

Emergency remote teaching in Fortaleza (CE): performance and study environment of high school students

ARTICLE

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Abstract

The COVID-19 pandemic, which broke out in 2020, has forced schools in Brazil to close and Emergency Remote Education (ERE) to be implemented. In order to continue school activities in the middle of the semester, teachers and students have encountered many difficulties in accessing the internet and handling equipment, techniques and teaching materials. This article analyzes the results of a survey completed by 397 high school students from the Metropolitan Region of the city of Fortaleza (capital of the state of Ceará, Brazil), in the second semester of 2021, who experienced this moment of social isolation, when they detected: a negative impact on learning, difficulties in keeping up with remote classes, isolation and less motivation to study. The study, which is segmented by average monthly family income, is descriptive and quantitative, and analyzes aspects of the study environment and the learners' school performance

Keywords: Pandemic. Hybrid classes. Emergency Remote Learning. Ceará.

Educação remota de urgência em Fortaleza, Brasil: Desempenho escolar e ambiente de estudo de alunos do ensino médio

Resumo

A pandemia de COVID-19, que eclodiu em 2020, impôs o fechamento de escolas e a implementação do ensino remoto de emergência (ERE) no Brasil e em outros países. Para dar continuidade às atividades escolares no meio do semestre, professores e alunos encontraram muitas dificuldades de acesso à internet e de manuseio de equipamentos, técnicas e materiais didáticos. Este artigo analisa os resultados de uma pesquisa respondida por 397 estudantes do ensino médio da Região Metropolitana de Fortaleza (capital do estado do Ceará, Brasil), no segundo semestre de 2021, que vivenciaram esse momento de isolamento social, quando detectaram: impacto negativo na aprendizagem, dificuldades em acompanhar as aulas remotas, isolamento e menor motivação para estudar. Esta pesquisa, segmentada por renda familiar média mensal, é descritiva e quantitativa, e analisa aspectos do ambiente de estudo e do desempenho escolar dos discentes.

Palavras-chave: Pandemia. Aulas híbridas. Ensino à distância em caso de emergência. Ceará.

1 Introduction

2 DChallenged by the growing availability of, and consequent dependence on, digital technology in society, educators have become concerned about the use of traditional teaching methods, which are often incapable of providing a quality education, with new learning habits, or which do not capture the attention of so-called millennials (George, 2013, online).

Educators have warned that these traditional methods have lost ground in classrooms to laptops and cell phones, due to the increasing distractions they provide. While much has been written about students' experiences and their motivations and desires to develop, there is relatively little research on the impact of these changes on their performance and overall levels of satisfaction with remote learning (Sankoff, 2014, online).

As a way of continuing the teaching-learning process during the pandemic period, the Ministry of Education (MEC), together with the State Education Departments, issued regulations authorizing the continuation of teaching through online digital resources (Trindade; Correia; Henriques, 2020; Neri; Osorio, 2021).

In this way, the disruption caused by the COVID-19 pandemic to traditional teaching modalities has provided an excellent opportunity to examine the perspectives of students in Fortaleza on the transition to online learning.

2 Methodology

In order to understand the scope of the problems raised, we applied an online questionnaire in the second semester of 2021, answered by 397 students from the Metropolitan Region of Fortaleza, capital of the State of Ceará (RMF).¹

¹ According to the 2021 School Census, at secondary level in Fortaleza, there were 81,111 enrolments in public schools and 19,910 in private schools, totaling 101,021 in the RMF. Available at: <https://gedu.org.br/municipio/2304400-fortaleza/censo-escolar> Accessed on: July 10, 2023

In 2021, there were 101,021 enrolments in the 301 public and private secondary schools in Fortaleza². Considering this population, the sample size in this survey, of 397 respondents, has a confidence level of 95% and a margin of error of 5%³.

Among the respondents, 238 (59.5%) were female, 155 (38.8%) male and 4 (1.7%) did not want to identify themselves (others). The average age was 16.14 years.

With regard to location, 28 (7.7%) were from rural areas and 369 (92.3%) from urban areas. The average monthly family income is distributed as follows: 182 (45.5%) students with an income of "up to 1 minimum wage per month"; 179 (44.8%) with "more than 1 to 5 minimum wages per month"; and 35 (8.8%) with "more than 5 minimum wages per month".⁴.

For data collection, a structured questionnaire was chosen as the instrument (Marconi; Lakatos, 2017), consisting of 44 closed questions and one open question, prepared and sent via the Google Forms platform.⁵, considering that, during this period, the social scenario was affected by the Covid-19 pandemic, which had repercussions on the closure of businesses considered "non-essential", thus making it impossible to hold classes entirely in the face-to-face teaching format.

Some of the answers to the open (subjective) question 45 have been transcribed verbatim and, in order to preserve the students' identity, we have chosen to identify them with the names of some of the characters in the novel O Guarani, by Ceará writer José de Alencar (1829-1877).

The instrument consists of six sections, namely: (1) Personal data; (2) School environment; (3) School performance; (4) Physical study environment; (5) Physical and mental health; and (6) Remote teaching. To carry out this study, the problematization

² Synopsis of the School Census available at:

<https://cidades.ibge.gov.br/brasil/ce/fortaleza/pesquisa/13/5908?ano=2021> Accessed on: July 10, 2023.

³ Calculation obtained from the free QualtricsXM service, available at: <https://www.qualtrics.com/pt-br/gestao-de-experiencia/pesquisa-de-mercado/determine-sample-size/>

⁴ From now on, we will use SM here instead of the term 'minimum wage'.

⁵ Free platform for creating electronic forms, preparing instruments and also used as a means of completing tests, school assignments and the like.

revolves around analyzing school performance and the study environment in remote education, based on the average monthly income per family nucleus.

In the initial section, the students were informed, by means of the Informed Consent Form (ICF), among other things, that their participation was entirely voluntary, that they would not receive any remuneration for their contributions, and that all aspects of Resolution No. 510/2016 of the National Health Council (CNS) (BRASIL, 2016) would be and are being observed.

The data was structured in the Microsoft Excel program, version 2019, and then transferred to the R-4.3.0 for Windows statistical software, which processed descriptive statistical data, relative frequency (%) and absolute frequency (n).

The study is descriptive, quantitative and cross-sectional (Sampieri; Collado; Lucio, 2013), aiming to uncover the still little-known reality, in the light of academia, of students from Fortaleza who have had their rhythm of classes and studies strongly impacted by social isolation due to the Covid-19 pandemic.

3 Results and Discussion

In order to better describe the phenomena experienced by high school students from the metropolitan region of Fortaleza/CE during the period of emergency remote education (ERE), we present three subtopics, taking into account the average monthly income of the family nucleus: (3.1) School performance; (3.2) Study environment and (3.3) Remote education, referring to sections 3, 4 and 6 of the instrument applied.

3.1 School performance in ERE

Several limiting factors began to emerge more intensely, considering social inequalities and the lack/difficulty of access and permanence in this teaching/learning process considered "atypical" and characterized as "emergency", according to Souza and Ferreira (2020).

Table 1 below sets out six questions relating to the perception of Fortaleza students, categorized by average monthly family income, regarding their school performance during the period of social isolation:

Table 1. School performance of high school students (Fortaleza, 2021)

Items/categories	Average monthly family income n (%)			
	Up to 1 minimum wage	From 1 to 5 minimum wages	More than 5 minimum wages	Total N (%)
a) Do you live in the same city as your school?				
No	22 (5,5)	20 (5,3)	6 (1,4)	48 (12,2%)
Yes	160 (40,3)	159 (40,0)	29 (7,3)	349 (87,8%)
b) How has social isolation affected your organization of studies and school commitments?				
Affected a lot and couldn't concentrate on academic activities	99 (24,9)	99 (24,9)	28 (7,0)	227 (57,1%)
It didn't affect him much and he managed to keep up a certain pace of study, but with difficulties	6 (1,5)	9 (2,2)	1 (0,2)	16 (4,0%)
It didn't affect him, as he was able to keep up his regular rhythm of studies	81 (20,4)	67 (16,8)	6 (1,5)	154 (38,9%)
c) In remote teaching, do you think that:				
Learned more because he had extra time to study	8 (2,0)	7 (1,8)	0 (0,0)	15 (3,8%)
Learned less than in classroom teaching	150 (37,8)	158 (39,8)	32 (8,1)	340 (85,7%)
No difference	29 (7,3)	10 (2,5)	3 (0,7)	42 (10,5%)
d) During social isolation, do you estimate that you spent, on average, how many hours a day in front of the screen watching only the lessons?				
Three to five hours/day	81 (20,4)	125 (31,4)	16 (4,0)	222 (56,0%)
Less than two hours/day	45 (11,4)	32 (8,0)	10 (2,6)	87 (22,0%)
Six or more hours/day	41 (10,3)	38 (9,5)	9 (2,2)	88 (22,0%)
e) In relation to your performance in the exams, compared to the face-to-face mode, do you think that the exams were administered remotely this year?				
They were more difficult	45 (11,3)	36 (9,1)	1 (0,2)	82 (20,6%)
They were easier	87	87	18	192

	(21,9)	(21,9)	(4,5)	(48,3%)
Indifferent, the degree of rigor was practically the same.	55 (13,8)	52 (13,1)	16 (4,1)	123 (31,0)
f) Compared to the face-to-face mode in 2019, you say that your grades obtained during the quarantine:				
Improved, higher grades	82 (20,7)	52 (13,0)	7 (1,8)	141 (35,5%)
No change	61 (15,4)	68 (17,1)	18 (4,5)	147 (37,0%)
Worsened, lower grades	44 (11,0)	55 (13,9)	10 (2,6)	109 (27,5%)

Source: Prepared by the authors.

From question (a) above, it can be seen that the majority of students live in the same area as their school - 349 (87.8%) - a favorable situation which, in principle, did not take up much of their time commuting from school to home.

When asked "How has social isolation affected your organization of studies and school commitments?", in question (b) above, 227 (57.1%) of the students replied that "It has affected you a lot and you haven't been able to concentrate on academic activities".

Student Peri (2021, online) had this to say:

It's been quite a complicated period, because apart from my mental health, which is affecting me a lot, the internet doesn't help, sometimes there are too many activities and I end up overloading myself, but little by little it's working out!

According to Medeiros Filho, Silva and Magalhães Junior (2022), the change in the physical teaching environment had repercussions that made it difficult to concentrate and follow up fully, reinforcing the demotivation to continue in the teaching-learning process during the Covid-19 pandemic.

Consequently, in question (c) above, 340 (85.7%) students answered that they "learned less than in classroom teaching". This data is impressive, but not surprising, referring to the difficulty of adapting to the new educational scenario adopted as an emergency measure to resume the teaching process, considering that a considerable portion of the sample reported learning difficulties.

For student Mariz (2021, online):

I was isolated almost all the time and this affected me drastically, because with no routine, no energy and without my friends at school every day, I became very sad and had nothing to do during a large part of the isolation, not just physically, but in

other ways too. I felt increasingly lonely and depressed because of these factors, as well as the weight I gained from not being able to exercise. I'm increasingly saddened by all of this and seeing so many cases and the possibility of this continuing only makes me feel worse.

On the other hand, a survey of high school teachers in Rio de Janeiro, during the same pandemic period, points out that it was precisely these teachers who had their activities interrupted the most during the pandemic (Santos; Oliveira, 2021, p. 10).

As with the variable discussed above, the students with such learning difficulties are from the family group that earns "Up to 1 minimum wage per month" and "1 to 5 minimum wages per month", which may have a direct association with the difficulties mentioned above by the survey participants.

In response to the question "During social isolation, do you estimate that you spent, on average, how many hours a day in front of the screen watching only classes?", in question (d), the majority of students - 222 (56.0%) - said they spent "Three to five hours/day".

On the other hand, in question (e), when asked "in relation to your performance in the exams, compared to the face-to-face modality, do you think the exams applied remotely this year?", 192 (48.3%) students thought they were "easier".

With regard to variable (f), "Compared to the face-to-face mode in 2019, do you think your grades obtained during the quarantine", the largest proportion - 147 (37.0%) - reported no difference in their grades. However, a considerable portion - 141 (35.5%) - revealed that there had been an improvement.

This may be associated with the diversity of assessment practices and instruments used during the teaching-learning process, which for some may have improved academic performance in terms of grades.

According to Bortolini and Nauroski (2022, p. 8), there was no lack of effort on the part of the teachers:

[...] teachers used various assessment tools during remote emergency teaching involving digital media, but these professionals stated that these tools were insufficient due to the fact that individualized work with each student is still the best way to assess; in other words, face-to-face teaching is essential for teacher mediation in basic education..

We reiterate the importance and necessity of face-to-face education, considering that such educational adaptations (online classes) can contribute to educational deficits (Ferreira; Santos, 2021). Although unquestionable and long-term, the effects of such disruption are not yet fully known. Dropping out, deteriorating school performance and deepening educational inequality are the losses that most affect and will affect the poorest (which is nothing new).

With regard to the family income variable, several studies that have questioned the continuity of teaching and learning in the Covid-19 pandemic have diagnosed a negative association. In other words, the lower the family income, the greater the difficulties in learning and remaining in this process (Medeiros Filho; Silva; Magalhães Junior, 2023).

In this subtopic, we understand the reality of the students taking part in the research regarding their school performance. Circumstantially, it is possible to see that the majority point to a decline in performance due to the intense changes in the educational scenario and the sudden transition from a fixed framework with which they were already familiar to an online environment, unconventional to educational practices until then.

3.2 ERE study environment

The student's space, the place where they do their school work, the physical environment in which they study has been pointed out as a very important aspect for learning, since its lack or precariousness - including the library, study room, classroom, courtyard, not to mention socializing with classmates, teachers and other technical-administrative staff - leads to learning deficits at various stages of education, such as the final years of primary and secondary school (Silveira et al., 2021).

According to Medeiros Filho, Silva and Magalhães Junior (2022), the home environment is inappropriate for monitoring and participating in classes, since due to social isolation, a considerable portion of Brazilian families had to work from their own homes, which hindered the effective performance of students.

Table 2 below shows nine questions relating to the evaluation by students in the capital of Ceará, categorized by average monthly family income, of their study environment during the period of social isolation:

Table 2 - High school students' study environment (Fortaleza, 2021)

Items/categories	Average monthly family income n (%)			
	Up to 1 minimum wage	From 1 to 5 minimum wages	More than 5 minimum wages	Total n (%)
g) How was your study space used during the period of social isolation?				
Shared / with some individual space (bedroom).	60 (15,1)	69 (17,3)	13 (3,3)	142 (35,7%)
Shared / no individual space (living room, kitchen).	92 (23,1)	56 (14,1)	0 (0,0)	148 (37,2%)
Not shared / totally individual (bedroom, study room).	35 (8,8)	50 (12,7)	22 (5,6)	107 (27,1%)
h) To attend remote classes and carry out school activities, did you have access to the internet?				
Yes, via broadband, wi-fi	168 (42,3)	164 (41,3)	35 (8,8)	367 (92,4%)
Yes, via mobile data	14 (3,6)	4 (1,0)	0 (0,0)	18 (4,6%)
Other	5	7	0 (0,0)	12 (3,0%)
i) Which of the following devices did you use most often to monitor remote classes and school activities this year?				
Cell phone	165 (41,5)	112 (28,2)	14 (3,5)	291 (73,2%)
Notebook	18 (4,5)	47 (11,9)	20 (5,0)	85 (21,4%)
Tablet	1 (0,3)	0 (0,0)	1 (0,3)	2 (0,6%)
Desktop computer	3 (0,7)	16 (4,1)	0 (0,0)	19 (4,8%)
Other	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)
j) The device you used the most was entirely at your disposal during remote classes and other school activities?				
Yes	157 (39,5)	140 (35,2)	32 (8,1)	329 (82,8%)
No, because it was shared with other person(s)	30 (7,6)	35 (8,9)	3 (0,7)	68 (17,2%)
k) How many devices with internet access do you have at home?				

1	34 (8,6)	21 (5,3)	0 (0,0)	55 (13,9%)
2	66 (16,6)	51 (12,9)	6 (1,5)	123 (31,0%)
3	22 (5,5)	30 (7,5)	1 (0,2)	53 (13,3%)
4or more	65 (16,4)	73 (18,4)	28 (7,0)	166 (41,8%)
l) Most of the time this year you attended remote classes:				
Live, synchronously	183 (46,0)	155 (39,0)	31 (7,9)	369 (92,9%)
Recorded	12 (3,1)	13 (3,2)	2 (0,5)	27 (6,8%)
Other (podcasts, WhatsApp groups)	12 (3,0)	7 (1,7)	2 (0,5)	21 (5,2%)
m) During your classes and distance studies, did you receive any guidance other than from your teachers?				
Yes, from my family	32 (8,0)	28 (7,0)	6 (1,7)	66 (16,7%)
Yes, from friends/colleagues	65 (16,4)	71 (17,9)	16 (4,0)	152 (38,3%)
No	90 (22,7)	76 (19,1)	13 (3,2)	179 (45,0%)
n) How do you rate the quality of your internet access during remote classes?				
Virtually no access	0 (0,0)	3 (0,7)	0 (0,0)	3 (0,7%)
Poor	20 (5,1)	13 (3,3)	1 (0,2)	34 (8,6%)
Fair	69 (17,3)	95 (24,0)	7 (1,7)	171 (43,0%)
Good	65 (16,4)	59 (14,9)	18 (4,5)	142 (35,8%)
Good	13 (3,3)	25 (6,3)	9 (2,3)	47 (11,9%)
o) Does your family understand the importance of continuing your studies remotely during social isolation?				
Yes	130 (32,7)	135 (34,1)	28 (7,1)	293 (73,9%)
No	9 (2,2)	7 (1,8)	0 (0,0)	16 (4,0%)
No opinion	48 (12,0)	33 (8,3)	7 (1,8)	88 (22,1%)

Source: Prepared by the authors.

In table 2 above, question (g) shows that 148 (37.2%) respondents did not have an individual space, i.e. they shared it with other family members. 142 (35.7%) claimed to

have an individual space to attend classes (i.e. bedroom), but this was also shared with other family members.

In question (h), almost all of the participants - 367 (92.4%) - attended classes via the fixed internet network (broadband / wi-fi), while only 18 (4.6%) used the mobile data network of their own cell phone/smartphone. However, it is important to clarify that, according to the answers to question (n), although the majority of the study participants had fixed internet, almost half - 171 (43.0%) - reported "reasonable" quality of this fixed network, which may have compromised the process of access and permanence in virtual spaces.

According to the answers to question (i), as in the study by Medeiros Filho, Silva and Magalhães Junior (2022), the electronic device most used to access synchronous and asynchronous classes and to carry out work was the cell phone/smartphone, according to 291 (73.2%) respondents.

As the transition from face-to-face to remote learning was perceived by many as "radical" and "sudden", many families did not have the opportunity to prepare adequately to meet the educational demands, which led to the exacerbated use of the cell phone/smartphone (instead of a desktop computer or tablet), as in many cases the main electronic device not only for attending classes, but also for taking tests, recording school work and the like (Arruda, 2020). A positive factor, highlighted by the students in question (j), is that this device was entirely available to 329 (82.8%) during remote classes and other school activities.

According to question (k), the number of devices per residential unit should also be highlighted: 166 (41.8%) said there were "4 or more".

According to the answers to question (l), the majority of the public taking part in the survey followed the classes entirely synchronously - 369 (92.9%) did so live, in a hybrid format, when they would normally be at school carrying out such activities. The pedagogical proposal to maintain synchronous classes was based on the assumption that they should take place during the same period as face-to-face teaching, in an attempt to reduce

differences and maintain some of the pedagogical apparatuses that parents, teachers, managers and students were already aware of (Arruda, 2020).

Synchronous teaching, according to Medeiros (2021, p. 11):

[...] became an option for education departments and private educational institutions across the country after the critical period of the pandemic, when movements to relax the social distancing measures adopted by mayors and governors across Brazil began. This teaching methodology turned out to be an opportunity for teachers to further incorporate digital technologies as allies in the teaching-learning process.

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Synchronous and asynchronous learning styles are based on the fact that students engage with the course material simultaneously or at different times. For example, a traditional classroom lesson, in which students engage with the course material at the same time, is considered a synchronous learning method. Whereas a weekly video lecture, to be viewed by students in their free time, is an asynchronous learning method. The ways in which pedagogical approaches can be recalibrated through synchronous (or non-synchronous) classrooms have given rise to various studies, especially when trying to deal with the learning habits of so-called millennials, to try to mitigate the growing disconnection in the face-to-face classroom.

With regard to guidance beyond teachers, item (m) above, 179 (45.0%) students claimed not to have received it; while a significant proportion - 152 (38.3%) - reported having received school support from friends/classmates. Due to educational and social changes caused by social distancing, teachers' working hours have doubled (Barroso; Silva, 2022). With this, gaps emerged so that the teaching community became less present asynchronously with the students, which may have led to the absence in the reality investigated, as student Isabel (2021, online) said: "I've never felt so bad and worried in my whole life, teachers don't take it easy."

Student Lauriana (2021, online) corroborated this:

I think empathy is important! Which was a flaw at the time, teachers telling you to turn around, it's a difficult time for everyone, imagine for those suffering from anxiety? Let's think about it!

Student Justina (2021, online) sums up, in a way, the situation that many have faced:

Most of my classes are in the morning. My parents work and I have to tidy up the house and look after my brother. At first I was managing to cope well, but over time I ended up procrastinating a lot (something I had already suffered for a long time to overcome). And now I'm very sad and desperate. I'm getting poor grades and I'm afraid my parents will fight because I haven't told them what's happening to me. I'm going to ask my classmates to help me make up for lost content. That's all I can do at the moment. I hope it works out. I've never been through this before. I hope I can overcome this procrastination again.

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There was a small proportion of students who reported having received guidance from their families: 66 (16.7%). This may be directly related to the level of schooling of close relatives, factors associated with the need to earn an income during children's school hours and/or household chores (Medeiros Filho; Silva; Magalhães Junior, 2023; Souza; Silva; Cabral, 2020).

In question (n), it should be emphasized that almost 2/3 of the respondents - 293 (73.9%) - reported that their parents understood the importance of continuing their studies remotely during social isolation.

3.3 Remote learning

Remote learning can be understood as a modality in which classes and activities are carried out at a distance, usually via the internet. It has been widely adopted around the world as a way of continuing the teaching-learning process, given the reality of Covid-19 community contamination. This approach allows students to access educational content and interact with teachers and classmates, in real time or not, even if they are in different locations (Moreira; Henriques; Barros, 2020).

It is worth noting that remote education, especially in Brazil, considering the poor distribution of income, has presented challenges and limitations. Students from diverse social and personal backgrounds have found it difficult to adapt to the online format and have faced problems with connectivity or access to suitable electronic devices (Moreira; Henriques; Barros, 2020).

Below, table 3 indicates three questions relating to the evaluation and familiarity, by students from the capital of Ceará, categorized by average monthly family income, of remote learning and new technologies during the period of social isolation:

Table 3 —Remote education evaluated by high school students (Fortaleza, 2021)

Items/categories	Average monthly family income n (%)			
	Up to 1 minimum wage	From 1 to 5 minimum wages	More than 5 minimum wages	Total n (%)
o) Before social isolation, did your teachers use any electronic equipment in the classroom to teach?				
Yes, only video projectors	122 (30,8)	105 (26,4)	28 (7,0)	255 (64,2%)
Yes, computers and applications	47 (11,9)	61 (15,3)	6 (1,6)	114 (28,8%)
No	18 (4,6)	9 (2,2)	1 (0,2)	28 (7,0)
p) On a scale of 1 to 5, how important do you consider the introduction of new technologies into the education system?				
1 - no importance	2 (0,5)	2 (0,5)	1 (0,2)	5 (1,2%)
2 - not very important	9 (2,2)	3 (0,8)	0 (0,0)	12 (3,0%)
3 - reasonably important	39 (9,8)	45 (11,3)	10 (2,5)	94 (23,6%)
4 - very important	64 (16,2)	60 (15,1)	7 (1,7)	131 (33,0%)
5 - extremely important	73 (18,4)	65 (16,4)	17 (4,2)	155 (39,0%)
q) Before the pandemic, had you ever taken a remote/e-learning course?				
Yes	16 (4,0)	25 (6,3)	5 (1,2)	46 (11,5%)
No	171 (43,0)	150 (37,8)	30 (7,6)	351 (88,4%)

Source: Prepared by the authors.

According to the answers in table 3 above, question (o), there was already a familiarity with electronic and online devices in the classroom: 255 (64.2%) said that only projectors were used and 114 (28.8%) included computers and applications, amounting to 93% of respondents. However, the handling of digital communication and training tools for remote classes in Basic Education and Higher Education during the pandemic period was

reported to be difficult and unprepared by teachers and students (Souza; Silva; Cabral, 2020).

From this perspective, as indicated by question (p) above, regarding the importance of introducing new technologies into the school environment, 155 (39.0%) students rated it as "extremely important" and 131 (33.0%), "very important", totaling 72% of respondents. There is no doubt that technologies play an important role in modern education systems, as they can provide significant benefits for students, teachers and educational institutions as a whole (Araujo; Yannoulas, 2020)..

Loredano's (2021, online) understanding is no different:

Remote learning has been a step forward in the field of education. The practicality and simplicity that technology provides offers great optimism with regard to students' academic performance. The great advantage is the fact that we can learn the content in the same way as we would in person (or even better) but without wasting time waiting for buses and other transport, making our routine more economical, and making our day less stressful, apart from the fact that the internet offers various means of learning beyond what teachers teach, but also offers interactivity with the teacher, allowing even the most introverted students to express themselves better. Thank you for your attention, I really hope that remote learning stays because I'm really getting along much better with it than with face-to-face learning.I.

Student Álvaro (2021, online) agrees:

My time spent studying on my own has increased a lot and I've become more responsible. In addition, I realized how important and necessary it is to add technologies such as computers to teaching, including classroom teaching.

Last but not least, the answers to question (q) above intrigued us when 351 (88.4%) interviewees declared that they had not taken any courses in the remote/online modality before the pandemic. Student Diogo (2021, online) found this strange: "I feel like I'm doing myself a disservice because I can't keep up with the online classes, they're very boring, I feel like I'm not learning anything"

Despite the exponential growth in access to platforms and courses at large from 2020 onwards, there was already a considerable range of distance learning activities on offer before the pandemic, but they were certainly not as well known and/or used, at least by the sub oculi public.

4 Final considerations

Several studies have been carried out, in Brazil and around the world, to try to find out about impressions, opinions and processes related to the period of social isolation and, consequently, studies carried out at a distance, due to the Covid-19 pandemic. However, we don't know of any other study with a similar objective to the one presented here, with such a large sample.

The above results were certainly influenced by the unknown and new context of distance learning, during a pandemic period, with few opportunities for respondents to socialize and spend time away from home.

It was found that interactivity is important for students, despite the need to adapt to distance learning, with content preferably taught live. Video lessons in asynchronous format were not highly valued by the interviewees.

It was a difficult time for high school teachers and students. The change to online classes was sudden and demanded a lot of work from those involved. The reactions revealed above during the pandemic reflect an unhappy student body struggling with mental health issues during a once-in-a-lifetime global crisis.

Educators can, however, take note that it is possible to continue using tools and techniques for remote classes, playing a relevant role when a teacher travels, is ill or "brings in" guests who live in another part of the world, to share knowledge and experiences with students virtually.

Now that many people have overcome their reservations about the introduction and use of digital technologies in conventional education systems (due to the pandemic), it is certain that barriers have been broken down and Brazilian education must evolve and work more closely with electronic equipment and digital technology, which provides: greater access to information; personalized and innovative learning; student and teacher engagement; real-time collaboration and communication; assessment, feedback, remote access and online meetings, among many other valid and necessary options.

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