


## Brief study on the use of active methodologies in teaching during the pandemic period: The case of the Federal District-DF

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### ABSTRACT

The present study is part of a broader post-doctoral research carried out at the Evangelical University of Paraguay-UEP, with the general objective of investigating teaching performance, educational infrastructure and ways of acquiring knowledge of these teachers about hybrid teaching, the flipped classroom, and also on the use of alternative educational resources during the pandemic, in the educational network of the Federal District (DF). The research instrument used was Google forms, and 97 forms were applied, 62% of which were representative of public institutions and 38% of private educational institutions. The DF has just over 3 million inhabitants, and, regarding basic education, the Department of Education is responsible for managing all stages (childhood, elementary and secondary education). Due to the analysis of the main elements returned from the research, through the mathematical and statistical method, aimed at issues inherent to the process of using educational resources in teaching-learning, it was observed that the responding teachers translated the occurrences in the educational context of Brasilia-DF, demonstrating that the FLEX model, which became quite popular during the pandemic, was the most used (40%). This is a methodology in which the teacher provides an activity guide digitally, or similar, so that the student can carry out the activities alone or even in a study group.

**Keywords:** Teaching Activity, Pandemic, Educational Resources, Active Methodologies, GDF Educational Network.

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## INTRODUCTION

The present study is an excerpt of a broader postdoctoral research carried out at the Evangelical University of Paraguay-UEP, and we should initially make some considerations about the political, social and economic situation in Brazil, where, unfortunately, most students from public schools are still unable to take advantage of qualified and technological human resources to help them in their teaching-learning process.

Under such conditions, in Brazil, the political field and its actors, unfortunately, use education and health as important themes in the discourses that precede the investitures in office, promising projects and programs of improvement, as well as more resources for these areas, but, in fact, this does not occur, because, when they take power, it is possible to verify the cuts and contingencies of resources in these areas of extreme social importance.

Although the world literature, as well as research in the educational field, show that access to education means giving society the opportunity not to exclude itself from development, this is still a difficult problem to solve, although urgent, because it is impossible to dissociate education from government policy agendas and development programs.

However, from the occurrence of a health crisis, at a global level, with the spread of the Corona Virus, in 2020, it was necessary for countries to determine a new social policy, through the distancing of people and the application of specific procedures for locomotion and socializing in public, one of them was the mandatory use of face masks.

This new context promoted the distancing of people from their social activities, due to the rules of distancing, from home isolation and creating a systematic relationship between families and the work environment in organizations. And, in the educational environment, it was no different, with an emergency arising to the development of a teaching process, which came to be called Hybrid, intensifying the term *blended learning* in the educational and research space.

Faced with this new scenario, and with the rapid spread of the pandemic, educational units progressively suspended face-to-face activities, giving way to a new form of interaction in the teaching-learning process, moving to an "*online*" format so as not to harm the cognitive development of students. Therefore, from then on, it was necessary to reinvent methodologies to be used in the classroom, enabling the emergence of a broader set of instructional resources and different approaches, and combinations in school spaces.

Considering our object of study directed to the Educational network of the Federal District, due to the pandemic, with a little more than 3 million inhabitants, the Federal District has the highest net schooling rate (which measures the percentage of young people aged 18 to 24 enrolled in higher education in relation to the total population of the same age group), therefore, it is the only state in



the federation to comply with goal 12 of the National Education Plan, which aims to raise the rate to 33% by 2024.

In relation to basic education, the Federal District has characteristics of a city and state, since the Department of Education is responsible for the management of all stages of basic education (kindergarten, elementary and high school). In the rest of the country, municipalities primarily offer early childhood education and elementary education, and states are responsible for secondary education. In the educational network of the Federal District, these functions are accumulated in the Department of Education, which is why the public network of the Federal District is one of the largest in the country, with more than 450 thousand students served.

## **THEORETICAL FRAMEWORK**

As previously mentioned, this new emergency situation meant that educational institutions, at any level, from the initial grades to higher education around the world, needed to look for a way to transmit knowledge that could keep the teaching-learning process in tune with quality, and also with the learning cycle. In this aspect, Macedo tells us (2017):

"The internet arrived in Brazil in 1981 through a network of universities, called Bitnet, founded in 1981, which linked the City University of New York (CUNY) to Yale University, in Connecticut. It connected, by means of a copper wire inside a submarine cable, the São Paulo Research Foundation (FAPESP) to Fermilab, a physics laboratory specializing in the study of atomic particles, which was located in Illinois, in the United States." (MACEDO, 2017, p.18)

It should be noted that the implementation of the internet in educational units, as well as its use in Brazilian education, arose from the interest of university educators, who interacted with other countries such as the United States and France. (VALENTE, 1999), this fact triggered the need for a reconfiguration of objectives and skills in academic curricula, exploring the various possibilities of a powerful tool that could explore new horizons for students, and the entire academic and scientific community.

Such possibilities encouraged the creation of learning environments capable of providing students with the opportunity to build their own knowledge, and with that, the need for a reorganization of the classroom and, mainly, a new rethinking of the role of the educator in the educational routine, and of the school, from a new posture, which would enable students to have greater insertion in society. and to know a new world, that is, the discovery of something hitherto unknown. In this aspect, according to Macedo (June, 2017),

"From 1994 on, the internet moved away from academia and began to be commercialized. Embratel launches the Commercial Internet Service, on an experimental basis and with an international connection of 256 Kbps, where about five thousand users were chosen to test the service. In May 1995, the service became definitive in the country and the Ministry of



Communications decided to commercially exploit it, making the Internet a trend in the country and popularizing it more and more." (MACEDO, 2017, p.20)

As previously mentioned, the experiences in Brazil with the internet began in universities in the 1970s, with the aim of changing pedagogical action, and in the 1980s these efforts increased in order to implement educational informatics. These technological advances will not stop there, because in the mid-1990s the dissemination of the Internet became part of the daily life of Brazilians in all their activities.

"In a much deeper way than the telephone, the radio and television, the connected computer, it indicates that the next generations need to have a different posture, familiar with real-time communication between people distant in time and space." (MELLO & TEIXEIRA, 2009, p.36)

According to data from the "ICT Kids Online" survey (2019), the new information and communication technologies (ICT's), due to activities carried out on the internet in the educational field and search for information, with Brazilian children from 09 to 17 years old, revealed that 76% access the Internet to do schoolwork, and of this total, the northeast region was the one that had the most access with 79%. The survey also revealed that only 38% access the Internet by computer, of which 44% are in the south and southeast regions. Another important fact is that more than 95% access the Internet by cell phone, with a leveling in all regions of the country.

The constant technological updates and the great cultural influence on society from the second half of the twentieth century to the present have caused a virtualization of relationships. According to Levy (1996, p.5), virtualization is understood as:

"The word comes from the medieval Latin virtuals, derived in turn from virtus, strength, potency. In scholastic philosophy, what exists in potency and not in act is virtual. The virtual tends to be updated, without, however, having passed to the actual or formal concreteness. The tree is virtually present in the seed. In strictly philosophical terms, the virtual is not opposed to the real, but to the actual: virtuality and actuality are only two ways of being different."

In this context, Levy does not define the virtual as the opposite of the real, but as a different way of being. The interactions carried out in cyberspace are endowed with potential reality, constituted by information from the most diverse origins, interconnected and with the potential to modify the structure of human thought.

## **METHODOLOGICAL FRAMEWORK**

On the way to consolidate this study, a systematic literature review was carried out in order to seek the direction of theoretical data collection, since synthesizing research represents a fundamental task to advance in the line of knowledge (ZUPIC; CATER, 2015).



Therefore, we also believe that this is a qualitative research, as it proposes reflexive arguments, within a holistic view of the studied phenomenon that interferes in its context. Such situations are essential for the researcher to be able to analyze and understand, in depth, his or her object of study (COLLADO; SAPÉPIER, 2014; BOGDAN; BIKLEN, 2013).

Regarding the technique used for data collection, it occurred through the application of a questionnaire, which for Gil (2017) has proven to be efficient in research focused on the human, in which investigations seek to understand how this "human" constructs scientific knowledge during the investigation process.

The objective of the data collection instrument was to know the reality of teaching in the Federal District, with the implementation of active methodologies, due to the pandemic and to allow the search for information that would help in the understanding of issues related to the theme of Hybrid Teaching and Flipped Classroom, among other instructional resources.

The questionnaire was sent to the faculty to be answered and forwarded to the researcher, for this purpose, they were distributed by e-mail, to the teachers of the public and private education network of the Federal District, in a total of 168 teachers, and 97 (ninety-seven) documents were duly answered, which represents 57.8% of the answers obtained. which served as the basis for reflections that follow in the chapter on the analysis of the results.

## **ON THE ANALYSIS OF THE RESULTS**

Some data on Basic Education in the Federal District are important to record, as it helps future reflections on possible consequences of the continuity of the implementation of new teaching methodologies in the educational network.

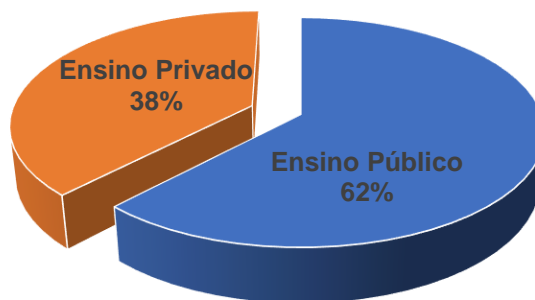
In 2019, 49.7% of students who completed high school in the Federal District had adequate learning in Portuguese (Brazilian average is 37.1%), 39.1% among public school students and 78.5% among private school students. In Mathematics, the percentage was 18.3% (Brazilian average is 10.3%), 7% among students from public schools and 48.9% among those from private schools.

In the Federal District, in 2022, only 2% of high school enrollments were in full-time schools, a rate significantly lower than the Brazilian average of 17.7%. Regarding the completion of this stage, in 2022, out of every 100 19-year-olds, 74 completed high school, which corresponds to the 3rd highest completion rate in the country.

Due to the development of the research report that originated this study in the form of an article, as well as the cut made from the questionnaire applied, the statistical mathematical method was used, directed to the issues inherent to the process of use of instructional resources in teaching-learning, and, because these are themes that have an interdisciplinary character in a cross-sectional approach, the answers translate the occurrences in the educational context of Brasília-DF.

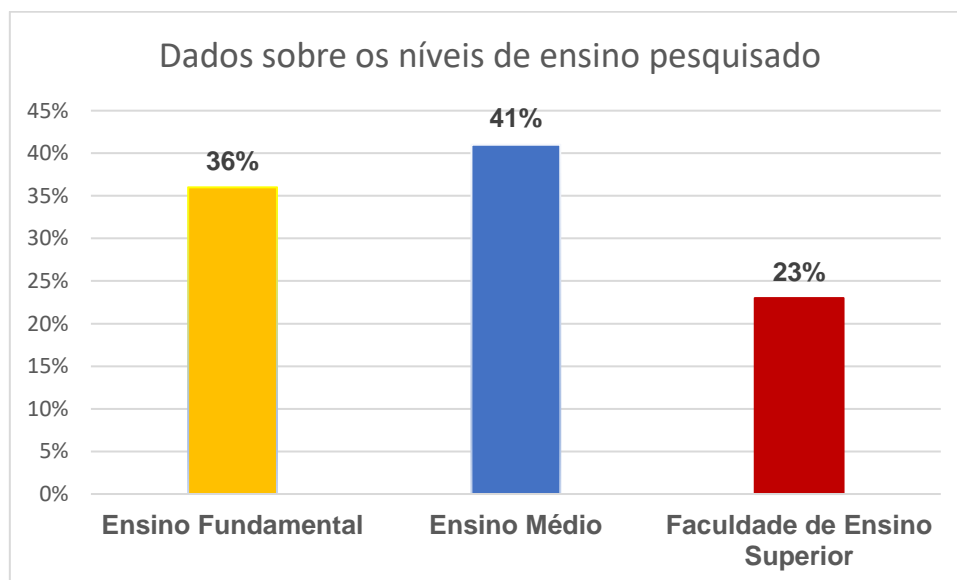
Therefore, based on the instrument applied, the questions were directed to the teaching performance, educational infrastructure and ways of acquiring knowledge about hybrid teaching, the flipped classroom, and also about the use of alternative resources during the pandemic, based on the basic and higher education network in the Federal District. Of the 97 forms answered, 62% represent public educational institutions and 38% represent private educational institutions.

### Percentual apurado do Ensino Público e Privado



Source: Survey Author, 2023

Regarding the levels of education, the applied research occurred in the following levels of education: Elementary School (36%); High School (41%) and Higher Education (23%)

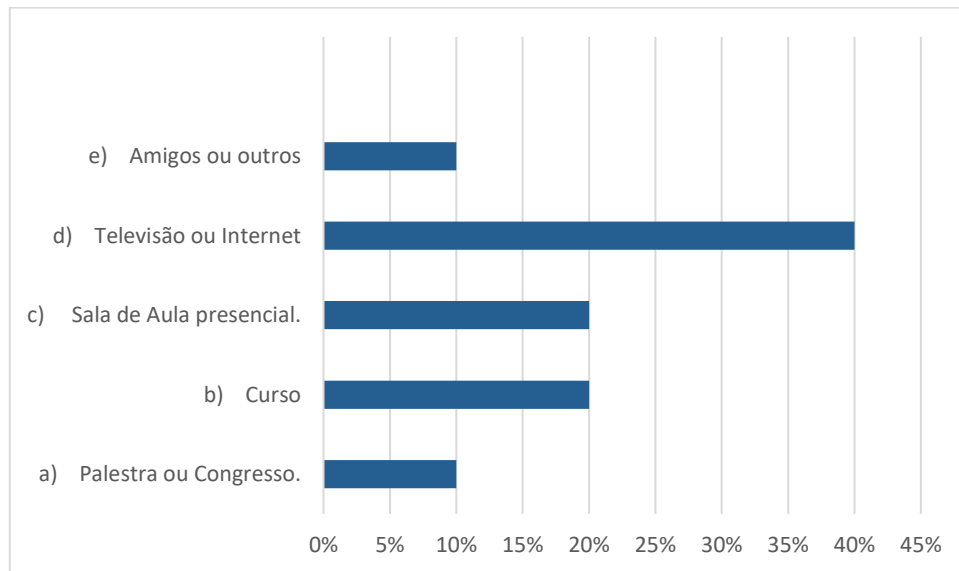


Source: Survey Author, 2023



Next, we will analyze, through direct questions to the faculty working at these levels of education, in order to obtain analytical elements on the use of active methodologies, having as reference the pandemic period in the Federal District.

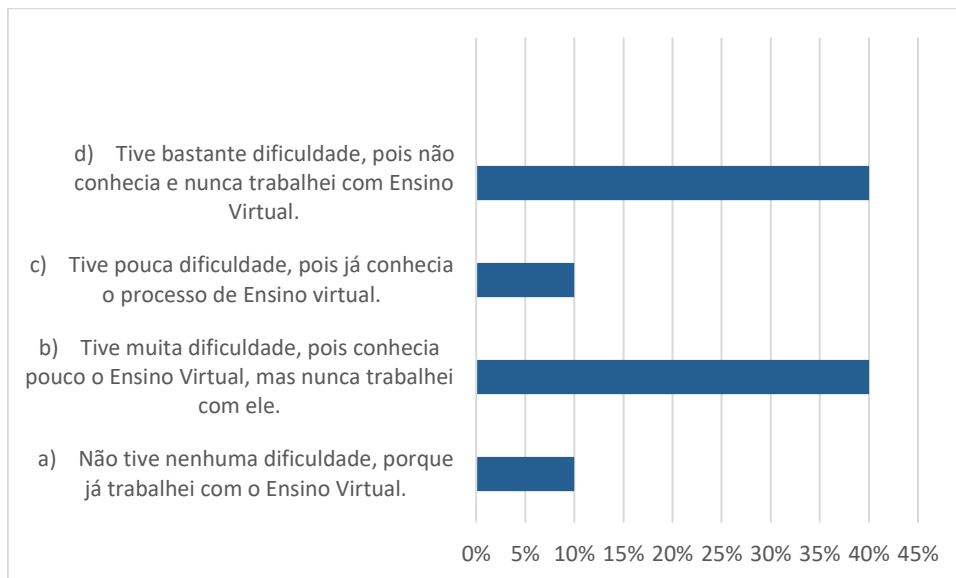
### HOW WAS YOUR FIRST CONTACT WITH THE FORM OF BLENDED LEARNING



Source: Prepared by the author, 2023

It can be observed that the contact of the responding teachers with hybrid teaching took place through television or the internet (40%), followed by the face-to-face classroom (20%) and through courses (20%). Other media, such as friends and lectures, and conferences were attended (10%).

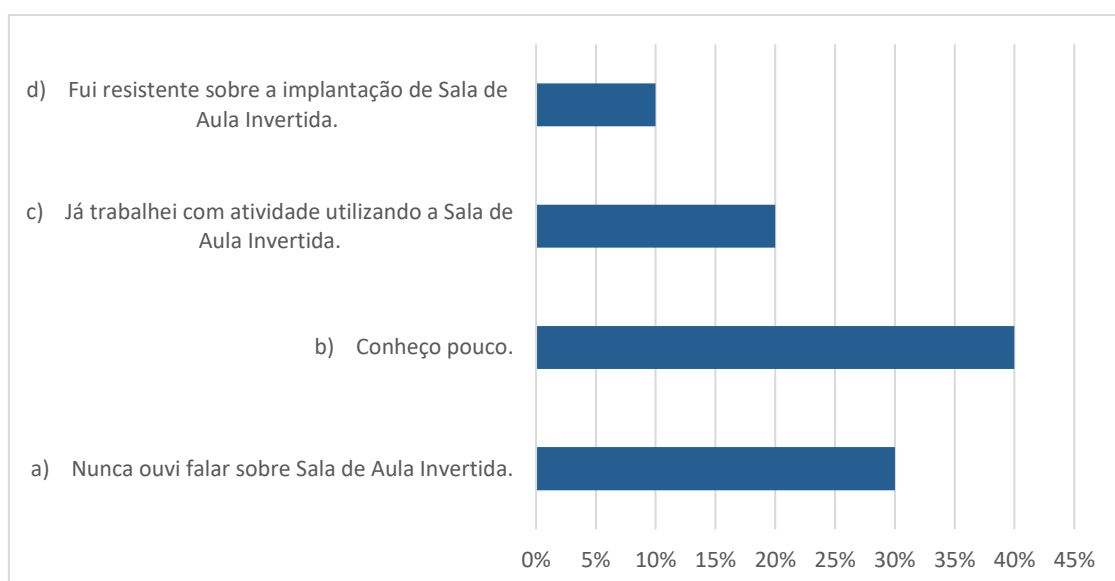
### IN THE IMPLEMENTATION OF THE SOCIAL ISOLATION PROCESS, DUE TO COVID-19, HOW WAS YOUR PROCESS OF ADAPTATION TO THE NEW EDUCATIONAL REQUIREMENTS?



Source: Prepared by the author, 2023

Considering the theme of the adaptation of the teacher to the new technological requirements applied to education, still in relation to the pandemic, (40%) of the respondents presented a lot of difficulty, as they did not know and had not worked with Virtual teaching and others (40%), despite little difficulty, had some knowledge about virtual teaching. And only (10%) said they had no difficulties, as they had already worked with virtual teaching in their school environments. Others (10%) did not have any difficulties because they had already worked with virtual teaching.

### ABOUT THE FLIPPED CLASSROOM, WHAT IS YOUR UNDERSTANDING OF THIS INSTRUCTIONAL RESOURCE



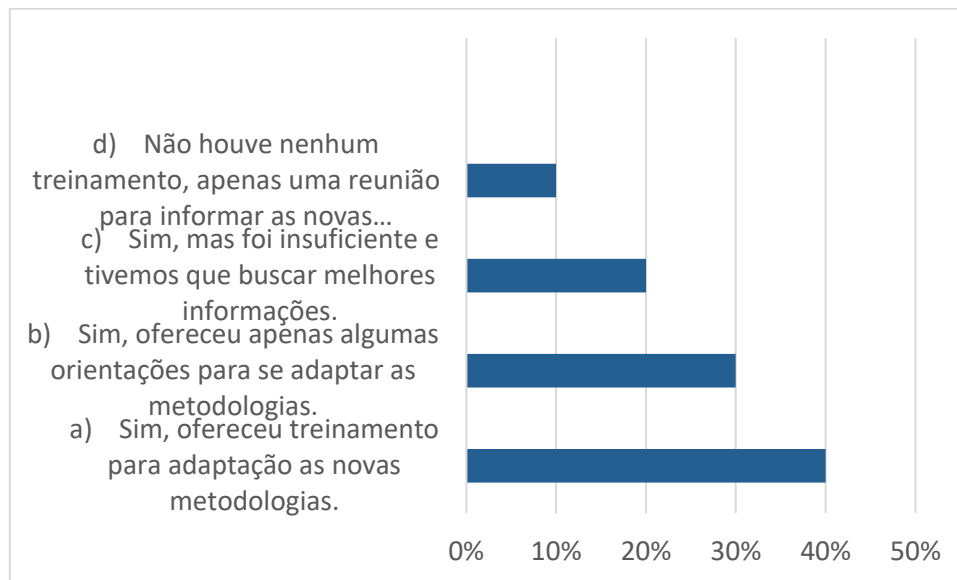
Source: Prepared by the author





Regarding the knowledge of the educational resource, Flipped Classroom, (40%) answered that they had little knowledge and (30%) had never heard about it. Regarding those teachers who were resistant to the implementation, (10%) mentioned difficulties with this instructional resource.

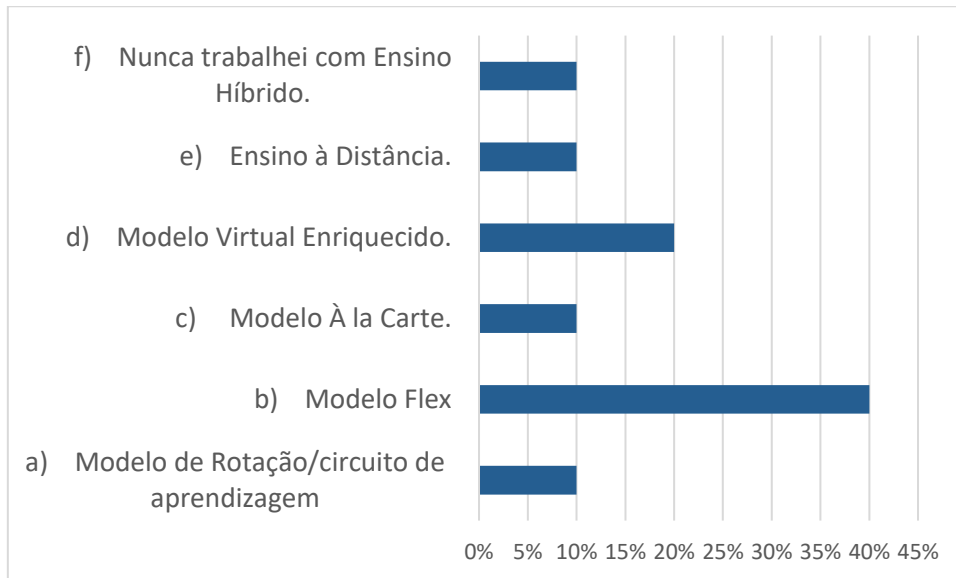
### HAS THE INSTITUTION YOU WORK FOR OFFERED ANY TYPE OF TRAINING FOR THE USE OF THE NEW TEACHING METHODOLOGIES?



Source: Prepared by the author, 2023

Regarding the support of the institution where the teacher works, regarding the provision of some type of training for the use of new teaching methodologies, (40%) answered that the institution offered training to adapt to the use of new technologies and (30%) offered guidance and directions. (20%) of the respondents mentioned that their institutions offered some support, but insufficient, and others (10%) answered that they did not have any type of support.

### IN YOUR PROFESSIONAL WORK AS A TEACHER, HAVE YOU WORKED WITH ANY OF THESE BLENDED LEARNING MODELS?



Source: Prepared by the author, 2023

It is important to consider in this analysis that the FLEX model, which became very popular in the pandemic, was the most used by teachers (40%), this model allowed greater adaptability due to the social isolation triggered in the Federal District and throughout the country. Then, the enriched virtual model had as feedback (20%) from the teachers, followed by the distance methodology (15%). Another 10% of teachers reported that they had never worked with blended learning, so they did not use any of the educational resources during the pandemic.

### INDICATE WHICH OF THE BLENDED LEARNING STRATEGIES HAVE YOU WORKED ON?

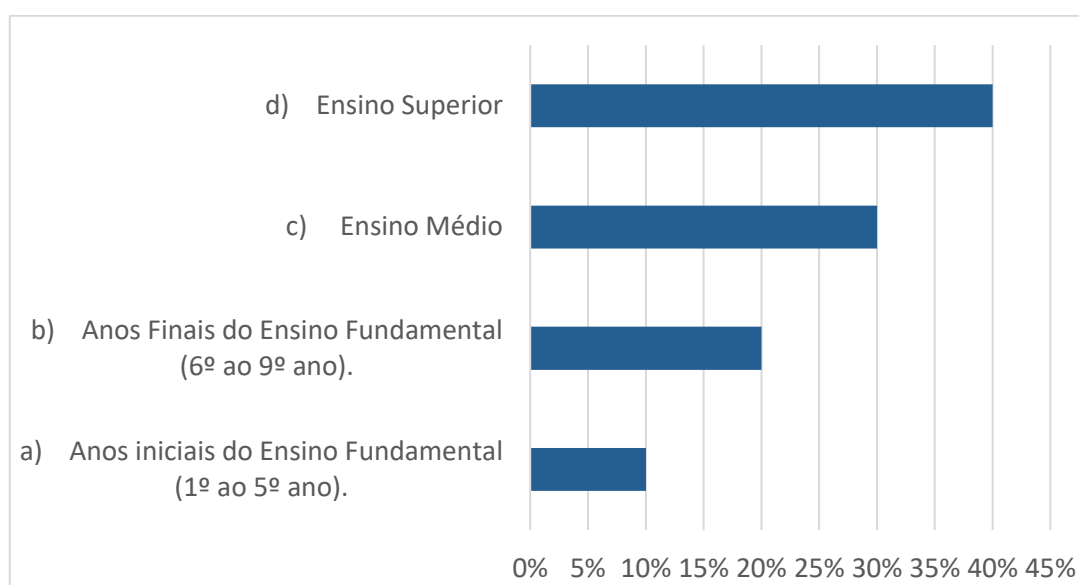


Source: Prepared by the author (2023)



It can be seen that from the Flex model, the strategy based on case study was the most used (30%), followed by *storytelling* (20%), while (10%) of the teachers said they had not used any defined teaching strategy.

### TO WHICH STAGE OF TEACHING DO YOU APPLY, OR HAVE YOU ALREADY APPLIED, THESE NEW EDUCATIONAL STRATEGIES?



Source: Prepared by the author, 2023

The purpose of this last question was to identify the stage/level of education in which the teacher applied the new teaching strategies, considering their teaching activities in the pandemic period, where (40%) of the occurrences occurred in higher education and (30%) in high school.

### FINAL CONSIDERATIONS

This research, which focused on the teaching activity and its relationship with the use of educational resources during the pandemic period, as well as, subject of analysis, the educational network of the Federal District, proposed to address the performance of these teachers, in view of the possibilities of alleviating teaching-learning difficulties. It was also observed, throughout the study, that the private schools of the DF had few difficulties in terms of loss of content for their students, since the students of these schools had computers in their homes and this made a difference in the appropriation of the contents and development of the activities.

On the other hand, public schools had to adjust their evaluation methodologies in compliance with the determinations of the government of the Federal District, where the guidelines were directed to avoid failure, a fact that caused a series of losses in educational content, as most students lost the



necessary prerequisites for the later grades, as they no longer had access to important topics evaluated to follow the subsequent grades.

Returning to the teaching effort, it can be observed that the FLEX model, which became quite popular in the pandemic, was the most used by teachers (40%). This is a methodology in which the teacher provides an activity guide by digital means, or similar, in the sense that the student can carry out the activities alone or even in a study group.

This resource enables the student to become independent in their knowledge acquisition process, and also to develop other skills for team activities, in this sense, the role of the educator is to act as a mediator and tutor, performing punctual interventions according to the student's needs. The Performance Evaluation is carried out *online*, considering your individual and collective perspective in terms of performance.

In another aspect, it was possible to infer, in general, that Brazilian education needs to go through processes of intense changes, from issues related to management, such as the initial and continuing training of teachers from innovative and permanent actions, allowing a greater presence of technology applied to education. And, in the case of the Federal District, the local and regional particularities of each educational unit, linked to the level of investments allocated, represent factors to be prioritized by the district government authority.



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