Fajardo's 2018 government program was a summary because the original document was not found, as it is no longer available on his website. In addition, a state of the art was constructed to understand the problem of education in the framework of the pandemic; then, the categories were conceptualized to delimit their understanding and observation; then, the government programs were read, and two documents were constructed with text fragments associated with the main categories; finally, they were analyzed in the qualitative atlas. Ti software, where codes were associated with the categories for the systematization of the data (see Table 1).

Coding in the atlas. Ti structured the process-tracing stages. We applied deductive categories—technological gaps, distance education, flexibility, and ICT use—and complementary inductive codes for proposals: connectivity, extended workdays, permanence, infrastructure, innovation, and technology. The unit of analysis was the programmatic sentence or paragraph. When a segment addressed more than one category, we applied double coding and documented decisions in analytic memos. For analysis, we normalized citation frequencies by document length and estimated co-occurrence matrices to identify associations among categories. These inputs yielded comparable analytic snapshots for each candidate in 2018 and 2022 and provided traceable evidence for the hoop jump and smoking-gun tests.

The analytical procedure was as follows: First, when process tracing was applied, the educational proposals of both candidates in the 2018 and 2022 elections were described. Second, causal inference was made about the changes made in these programs due to the pandemic. As Collier (2011) mentioned, the descriptive component of process tracing begins by "taking snapshots" of a given moment. For this purpose, word clouds were used to describe the recurrent axes of the candidates' proposals. The programs were then inductively coded and grouped for concurrence analysis.

Second, two empirical tests, known as the hoop jump test and the smoking gun test, were tested for causal inference of process tracing. According to Collier (2011), the first consists of the hypothesis having to "jump through hoops" to be considered relevant; passing it does not imply its verification, and failing it does eliminate or considerably weaken it (Falleti & Mahoney, 2016). Thus, the test approach was as follows: the 2022 presidential programs should have a diagnosis of education in Colombia after the pandemic. The presence of the diagnosis did not mean that the candidates had changed their proposals. Nevertheless, its absence could mean that the pandemic did not influence the rethinking of programmatic proposals.

Finally, there is the second test, which Collier (2011) defined as sufficient to accept the causal inference; if it passes, it strongly supports the hypothesis and weakens the others but does not eliminate them (Falleti & Mahoney, 2016). Therefore, the approach of the test was that the 2022 programs should have proposals related to the transformation of the Colombian educational system due to the pandemic.

5. Results and Discussion

After the sources were processed and coded, the data collected were described. Following Collier (2011), thefirst "snapshot" was the analysis of word clouds of the four government programs, identifying the frequency of words (Cipollone, 2022). The second part describes the results from the category-code figures.

5.1. Gustavo Petro's presidential programs (2018 and 2022)

Figure 1 shows the main educational strands of Petro's program in 2018. The ten recurring words are education (25), training (9), Colombia (8), system (7), quality (6),development (6), integral (6), youth (6), girls (6), and boys (6). Words that may be associated with the problems generated by the pandemic, such as networks (3), technology (2), and technology (3), have minor recurrence.

Figure 2 shows the results of the 2022 program; the recurring words were education (29), system (20), access (14), national (14), care (11), childhood (10), conditions (9),educational (9), girls (9) and boys (9). Compared with 2018, the words Education, System, Girls, and Boys maintained similar behavior. The ten patients with the highest recurrences are associated with access and conditions. Words related to the effects of the pandemic included Innovation (4), Extended (4), Inequality (2), Connectivity (6), Gaps (3), Digital (2), Exclusion (3), and Permanence (5).

Figure 3 compares the groups of codes that were associated with the analysis. Below is the frequency of citations in the code group; below is the percentage of that frequency relative to the column; and next to that is the percentage relative to the row. The rate of citations related to the categories increased in the 2022 program in 2018 (see rows). Reviewing the categories of technology gaps, distance education, flexibility, and ICT use within each program, it is evident that they increased in 2022 compared with 2018 (see columns). The same is not the case for education, teaching, training, and educational lag.

Figure 1 Word cloud educational proposal Petro 2018.

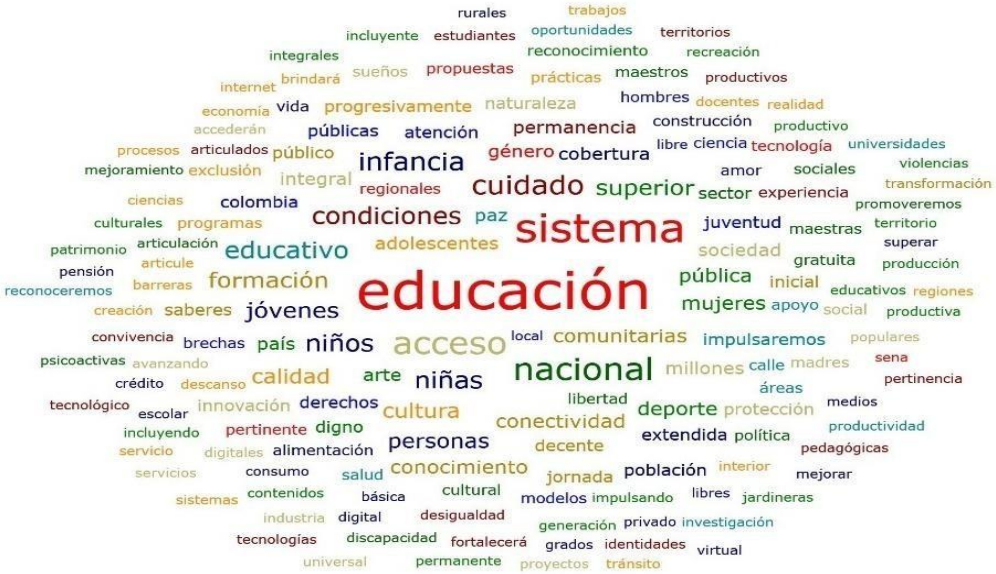

Figure 2 Word cloud educational proposal Petro 2022.

Category	2018 Gustavo Petro (21)		%	2022 Gustavo Petro (28)		%	Totals	
Technology gaps	8	8,51%	33,33%	16	10,81%	66,67%	24	9,92%
Education	21	22,34%	42,86%	28	18,92%	57,14%	49	20,25%
Distance education	6	6,38%	33,33%	12	8,11%	66,67%	18	7,44%
Teaching	10	10,64%	40,00%	15	10,14%	60,00%	25	10,33%
Flexibility	10	10,64%	37,04%	17	11,49%	62,96%	27	11,16%
Training	13	13,83%	40,63%	19	12,84%	59,38%	32	13,22%
Educational lags	18	19,15%	43,90%	23	15,54%	56,10%	41	16,94%
Use of ICT	8	8,51%	30,77%	18	12,16%	69,23%	26	10,74%
Totals	94	100,00%	38,84%	148	100,00%	61,16%	242	100,00%

Figure 3 Categories and codes - Government Programs, Gustavo Petro, 2018 and 2022.

First, in the word clouds, there was a change in frequency between 2018 and 2022. In the 2022 program, words such as Innovation, Extended, Inequality, Connectivity, Gaps, Digital, Exclusion, and Permanence appear, related to the problems exacerbated by the pandemic, as evidenced in the literature review. Second, as shown in Figure 3, the number of citations for the categories related to difficulties caused by the pandemic increased in 2022 compared with 2018. The exception was educational lag, which in 2018 accounted for 19.15% of the citations in the text, whereas in 2022, it accounted for 15.54%.

5.2. Sergio Fajardo's presidential programs (2018 and 2022)

Figure 4 shows the recurring words: Education (40), Science (17), Technology (16), Innovation (15), Culture (13), Country (11), Colombia (9), Training (9), Plan (9), andGovernment (8). Some refer to categories related to the educational problems of the pandemic. In addition, associated words such as Flexible, Technological, and Connectivity appear. This suggests thatthe Fajardo 2018 program was already proposing topics related to educational problems that were then augmented by the pandemic.

Figure 4 Word Cloud Government Program, Sergio Fajardo 2018.

In 2022, the recurring words (see Figure 5) were Education (32), Training(24), Digital (16), Country (16), Youth (10), Quality (8), Educational (8), Needs (8), Programs (8), andScience (8). In 2018, words such as education, training, country, and science maintainedsimilar behavior. Among the ten repeated words, one related to the digital category and the others congruent with the effects of the pandemic were internet, Gaps, Pandemic, Technologies, Technological, and Barriers.

Figure 5 Word Cloud Government Program, Sergio Fajardo 2022.

Figure 6 shows that citations related to the categories increased in percentage in 2022, except for education, which remained the same (see rows). The citations of categories of technology gaps, education, and educational lags increased in 2022 compared with 2018 (see columns). The same is not the case for distance education, teaching, flexibility, training,and ICT use.

Category	2018 Sergio Fajardo (26)		%	2022 Sergio Fajardo (46)		%	Totals	
Technology gaps	12	9,92%	40,00%	18	10,47%	60,00%	30	10,24%
Education	26	21,49%	38,24%	42	24,42%	61,76%	68	23,21%
Distance education	13	10,74%	43,33%	17	9,88%	56,67%	30	10,24%
Teaching	9	7,44%	50,00%	9	5,23%	50,00%	18	6,14%
Flexibility	15	12,40%	41,67%	21	12,21%	58,33%	36	12,29%
Training	16	13,22%	44,44%	20	11,63%	55,56%	36	12,29%
Educational lags	18	14,88%	38,30%	29	16,86%	61,70%	47	16,04%
Use of ICT	12	9,92%	42,86%	16	9,30%	57,14%	28	9,56%
Totals	121	100,00%	41,30%	172	100,00%	58,70%	293	100,00%

Figure 6 Categories and codes - Government Programs, Sergio Fajardo, 2018 and 2022.

From this descriptive part, we found a change in the word clouds concerning the frequencies ofwords used in 2018 and 2022. In the 2022 program, words related to pandemic problems, such as the internet, Gaps, Pandemic, Technologies, Technological, and Barriers, were highlighted. Second, Figure 6 shows that citations related to pandemic issues did not increase in 2022; although technological gaps and educational lags increased, distance education, flexibility, and ICT use did not.

Up to this point, the data do not indicate changes in educational proposals due to the pandemic; they are only "snapshots" of two different moments. As mentioned above, the problems that the pandemic brought to education were latent in society. For that reason, these problems were noted in some programs, and several quotations were found in the code groups ofthe categories proposed for the research. The two causal inference tests are then applied to establish whether the pandemic caused changes in the candidates' educational proposals.

5.3. Hoop jumping test: diagnostics for pandemics and education

In the Petro 2022 program, the proposals in education were based on a diagnosis of the effects of the pandemic, as described in subchapter 3.1.2. "Children and adolescents in extended day for the love of knowledge, nature and peace complete secondary education". "We will create the conditions to overcome the negative impacts of the pandemic on the coverage, access, permanence, quality, backwardness and relevance of the educational system, especially in rural and popular urban areas" (Petro's programmatic team, 2022, p. 30). With this, H1 passes the test. This phenomenon continues to be considered in the research, as it shows that in Petro's program, the pandemic generated problems in education coverage and access. According to Collier (2011), passing this test yields a criterion of necessity, but not of sufficiency, about the hypothesis.

The Fajardo 2022 program also contains a diagnosis of the pandemic in Chapter 1, "Education and Opportunity: Youth at the Center":

Every crisis generates change. We will turn the educational turmoil left by the pandemic into an opportunity to recover the losses generated and transform our educational system from early childhood to university. We cannot continue the same; we will build something better. At the end of my government, the losses in education caused by the pandemic will have recovered. (Fajardo's programmatic team, 2022, p. 6).

In this case, H1 also passes the hoop test, as it shows that the program established that the pandemic generated educational losses, so its proposals were based on transforming the educational system.

The test is passed in both cases because there is sufficient evidence, since the candidates included in their proposals diagnose the effects that the pandemic caused in the Colombian educational system. Therefore, H1 is confirmed, and H2 is weakened without eliminating or excluding its relevance in the analysis (Collier, 2011; Falleti & Mahoney, 2016).

5.4. Smoking gun test: proposals related to pandemic-related transformations of the education system

In this part, the codes were made inductively from the quotations used (the deductive codes were analyzed in the descriptive part). The category codes were analyzed, including connectivity, educational infrastructure, innovation, extended day, permanence, and technology. Figure 7 shows that in 2018, Gustavo Petro did not have quotations related to connectivity or extended school days. In 2022, he proposed a better-connected society with more excellent coverage (he even proposed obtaining a satellite) and improved fiber optics, especially in villages. (Petro programmatic team, 2022). In addition, the creation of digital laboratories was proposed "for the generation of knowledge and learning on the basis of experience" (Equipo programático Petro, 2022). Second, the elements needed to achieve access and permanence in the extended school day and the universalization of connectivity were proposed. (Petro Programmatic Team, 2022).

The Educational Infrastructure Code had four citations in the 2018 program and one in 2022. The proposals on infrastructure were similar in both programs; in 2018, it was proposed to improve educational spaces in terms of physical and safety (Petro programmatic team, 2018), and in 2022, it was proposed to expand and improve educational infrastructure (Petro programmatic team, 2022).

With respect to innovation, two quotes were given in 2018, and three were given in 2022. Those of 2018 refer to two different points: the transformation of the education system through innovation and the use of national cinema as an integral

part of education to seek a more innovative digital society. The 2022 program is different, conceiving the virtual space as a scenario to produce social exchanges such as knowledge. As society is increasingly globalized, innovation in expertise is considered to respond to society's challenges. (Petro Program Team, 2022). It was also planned to promote technological innovation by financing basic and applied research (Petro Program Team, 2022).

Category	2018 Gustavo Petro (21)		%	2022 Gustavo Petro (28)		%	Totals	
Connectivity				5	19,23%	100,00%	5	12,82%
Educational infrastructure	4	30,77%	80,00%	1	3,85%	20,00%	5	12,82%
Innovation	2	15,38%	40,00%	3	11,54%	60,00%	5	12,82%
Extended school day				2	7,69%	100,00%	2	5,13%
Permanence	1	7,69%	20,00%	4	15,38%	80,00%	5	12,82%
Technology	6	46,15%	35,29%	11	42,31%	64,71%	17	43,59%
Totals	13	100,00%	33,33%	26	100,00%	66,67%	39	100,00%

Figure 7 Codes and Categories - Government Programs, Gustavo Petro, 2018 and 2022.

With respect to permanence, there was one appointment in 2018 and four in 2022. In 2018, a program was proposed to ensure permanence in the educational system to eliminate sexual and labor exploitation, consumption of psychoactive substances, and teenage pregnancy (Petro programmatic team, 2018). In 2022, as cited in previous evidence, the pandemic affected the permanence of the educational system. (Petro programmatic team, 2022).

The technology code was the most frequently presented in the appointments (six in 2018 and 11 in 2022). In 2018, it was proposed that technology be provided to the education system and that knowledge be expanded through technology (Petro programmatic team, 2018). In 2022, ICTs would serve to train students, improve population connectivity, and construct a knowledge and information society on the basis of technology, and the National System of Science, Technology, and Innovation (SNSCTI) would stimulate national production. (Petro's programmatic team, 2022).

For the case of Fajardo (see Figure 8), there were no appointments related to permanence or extended school days in either year. In 2018, it was planned to advance school connectivity (Fajardo programmatic team, 2018). In 2022, the same was proposed, but with an emphasis on improving fiber optics and ensuring that all students in public schools have a computer (Fajardo Programmatic Team, 2022). With respect to infrastructure, in 2018, there were two appointments, and in 2022, four. In 2018, proposals on infrastructure consisted of the adequacy and construction of classrooms to reduce the infrastructure deficit (Fajardo programmatic team, 2018). In 2022, that proposal was maintained, and the need to improve infrastructure with technological resources and full internet connectivity was added (Fajardo Program Team, 2022).

Category	2018 Sergio Fajardo (26)		%	2022 Sergio Fajardo (46)		%	Totals	
Connectivity	1	6,25%	12,50%	7	21,21%	87,50%	8	16,33%
Educational infrastructure	2	12,50%	33,33%	4	12,12%	66,67%	6	12,24%
Innovation	7	43,75%	50,00%	7	21,21%	50,00%	14	28,57%
Extended school day							0	0,00%
Permanence							0	0,00%
Technology	6	37,50%	28,57%	15	45,45%	71,43%	21	42,86%
Totals	16	100,00%	32,65%	33	100,00%	67,35%	49	100,00%

Figure 8 Codes and categories - Government programs, Sergio Fajardo, 2018 and 2022.

With respect to innovation, there are exact quotes from both years (in the 2018 word cloud, it was among the most repeated). In 2018, innovation was outlined as a pillar of the country's transformation, together with science and technology (Fajardo Programmatic Team, 2018); it was proposed to finance innovation projects in universities and research centers. (Fajardo programmatic team, 2018). In 2022, Fajardo's program maintained the same perspective. One of the proposals was to create the Agency for the Digital Transformation of Education and the National Laboratory for Educational Innovation to test new learning methodologies (Fajardo programmatic team, 2022).

Finally, the technology category in 2018 had six appointments, and in 2022, it had fifteen. In 2018, it was proposed that the field would be the engine of development through the use of technology and science. One of its bets was to train citizens who value knowledge as a form of development for themselves and society from science and technology (Fajardo programmatic team, 2018). On the other hand, he proposed technological transformation in universities, research centers, and among entrepreneurs.

In 2022, technology, education, and science were also considered vital to Colombia's development. However, it was also presented as follows: use technology as a support to keep children and young people in the education system; invest in the digital public university and thus reduce gaps in coverage and quality; and recover the learning and socioemotional well-being of students through the leadership of teachers supported by digital technologies. (Fajardo Programmatic Team, 2022).

6. Conclusions

First, in the cases of Petro's and Fajardo's programs, there was a diagnosis of the effects of the pandemic on education. In the Petro program of 2022, the pandemic affected coverage, access, permanence, quality, lag, and relevance. For Fajardo, the pandemic generated a crisis in the education system that affected the learning and well-being of students. Therefore, in both cases, H1 took force after passing the hoop test.

Second, in the case of Gustavo Petro, it was evident that in the 2018 program, there were no quotes related to connectivity or the extended workday, whereas in the 2022 program, there were, and these were associated with improving coverage with a satellite and expanding fiber optics. This is evidence that Petro's 2022 program included proposals to solve problems that the pandemic exacerbated. The quotes on connectivity in the 2022 program play a crucial role in virtual space in education, which was not in the 2018 program.

Although H1 passed the smoking gun test, it did not mean that the validity or contribution of H2 was dismissed. For example, infrastructure issues were similar in 2018 and 2022, i.e., the second program did not delve into the problems that the pandemic worsened in these areas. While in the quotes on technology, it was evident that in both elections, Petro and his team associated using technologies to construct a society of knowledge and knowledge.

In the case of Fajardo, the evidence shows that there were no quotes related to permanence or the extended workday in any of the years. On the other hand, the content of innovation is similar in the two electoral processes, so there was no deepening in 2022 regarding the effects of the pandemic. The need to improve connectivity in both programs was mentioned, but in 2022, it was highlighted by the need to enhance fiber optics and provide students with computers.

Compared with that in 2018, technology in the 2022 program was similar. Although both mentioned their importance together with science for the country's development, in the 2022 program, it was proposed that technology would strengthen permanence and virtual education (Digital Public University). The best aspect was that the intention to recover the learning and well-being of students was mentioned since, according to the program, this was lost due to the pandemic.

Regarding the latter, there is empirical evidence that H1 is correct in the case of the Fajardo program. That is, proposals on the problems in education that the pandemic has worsened were included. Although, as in the case of Petro, it was evident that new issues were included in the 2022 programs, they were also highlighted in others that had already been proposed in 2018. Therefore, H2 has not been denied and has been confirmed in some cases.

In conclusion, the research revealed changes in presidential candidate proposals compared with those in 2018 and 2022. The COVID-19 pandemic was a determining factor when alternative solutions to recurring educational problems in the country were proposed. Most of the changes included proposals on technology and connectivity, the use of ICT, and distance education to promote flexibility and overcome educational backwardness.

Finally, future research agendas from political science could deepen the methodology designed in this research and analyze other electoral processes and policy changes in different contexts, such as conflicts or natural disasters. A similar analysis could be replicated in subnational electoral contexts with mayors or governors.

As mentioned in the introduction, political science in Latin America has not paid systematic attention to educational issues in electoral contexts or political contests. Attention to educational issues has focused on studying the institutionalization of discipline on the basis of the analysis of teaching and professionalization. Therefore, there is a whole space in which the discipline can begin to contribute from theoretical knowledge or, as in the case of this article, with methodological approaches typical of political science, such as comparative politics.

Ethical considerations

This study did not involve any ethical concerns. The authors have complete responsibility for the content and conduct of the research.

Conflict of interest

The authors declare that they have no conflicts of interest.

Funding

This research did not receive any financial support.

References

Abrantes, P. (2021). La educación en tiempos virales: El caso de Portugal. *Revista de Sociología de la Educación, 14*(1), 30–43. https://doi.org/10.7203/RASE.14.1.18954

Almond, G. A. (1999). *Una disciplina segmentada: Escuelas y corrientes en las ciencias políticas.* Fondo de Cultura Económica.

Altman, D. (2005). La institucionalización de la ciencia política en Chile y América Latina: Una mirada desde el sur. *Revista de Ciencia Política (Santiago), 25*(1), 3–15. https://doi.org/10.4067/S0718-090X2005000100001

Arellano, C., & Ortiz, A. (2022). Educación media superior en México: Abandono escolar y políticas públicas durante la COVID-19. *Íconos, 74*, 33–52. https://doi.org/10.17141/iconos.74.2022.5292

Arias, E., Bornacelly, I., & Elacqua, G. (2021). *Hablemos de política educativa en América Latina y el Caribe: Educación superior en América Latina: ¿Cómo las crisis económicas de las últimas décadas han afectado la matrícula?* Banco Interamericano de Desarrollo. https://doi.org/10.18235/0003050

Arriagada, P. (2020). Pandemia COVID-19: Educación a distancia o las distancias en la educación. *Revista Internacional de Educación para la Justicia Social, 9*(3). https://revistas.uam.es/riejs/article/view/12396

Barreda, M., & Sotillos, I. D. (2024). La formación del politólogo: Un análisis de la oferta académica en España. *Política y Sociedad, 61*(1), Article 1. https://doi.org/10.5209/poso.90134

Barrientos del Monte, F. (2020). La ciencia política a través de sus manuales: Tendencias teóricas y perspectivas metodológicas. México y América Latina en perspectiva comparada. *Civilizar, 20*(39), Article 39. https://doi.org/10.22518/jour.ccsh/2020.2a02

Basabe-Serrano, S., & Huertas, S. (2018). El estado de la investigación en ciencia política sobre América Latina. *Revista Española de Ciencia Política*, 153–170. https://doi.org/10.21308/recp.47.06

Bedoya, C., Murillo, G., & Gonzales, C. H. (2021). Gestión universitaria en tiempos de pandemia por COVID-19: Análisis del sector de la educación superior en Colombia. *Estudios Gerenciales, 31*(159), 251–264. https://doi.org/10.18046/j.estger.2021.159.4409

Bejarano, A. M., & Wills, M. E. (2005). La ciencia política en Colombia: De vocación a disciplina. *Revista de Ciencia Política (Santiago), 25*(1), 111–123. https://doi.org/10.4067/S0718-090X2005000100008

Benites, R. (2021). La educación superior universitaria en el Perú post-pandemia.

Bentancur, N., & Mancebo, M. E. (2017). ¿Cómo se forma a los científicos políticos en Iberoamérica? Análisis de la oferta de titulaciones de grado en Ciencia Política en doce países. *Revista Española de Ciencia Política*, 161–185. https://doi.org/10.21308/recp.43.07

Bonal, X., & González, S. (2021). Educación formal e informal en confinamiento: Una creciente desigualdad de oportunidades de aprendizaje. *Revista de Sociología de la Educación, 14*(1), 44–62. https://doi.org/10.7203/RASE.14.1.18177

Bonnéry, S. (2021). Francia: ¿Instrumentalización de la COVID-19 contra la igualdad escolar? *Revista de Sociología de la Educación, 14*(1), 14–29. https://doi.org/10.7203/RASE.14.1.18223

Bril-Mascarenhas, T., Maillet, A., & Mayaux, P.-L. (2017). Process tracing: Inducción, deducción e inferencia causal. *Revista de Ciencia Política, 37*(3), 659–684. https://doi.org/10.4067/S0718-090X2017000300659

CEPAL. (2020). *La educación en tiempos de la pandemia de COVID-19.* CEPAL. https://repositorio.cepal.org/bitstream/handle/11362/45904/S2000510_es.pdf

Cipollone, M. D. (2022). Atlas.ti como recurso metodológico en investigación educativa. *Anuario Digital de Investigación Educativa, 5.* https://revistas.bibdigital.uccor.edu.ar/index.php/adiv/article/view/5280

Collier, D. (2011). Understanding process tracing. *PS: Political Science & Politics, 44*(4), 823–830. https://doi.org/10.1017/S1049096511001429

Duque Daza, J. (2014). La ciencia política en Colombia: Análisis de los planes de estudio, sus áreas y sus énfasis. *Papel Político, 19*(2), 377–411. https://doi.org/10.11144/Javeriana.PAPO19-2.nppj

Duque-Daza, J. (2013). Tres momentos de la institucionalización de la enseñanza de la ciencia política en Colombia (1968–2012). *Papel Político, 18*(1), 15–55.

Dussel, I., Ferrante, P., & Puffer, D. (2022). Nuevas ecuaciones entre educación, sociedad, tecnología y Estado. En *Pensar la educación en tiempos de pandemia: Entre la emergencia, el compromiso y la espera* (pp. 351–364). UNIPE: Editorial Universitaria. https://eduteka.icesi.edu.co/pdfdir/unipe-pensar-la-educacion-en-tiempos-de-pandemia.pdf

Equipo programático Fajardo. (2018). *Programa de Gobierno Fajardo Presidente 2018.* https://www.podion.org/apc-aa-files/3ae8193eec5593e17a1b4bd8d2f13fbb/plan_de_gobierno_sergio_fajardo-ilovepdf-compressed-1-.pdf

Equipo programático Fajardo. (2022). *Programa de Gobierno Colombia cambiará 2022.* https://sergiofajardo.co/propuestas/

Equipo programático Petro. (2018). *Programa de Gobierno Colombia Humana 2018.* https://www.podion.org/apc-aa-files/3ae8193eec5593e17a1b4bd8d2f13fbb/plan_de_gobierno_gustavo_petro.pdf

Equipo programático Petro. (2022). *Programa de Gobierno Colombia Potencia Mundial de la Vida 2022.* https://gustavopetro.co/programa-de-gobierno/

Falleti, T. G., & Mahoney, J. L. (2016). El método secuencial comparado. *Revista SAAP, 10*(2), 187–220.

Fernández, C. N. M., & Molina, E. C. (2023). Vulnerabilidad educativa ante la virtualización de las clases como proceso emergente. *Revista de la Educación Superior, 52*(207), Article 207. https://doi.org/10.36857/resu.2023.207.2566

Flores, M., Machado, E., Alves, & Vieira, D. (2021). Ensinar em tempos de COVID-19: Um estudo com professores dos ensinos básico e secundário em Portugal. *Revista Portuguesa de Educação, 34*(1), 5–27. https://doi.org/10.21814/rpe.21108

Freidenberg, F. (Ed.). (2017). *La ciencia política sobre América Latina: Docencia e investigación en perspectiva comparada.* Editorial Funglode.

Freire, P. (1994). La naturaleza política de la educación (pp. 13–35). *Barcelona: Planeta-Agostini.*

Freire, P. (2004). *Pedagogía de la autonomía.* Paz e Terra.

Freire, P. (2009). *La educación como práctica de la libertad.* Siglo Veintiuno de España.

García, L. (2001). *La educación a distancia: De la teoría a la práctica.* Ariel.

Giroux, H. (1996). Educación posmoderna y generación juvenil. *Nueva Sociedad, 146,* 148–167.

Giroux, H. (1998). *Teoría y resistencia en educación.* Siglo XXI.

Giroux, H., Rivera-Vargas, P., & Passeron, E. (2020). Pedagogía pandémica: Reproducción funcional o educación antihegemónica. *Revista Internacional de Educación para la Justicia Social, 9.* https://diposit.ub.edu/dspace/bitstream/2445/173112/1/704153.pdf

Gluz, N. B., Vecino, L., & Martínez-del-Sel, V. (2022). Trabajo docente en tiempos de pandemia: Agudización de las desigualdades e intensificación de la tarea en la provincia de Buenos Aires. *Íconos, 74,* 73–94. https://doi.org/10.17141/iconos.74.2022.5305

Habermas, J. (2023). *Teoría de la acción comunicativa: I. Racionalidad de la acción y racionalización social. II. Crítica de la razón funcionalista.* Trotta.

Hurtado, F. (2020). La educación en tiempos de pandemia: Los desafíos de la escuela del siglo XXI. *Revista Arbitrada del Centro de Investigación y Estudios Gerenciales, (44)*, 176–187.

Jacovkis, J., & Tarabini, A. (2021). COVID-19 y escuela a distancia: Viejas y nuevas desigualdades. *Revista de Sociología de la Educación, 14*(1), 85–102. https://doi.org/10.7203/RASE.14.1.18525

Katz, R., Jung, J., & Callorda, F. (2020). *El estado de la digitalización de América Latina frente a la pandemia del COVID-19.* Banco de Desarrollo de América Latina. https://scioteca.caf.com/handle/123456789/1540

Kuric, S., Calderón-Gómez, D., & Sanmartín, A. (2021). Educación y brecha digital en tiempos del COVID-19: Perfiles y problemáticas experimentadas por el alumnado juvenil para afrontar sus estudios durante el confinamiento. *Revista de Sociología de la Educación, 14*(1), 63–84. https://doi.org/10.7203/RASE.14.1.18265

Landman, T. (2011). *Política comparada: Una introducción a su objeto y métodos de investigación.* Alianza Editorial.

Lugo, M., Ithurburu, V., Sonsino, A., & Loiacono, F. (2020). Políticas digitales en educación en tiempos de pandemia: Desigualdades y oportunidades para América Latina. *Edutec: Revista Electrónica de Tecnología Educativa, 73*(Especial), 23–36. https://doi.org/10.21556/edutec.2020.73.1719

Martínez-Garcés, J., & Garcés-Fuenmayor, J. (2020). Competencias digitales docentes y el reto de la educación virtual derivado de la COVID-19. *Educación y Humanismo, 22*(39), Article 39. https://doi.org/10.17081/eduhum.22.39.4114

Mendoza, L. (2020). Lo que la pandemia nos enseñó sobre la educación a distancia. *Revista Latinoamericana de Estudios Educativos, 50*(Especial), 343–352. https://doi.org/10.48102/rlee.2020.50.ESPECIAL.119

Meo, A., & Dabenigno, V. (2021). Teletrabajo docente durante el confinamiento por COVID-19 en Argentina: Condiciones materiales y perspectivas sobre la carga de trabajo, la responsabilidad social y la toma de decisiones. *Revista de Sociología de la Educación, 14*(1), 103–127. https://doi.org/10.7203/RASE.14.1.18221

Murga Meler, M. L. (2024). Educación y tecnologías: Significados y esclarecimientos desde la pandemia. *Revista Colombiana de Educación, 90*, Article 90. https://doi.org/10.17227/rce.num90-14504

Nogueira, J., Gonçalves Rocha, D., & Akerman, M. (2021). Políticas públicas adoptadas en la pandemia de la COVID-19 en tres países de América Latina: Contribuciones de la promoción de la salud para no volver al mundo que existía. *Global Health Promotion, 28*(1), 117–126. https://doi.org/10.1177/1757975920977837

Obando Tobón, L. M., & Guzmán-Sossa, Y. A. (2020). Interdisciplinariedad, autonomía e identidad de la ciencia política en Colombia: La apuesta de la Universidad de Antioquia. *Civilizar, 20*(39), Article 39. https://doi.org/10.22518/jour.ccsh/2020.2a03

Ossa, C., Jiménez, A., & Gómez, V. (2023). Saúde mental e carga de trabalho mental em trabalhadores de estabelecimentos de ensino chilenos no contexto da COVID-19. *Revista Portuguesa de Educação, 36*(1), 1–22. https://doi.org/10.21814/rpe.24855

Reimers, F. (2021). Oportunidades educativas y la pandemia de la COVID-19 en América Latina. *Revista Iberoamericana de Educación,* 9–23. https://doi.org/10.35362/rie8614557

Rodríguez, J., Vinelli, D., Aveiro, T., Garlisi, L., Hernández, J., Marticorena, R., Benavides, C., Carranza, R., Mamani, O., & Mejía, C. (2022). Repercusiones académicas de la educación virtual en los estudiantes de Latinoamérica: Validación de una escala. *Educación Médica, 23*(3). https://doi.org/10.1016/j.edumed.2022.100741

Ruiz, G. (2020). Marcas de la pandemia: El derecho a la educación afectado. *Revista Internacional de Educación para la Justicia Social, 9*(3), 45–59. https://doi.org/10.15366/riejs2020.9.3.003

Salazar, H., Berlanga, J., & Zapata, M. (2022). Preferencias de aprendizaje a distancia en la educación universitaria ante la pandemia global desatada por el COVID-19. *Educación y Humanismo, 24*(43), Article 43. https://doi.org/10.17081/eduhum.24.43.5646

Salinas, J. (1998). Redes y educación: Tendencias en educación flexible y a distancia. En *Educación y tecnologías de la educación. II Congreso Internacional de Comunicación, Tecnología y Educación* (pp. 141–151).

Sartori, G. (2011). *Cómo hacer ciencia política: Lógica, método y lenguaje en las ciencias sociales.* Taurus.

Vera, J., Armenta, F., Domínguez, Y., & Ruiz, J. (2023). Bienestar y riesgo psicosocial de profesores de secundaria en contexto de pandemia. *Educación y Humanismo, 25*(44), Article 44. https://doi.org/10.17081/eduhum.25.44.5458

Villamizar, G. (2020). Encuentros entre la pedagogía crítica y la teoría de la resistencia. *Cuadernos de Educación y Desarrollo, 12*(4), 83–90. https://doi.org/10.22206/cyed.2020.v4i1.pp83-90

Zamora, E., & Jervis, M. (2021). Ciencia política en Ecuador, 2005–2019: Una disciplina en búsqueda de institucionalización. *Íconos: Revista de Ciencias Sociales, 70*, 193–221. https://doi.org/10.17141/iconos.70.2021.4667