

The technological transformation of higher education in the context of the COVID-19 pandemic – Knowledge and challenges



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Ana Beatriz Carvalho de Souza

Nursing students from the Faculty of Education and Health Sciences. Brazil, Sao Paulo.

Augusto Minelli Amaral

Nursing students from the Faculty of Education and Health Sciences. Brazil, Sao Paulo.

Bianca Andriquetto Oliveira

Nursing students from the Faculty of Education and Health Sciences. Brazil, Sao Paulo.

Eduarda Tsuneme Hayashi Salomão

Nursing students from the Faculty of Education and Health Sciences. Brazil, Sao Paulo.

Barbara Barbosa

Professor of the Nursing course at the Faculty of Education and Health Sciences. Brazil, Sao Paulo.

ABSTRACT

In 2020 the first cases of COVID-19 were diagnosed in Brazil. A worldwide virus that caused a pandemic and a quarantine was established in much of the world, a way to avoid personal contact in order to control the spread. It has the objective of showing the adaptations, methods and feelings of the students and teachers adopted in this pandemic, with an integrative study methodology and virtual research, based on the last 5 years. Twenty-four articles were discussed, resulting in the adaptation of the new routine with digital platforms and interactions through video-classes, animations, among others. It was reported that the lack of a stable connection and modern devices hindered the interaction in these online classes proposed by the universities. It is possible to conclude that despite the difficulty with the adaptations, creating an educational and practical way to present the classes, with the application of assessments and interactions by various means, made that education did not suspend.

Keywords: COVID-19, Nursing, Higher education, Pandemic, Technology.

1 INTRODUCTION

Throughout our history, humanity has experienced the most diverse pandemics that have marked humanity. However, in December 2019, the first case of an infectious disease originating from the new Coronavirus (SARS-COV-2) was discovered, which would later be officially considered a pandemic in March 2020 by the World Health Organization (WHO) and would lead humanity to change the modern lifestyle.¹

In a short time, concerts, trips to the mall and even visits to parents' homes became restrained or at least mitigated to give way to quarantine. All this meant that we all had to adapt to a new reality in which many companies had to send their employees home to work from home. All these changes also had to occur in the educational field, therefore, the Ministry of Education through ordinance No. 343 of March 17, 2020 allowed the replacement of face-to-face classes with those in digital media, thus, a race began to adapt an entire education network that was mostly integrated with face-to-face



teaching to remote teaching.¹

From another perspective, teachers also had to enter this race, but they not only had to adapt to the new teaching platforms that would be introduced to them and to the students, but also to adapt all that material that they were used to working with for years to a new reality, where they would no longer have direct contact with the student.² The greatest challenge was to transform the culture of education, which, although based on new distance learning formats, blurred its traditional characteristics.²

All these adversities were even greater for the areas of study that involve practical activities, since with the persistence of the pandemic, many of them also had to be adapted.³ Thus, teachers also had the challenge of creating didactic strategies that, combined with the use of technology, brought a new way of educating, a way that even with social distancing brings students to the theme and keeps teaching pleasurable.⁴

Based on our view as undergraduates, experiencing from the 3rd to the 6th semester of higher education, we were able to witness and observe several divergences during this period considering that everything happened quickly, in a matter of months and in some cases, days, everyone had to adapt their residence to a study environment closer to the appropriate one and it is known that in all residences we have different realities. So, the students constantly experienced these events in the virtual classroom, such as: students who could not attend classes due to unfavorable socioeconomic conditions, the clear effort of teachers to maintain students' interest, the lack of spaces for study, and even mothers who had to explain to their children why even she was there at home could not give attention as he was used to.⁵

Through experiences, both her own and those of her classmates and their respective teachers, she felt the need to report the various adaptations suffered by the teaching method during these 2 years of the pandemic, as well as the different opinions that emerged in the face of these changes, such as positively and negatively, in addition to the fact that these adaptations have been observed and experienced since the beginning of the pandemic, as well as the comparison between the quality of teaching before and after the pandemic. In this context, this work will enunciate the technological adaptations and teaching methods during this period, in addition to the feeling of teachers and students in the face of all the challenges imposed by distance learning during the covid-19 period.

2 OBJECTIVE

Enunciate what adaptations and teaching methods have been established by higher education institutions to meet the academic needs of teachers and students during the COVID-19 pandemic. In addition, to highlight the feelings and challenges of educators and academics in relation to adaptations and methods during the period.



3 METHOD

The study method consists of an integrative study, with a qualitative approach in a descriptive format, carried out through a literature review, where the study was conducted.

The search period was conducted between March and April 2022. The methods used for inclusion were scientific articles published in the 5-year interval period, from 2018 to 2022, in Spanish, English and Portuguese, available in full and which allows to determine the topics related to the objective of the work. Respecting the exclusion guidelines, the criteria used were articles outside the established period, editorials with only one author, articles that did not fit the theme criterion related to the theme, articles that did not refer to undergraduate nursing students, and duplicate articles.

The descriptors used for this research were: distance learning, pandemic, covid-19, students, teachers, technology, nursing, and higher education in the pandemic, in order to discuss the subject addressed.

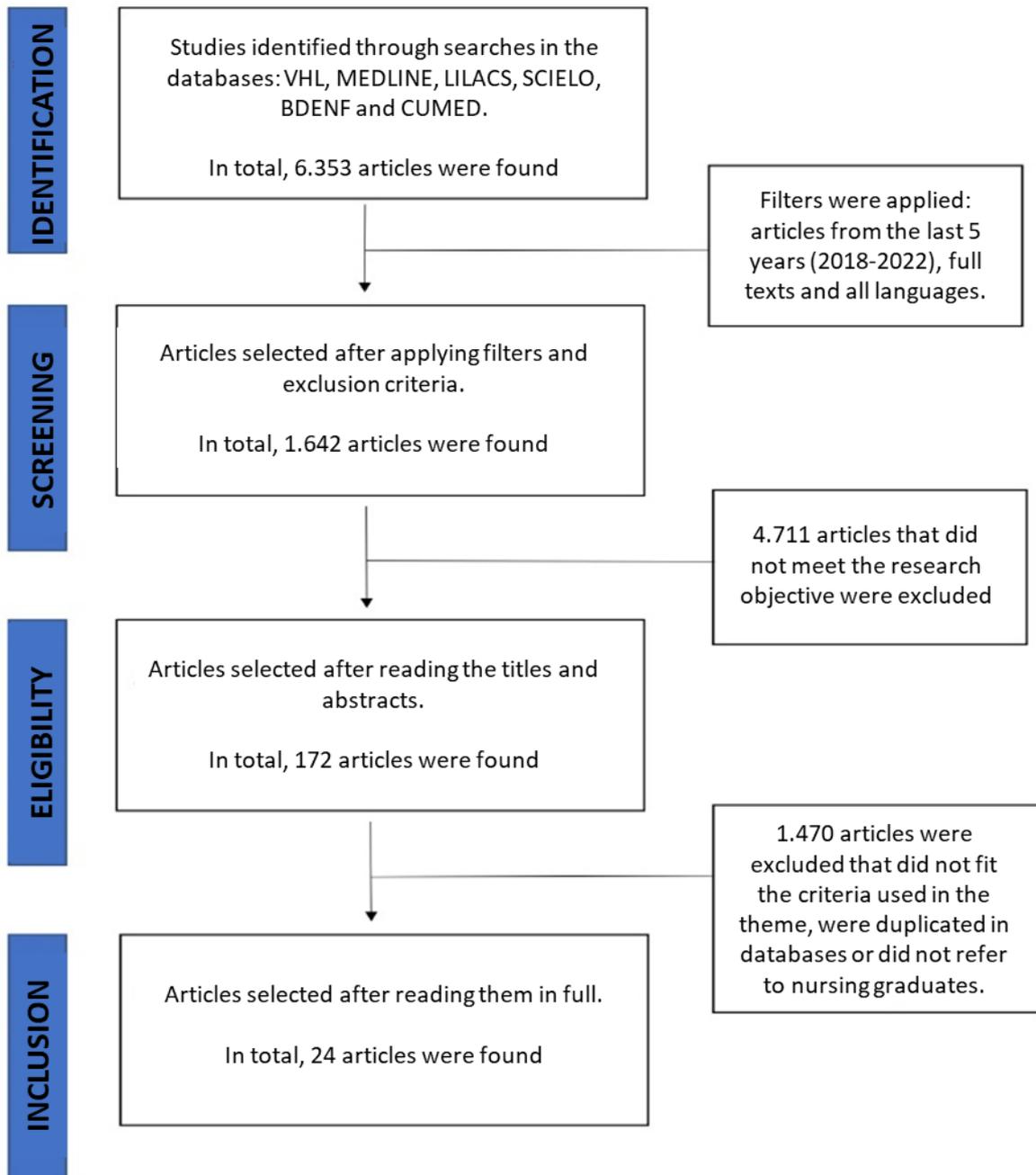
The analysis and data collection were carried out by the 4 researchers, Ana Beatriz Carvalho de Souza, Augusto Minelli Amaral, Bianca Andriguetto Oliveira and Eduarda Tsuneme Hayashi Salomão, independently and compared consecutively. Data collection was performed with a previously defined protocol, with the purpose of capturing, analyzing, organizing and compendium of information.

The resolution of the data was studied in an expository way and grouped in descriptive tables containing the summary information of the studies and quality research.



Flow chart

Figure 1 - Summary of the selection process of articles for integrative literature review. Brazil, 2022.



4 RESULTS

From the searches in the established databases, 6,353 articles were obtained. After application of the designated filters, 1,642 articles remained. Applying the exclusion and inclusion criteria defined, 172 articles were obtained. After reading them in full, 24 articles were arranged in order from the most recent to the most decrepit for the year of publication (Table 1).



Table 1 – Papers selected for analysis

Title	Authors	Year of Publication	Main Results
Perspectives of a school teacher and teacher educators teaching during the COVID-19 situation: between insiders	Kucera, Charles; Ovens, Alan; Gomes, Anne Lisa of the Vale; Bennett, Blake.	2022	The rapid migration to a virtual environment profoundly challenges educators' pedagogical praxis, technical proficiency, ability to be consistent with their beliefs, values, theoretical and practical approaches.
Professional practice environment in nursing from the perspective of students in COVID-19	Dorneles Nery, Victoria; de Oliveira Linares, Matheus; Martins, Bruna; Barros Reis, Maycon; Mayumi Yoshimura de Campos, Michelle; Taminato, Monica; Pazetto Balsanelli; Alexander.	2022	Subscale 3 "adequacy of the team and resources" was the only one with an unfavorable mean (53.49%). The variable "having worked and/or performed an extracurricular internship" was statistically significant in Subscale 2 "ability, leadership and support from nursing coordinators/supervisors to nurses/nursing staff" (p=0.003). In the general average, the students evaluated the environment as favorable (p<0.001).
Experience in remote classes in the context of the COVID-19 pandemic	Silva, Fernanda de Oliveira; Santos, Bruna Marques de Lima; Jesus, Ana Carolina dos Santos de; Silva, Joise Magarão Queiroz; Lefundes, Talita Batista; Anjos, Karla Ferraz dos.	2021	The emergency need for the use of digital technologies had implications for students, teachers and managers, even in the face of the benefits in the teaching and learning process, such as the (re)adaptation to the remote format and the incipience of training for the use of information and communication technologies.
Transition from face-to-face to remote teaching in times of COVID-19: teacher perspective	Santos, Loiane Letícia dos; Nery, Nathalia de Moraes Lebeis; Carvalho, Enderson Rodrigues de; Cecilio-Fernandes, Dario.	2021	Such reflections address the advances and challenges related to teacher development, adaptations in theoretical, theoretical-practical classes, supervised mandatory internships and student assessment in remote emergency teaching.
COVID-19: emergency remote teaching and mental health of university faculty	Maria Ricardo Félix dos Santos, Georgia; Elaine da Silva, Maria; Belmonte, Bernardo.	2021	Teachers were faced with new demands that had repercussions on their social and work routine, due to the increase in workload, rhythm and diversity of work. These



			professionals were affected in financial, affective and motivational aspects.
Developing critical thinking in nursing education: a challenge in times of the Covid-19 pandemic	Riegel, Fernando; Martini, Jussara Gue; Bresolin, Paula; Mohallem, Andrea Gomes C; Nes, Andréa Aparecida Gonçalves.	2021	This discussion categorized two reflective theoretical points: The importance of critical thinking in nursing education and innovation to stimulate critical thinking. The current moment of calamity assumes a pedagogical character because it teaches about the need for changes in the ways of providing care, management and research, as well as signaling to the field of health education the need to adapt the teaching and learning processes to the reality of the students' living conditions.
The Use of Emergency Remote Teaching During the Covid19 Pandemic: Experience of Faculty in Higher Education in Nursing	Fernandes, Sâmara Fontes; Nunes, Rafael Jeremias de Aquino; Almeida Neta, Antonia Gomes de; Menezes, Harlon França de; Melo, Kísia Cristina de Oliveira and; Freitas, Rodrigo Jacob Moreira de; Soares, hemis Cristina Mesquita; Silva, Richardson Augusto Rosendo da.	2021	Digital distance learning platforms have a range of diverse resources, are organized by defined spaces where it is possible to make video classes, teaching materials, extra activities, doubt forums, notices, schedules and follow-up notes available, in addition to the fact that some study references, activities and practical challenges are already offered to students, being a high quality material. However, they need computers and/or cell phones that support the programs and quality internet to process them.
Innovating in Times of Pandemic: Technology-Enriched Teaching Strategies for Health Sciences Students on Social Media	Rodriguez Enriquez, Carolina; Doninalli, Marián.	2021	91% of students were satisfied with the new method; 95.5% agree that the contents studied will be applied in practice; 91% agreed that the course was organized and 59% strongly agreed with all the evaluative topics.
Problem-based learning in remote teaching: nursing students' experiences in the covid-19 pandemic	Rodrigues, Paula Sales; Marin, Maria José Sanches; Souza, Aline Pereira; Grandin, Gabriela Martins; Almeida, Karina Roberta Vieira de; Oliveira,	2021	Four themes were identified in the analysis of these students' perception of the remote tutorial process: the dynamics of the remote tutorial process; the



	Carolina Saab Rocha de.		limitations imposed on activities at home; the discomforts of the pandemic and the lack of institutional resources and moments of coexistence.
The remote work of teaching nurses in times of pandemic	Araújo, Anna Raquel Lima; Sousa, Larisse Marques Costa; Carvalho, Rita Beatriz de Sousa; Oliveira, Adélia Dalva da Silva; Amorim, Fernanda Cláudia Miranda; Sousa, Kayo Henrique Jardel Feitosa; Zeitoune, Regina Célia Gollner; Damasceno, Carolinne Kilcia Carvalho Sena.	2021	Remote teaching has generated changes in routine, with the need to adapt classes to the virtual environment and home rearrangements. These aspects have been maximized by the lack of mastery over digital tools, which has increased job demands. Sometimes they felt distressed, sad, guilty, and alone because of the obstacles to establishing relationships with the students. Work overload contributed to the physical and emotional illness of the nurse professors.
Remote Emergency Teaching: A Neurophysiology Perspective	Coutinho, André Almo de Moraes; Kubrusly, Regina Célia Cussa; Borges-Martins, Vladimir Pedro Peralva.	2021	The impacts of social distancing on higher education through a neurophysiological approach, connecting stress, empathy and the historical context of emergency teaching, in addition to the tools at our disposal and the complexities of the virtual environment.
Being a nursing student in times of COVID-19	Baixinho, Cristina Lavareda; Ferreira, Óscar Ramos.	2021	5 categories emerged: difficulties experienced in integration; difficulties in the implementation of clinical teaching; influence of the pandemic on students' expectations regarding clinical teaching for integration into professional life; fears related to COVID 19 and suggestions for the training of nursing graduates, with a view to empowering them to manage pandemic situations.
Repercussions of COVID-19 and possibilities for promoting health: thinking with nursing students / Repercusiones del COVID-19 y las posibilidades de promoción la salud:	Souza, Jeane Barros de; Madureira, Valéria Faganello; Friestino, Jane Kelly Oliveira; Tombini, Larissa Hermes Thomas; Tomasi, Yana Tamara; Konrad, Angélica Zanettini.	2021	It is urgent to promote the health of students from the perspective of uncovering feelings and announcing strategies to overcome difficulties, with emphasis on the awakening of coping skills and resilience.



reflexiones junto a estudiantes de nursing			
Daily life of university students in the health area during the beginning of the Covid-19 pandemic in Brazil	Ferreira da Mata, Luciana Regina; Dias Reis Pessalacia, Juliana; Prette Kuznier, Tatiane; da Silva Neto, Priscila Kelly; de Castro Moura, Caroline; Ribeiro dos Santos, Fernando.	2021	The main changes that have occurred in the daily lives of health students are related to lower productivity; difficulty concentrating; increased hours of sleep, weight, use of electrical and electronic equipment; poorer food quality; increased consumption of food, licit and illicit substances, and medications (especially analgesics, anxiolytics, and antidepressants); less interest in personal appearance and greater contact with family members.
Experiencias docentes del uso de la tecnología educativa en el marco de la pandemia por COVID-19 / Teaching experiences with the use of educative technology in the context of the pandemic by COVID-19 / Experiências de ensino do uso de tecnologia educacional no contexto da pandemia COVID-19	Garcia-Leal, Mariel; Medrano-Rodriguez, Hernandez; Vazquez-Acevedo, Joseph Anthony; Romero-Rojas, Jose Carlos; Berrún-Castañón, Luz Natalia.	2021	The challenges identified from the teacher's perspective were categorized according to their own role, based on what they glimpsed in their students, ranging from socio-affective, technological, communication, pedagogical and academic problems.
Psychological well-being and coping in nursing students during COVID-19 quarantine	Silva, Mafalda Sofia da; Marques, Goreti Filipa; Reis, Ana Catarina; Lourenço, Tânia; Abreu-Figueiredo, Rita; Gonçalves, Maria Luísa; Santos, Maria Luisa.	2021	Students in the last years of the course more frequently use instrumental ($p = 0.015$) and emotional ($p = 0.009$) coping strategies, and also have higher levels of psychological well-being ($p = 0.012$). Changes in family income are associated with psychological well-being ($p = 0.024$), as well as coping strategies for religion ($r = 0.36$; $p \leq 0.01$), positive reinterpretation ($r = 0.47$; $p \leq 0.01$) and mood ($r = 0.37$; $p \leq 0.01$).
Emergency remote teaching in undergraduate nursing: experience report	Bastos, Milena de Carvalho; Canavarro, Danielle de Andrade;	2020	Supported by the dialogic education model, the process of emergency



on covid-19	Campos, Luana Moura; Schulz, Renata da Silva; Santos, Josely Bruce dos; Santos, Claudenice Ferreira dos.		remote teaching of classes demanded the approximation of teachers and students to virtual reality, in addition to the restructuring of the teaching strategies adopted by the faculty.
Adaptation to Higher Education, Learning Strategies and Motivation of Distance Learning Students.	Bacan, Aline Ribeiro; Martins, Gustavo Henrique; Santos, Acácia Aparecida Angeli dos.	2020	Indicators show that students have adaptive behaviors favorable to distance learning, but with nuances, such as social, age, and gender levels, showing that they impact in some way on the student's life.
Challenges of remote learning by university students in the context of Covid-19	Lima, Alisson Cunha; Freitas, Jacqueline Oliveira; Pereira, Lucas de Almeida Santos Rocha; Silva, Vanessa Gomes da; Coelho, Maíra Moreira Peixoto; Peixoto, Thais Moreira; Andrade, Juliana Nascimento; Musse, Jamilly de Oliveira.	2020	Carrying out an innovative work, focused on the initial and continuing education of students, teachers and health professionals. Changes in the flow of patients, production of booklets and articles were also developed.
The impact of the new coronavirus pandemic on the quality of life of nursing students	Ramos, Tangriane Hainiski; Pedrolo, Edivane; Santana, Leni de Lima; Ziesemer, Nadine de Biagi Souza; Haeffner, Raphael; Carvalho, Telma Pelaes de.	2020	63.6% rated their quality of life as good and 47.3% were satisfied with their health. The "Physical" item had the highest score, 67.9%, while the "Psychological" item had the lowest score, 58.2%. The "Psychological" domain was significantly affected by marital status, work, and household support.
Coping with COVID-19: what cannot be relativized in higher education in nursing	Angélica de Almeida Peres, Maria; Antônio Gomes Brandão, Marcos ; Geovana Gama de Sousa Aperibense, Pacita; Cabral de Lacerda, Alessandra; Paim, Lygia; by Assunção Ferreira, Márcia.	2020	Recently graduated nurses, in the process of accelerated training, will have few resources available for the empirical standard of knowledge, both because of the reduced framework of evidence of knowledge and because of the difficulty in dealing with mechanisms that are often unknown.
Strategies and challenges of remote teaching in Nursing	Silveira, Andressa da; Santos, Naiana Oliveira dos; Wilhelm, Laís Antunes; Soccol, Keity Laís Siepmann; Tisott, Zaira Letícia; Prates, Lisie Alende.	2020	Main challenges: difficulty in accessing the internet by students, which can lead to dropout and interfere with learning. Strategies such as the use of interactive technologies have been



			shown to facilitate remote teaching.
Strategies for the resumption of higher education in health in the face of COVID-19	Oliveira, Zulmerinda Meira; Freitas, Livia Maria Andrade de; Santos, Nilton Cesar Nogueira dos; Dias, Joana Angélica Andrade; Freitas, Maria da Conceição Andrade de; Oliveira, Tiago Meira.	2020	The first axis highlights the adoption of virtual strategies to avoid agglomerations and the risk of contamination by COVID-19; the second, the use of biosafety measures to carry out face-to-face academic activities and the third, the actions to cope with the emotional stress experienced by teachers and students in this same context.
COVID-19 pandemic and the possibilities of reframing management activities in higher education: experience report	Ferreira, Glaucirene Siebra Moura; Vasconcelos, Lourdes Claudenia Aguiar; Ferreira, Francisco Ivanildo Sales; Oliveira, Paciolo Montini Costa; Paula, Paulo Henrique Alexandre de.	2020	Stages: 1 - Scenario analysis: the understanding of the new reality was abruptly established that affected the normal development of academic activities; 2 - Planning: virtual technological resource for the definition of the necessary points that should be contemplated in the planning; 3 - Action: Adaptations of face-to-face teaching to digital platforms are promoted, we (re)build ourselves for a new way of working.

According to the year of publication, the following distribution was obtained: 2022 (2), 2021 (14) and 2020 (8). Regarding the type of publication, the following composition was acquired: Experience Report (7), Cross-Sectional Study (6), Qualitative Study (5), Theoretical-Reflective Study (3), Narrative Review (1), Bibliographic Review (1) and Self-Study (1).

In order to analyze and discuss the information obtained, the studies were grouped into categories by thematic adherence, which are: "Adaptations and Teaching Methods", "Feelings and Challenges of Teachers" and "Feelings and Challenges of Academics".

5 ADAPTATIONS AND TEACHING METHODS

On March 30, 2020, synchronous classes were started and the ability to resignify teachers, students and administrative staff gained notoriety. As the development of remote activities progressed, new demands emerged, such as carrying out assessments, internet access, weak connection, emotional aspects, among others, which generated the need to revisit the previous steps to readjust the steps.⁶ The



use of social networks in an appropriate way was a way that the course sought to promote interaction and use of more content, such as Facebook, Instagram and Twitter ⁷,

Although the access of technologies, mainly through mobile devices, for the population is becoming more accessible in general.⁶

Remote classes were the way universities adapted to transmit knowledge, despite the COVID-19 outbreak. Therefore, it was necessary to use the internet, a practical way that transmits information quickly to several people, in different places and at the same time. Remote classes take place through digital platforms, simplifying communication and dialogue between teachers and students and making the demand for face-to-face teaching sometimes dominate, whether in public or private universities.⁸ It was noticeable that during the transition from face-to-face teaching to emergency remote teaching, there were differences between public and private institutions, where the latter was more concerned with the transfer of curricular content and the public with the socioeconomic conditions of students and their families, due to access to technology.²

Currently, there is a huge diversification of digital resources, such as software that ensures greater interaction with students through games, animations, platforms for video lessons, e-books and other ways to increase knowledge and reduce the lack of a face-to-face classroom.⁹ Commitments are needed to provide quality education services, reduce suffering, exclusion and marginalization, avoid strengthening situations of vulnerability, sustain democratic processes, promote social liberation and the realization of the rights of students and teachers.¹⁰

It is noteworthy that the adoption of online strategies by HEIs goes beyond focusing on those merely related to theory. These are strategies that will also permeate other academic spaces, such as practical laboratory classes, which can be taught through video classes; conducting and prioritizing research with online data collection; virtual/online meetings of departments, areas, collegiates, extension and research projects, university higher councils and committees.¹¹

6 TEACHERS' FEELINGS AND CHALLENGES

The "new" remote teaching had a somewhat frightening austerity in the view of the teachers, where the elaboration of the disciplines and the planning had to be idealized and planned from another context and scenario. Thus, it was necessary to organize the teaching plans and lesson programs, applying the use of technology in higher education education, which required and requires educators to use current and new resources where specific knowledge for activities was essential in the virtual environment.¹²

In the context of the pandemic, the reality has greatly affected educators, increasing the possibility of stress, with the feeling of vulnerability and fear of contagion.¹³



In this context, the skillful handling of digital teaching platforms by master educators was a necessary procedure to reduce the consequences of the emergency remote teaching process, due to its application, several possibilities of interpersonal sociability, collaborative activities, development of evaluation and self-assessment practices, scope of the information chaining process, interrelating, managing and administering educationally with students shaped by the to the detriment of severe cultural and educational actions. ^{14th}

The routine of these remote classes was divided into synchronous and asynchronous pedagogical moments. Synchronous moments are video conferences through apps, which allow for real-time digital interaction. On the other hand, the asynchronous moments are the Virtual Learning Environments (VLE), which use a series of resources, such as teaching materials, extra activities, doubt forums, warnings, schedules, follow-up notes and enable spaces for sharing video classes. With the insecurity of remote classes due to Covid-19, combined with inexperience with this pedagogical strategy and the hope of resuming classes, they have generated, throughout the academic community, situations of stress, only for the theoretical moments being scheduled, since the practices have been postponed until the health situation is better controlled. ¹⁵

In the face of all these changes in routine during the Covid-19 pandemic, emotional changes have been triggered, such as anguish, anxiety, sadness, fear, loneliness, guilt, stress and loss of life, consequent to such a fatigued and continuous work process, feeling of vulnerability, fear of contagion, tiredness, difficulty sleeping, problems with blood circulation, eating and visual damage. The illness related to this damage is the work overload and the brightness of electronic devices, which are necessary for remote activities to take place. However, they have also had negative experiences and effects from remote learning, not only in itself insipidity in the use of technological tools, but also the overload at work, change of routine, lack of feedback from students, the use of the camera to capture images, insufficient devices for communication and low internet access to continue learning. ³

During the pandemic, teachers sought to improve education in this period, there were undoubtedly difficulties for both sides, but the experiences of using educational technology during the pandemic had some challenges, including: planning the teaching process, the use of media and technological resources, evaluation of the learning process, tolerance and understanding of students' needs, computer use, communication with students, and communication with parents and/or guardians. Faced with the challenges detected in the reflection on their performance, the teachers mentioned: the use of computer programs, socio-emotional development, teaching didactics, healthy living, study plans and programs, educational management and environmental education. And the challenges related to socio-affective problems were: boredom, stress, anxiety, sadness, difficulty in performing tasks, inadequate space to work at home, lack of motivation, low comprehension of the content, frustration, fatigue and loneliness. In view of the pedagogical problems, it was identified notable difficulty in the



evaluation of activities, having inadequate space to work at home and difficulty in planning activities.

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6.1 FEELINGS AND CHALLENGES OF SCHOLARS

In the current period of the COVID-19 pandemic, face-to-face classes in the undergraduate nursing modality were impacted by changes in their model in order to ensure compliance with social isolation and the needs of undergraduate students and professors regarding teaching. However, there was incapacitation on the use of the digital teaching platforms available, both for teachers and students, for the monitoring and development of distance classes, affecting the adaptation and quality of teaching during the transition, wasting precious time in the organization and implementation of classes.⁸

With classes being broadcast live they have had a tremendous significance in the development of learning, being both positive and negative. Some of these positive aspects are the monitoring of classes anywhere, whether at home or at work, and it is even possible to watch the recordings later; use of technological means for education and learning, active participation of the student⁸ and increased interactivity with the family.¹⁷ The negative points are the impediment of practical classes necessary for the course; Student Commitment; patience with the remote modality and their skill with the use of technology; difficulty accessing technological devices such as computers, poor internet connection; difficult creation of independent study routine; domestic routines that hinder the reconciliation of remote classes positively; decreased socialization that the face-to-face classroom provided,⁸ The lack of customs and sudden changes in quarantine and remote classes, many students had difficulties complying with social distancing, lower productivity, increased sleep time, greater use of technological tools, greater consumption of unhealthy foods, less care with appearance, greater consumption of alcohol and medications.¹⁷

The students exposed the difficulty or total lack of access to the library, the removal of teaching materials and the exchange of knowledge that took place in these places. At first, it was difficult to adapt to the process of remote classes, resulting in anxiety and excessive worry. However, with the passage of time, they were able to carry out the adaptation process. The distance activities allowed them to be more comfortable to communicate among the group, the circumstance that they did not need to travel from their homes to the educational institution brought a gain of precious time. Still, they justify being a disadvantage, as it is an exhausting and low-yield process.¹⁸

The adhesion of distance learning has intensified issues such as social and economic inequality in the country. The population that hardly has access to quality internet, computers, smartphones and a quiet and conducive environment for their studies, income instability, precarious housing and basic sanitation. Approximately 51.6% of Brazilians have access to the internet. The South and Southeast of Brazil have 51% of the households that have access to the internet, the Midwest 44%, the North 30%



and the Northeast 26%, proving the inequality to digital media and only a minority have full access to the internet.¹³

The students who show a favorable behavior to adapt to the distance learning modality are men, from 32 to 60 years old. It is worth noting that women show greater losses in their academic productivity and employability compared to men, due to taking care of the house and working, suffering impacts on adaptation during distance learning. It is necessary to create measures so that this specific audience can achieve their academic goals and achieve the desired training with distance learning.¹⁹

A voluntary evaluative survey was carried out at the end of the course, of teaching and work methods during the pandemic, 52% of students reported 93.2% satisfaction with the course; 95.5% of the students agreed that the method used allowed them to obtain new skills and 91% of the students expressed that the course was well headed.⁷ From the point of view of students, during the COVID-19 pandemic period, made it possible to identify favorable and unfavorable conditions for learning and teaching.¹³

Other alternatives for promoting and maintaining individual health during social isolation are self-knowledge, acts that promote relaxation, admiration of the small and simple things that life provides and that were previously unnoticed, self-confidence, closeness to the family, establishing bonds with nature and animals. During the pandemic period, university students suffered a significant increase in anxiety, stress, and depression. As a way to combat the pandemic and stimulate health for this public, physical exercises are recommended, as they benefit mental and physical health, the creation of routines, development of skills and existing practices, are healthy ways to face stress and enable physical and mental health.²⁰ Participating in social practices, performing leisure-oriented activities, and discussing tribulations, anxieties, and habitual routine with family and friends are preceptors for a better quality of life.²¹

7 DISCUSSION

Second (**Fernandes & Frison, 2015**), "Social adaptation is linked to the social integration of the student in the establishment of relationships, and the existence of a positive correlation with such social learning strategies is expected. This is due to the fact that establishing relationships with those involved (students, teachers and educational institutions) facilitates the process of learning how to learn, which implies having autonomy and responsibility with the act of studying and also regulating and planning their tasks."¹⁹

It can be seen that remote teaching has reverberated in challenges for teachers, where the problem overloads adaptations and flexibilities to the new way of teaching, which go beyond the activities and working hours of teachers, without a break for rest and availability at any time to meet



the demands of students and the institution, in addition to affective-emotional support to students, that are slowed down and full of uncertainties, which generates insecurities and doubts. Teachers maximized the need for self-care due to the pandemic, where all these situations contributed to increase complaints of symptoms, both physical and psychological.³ Previous studies suggest that awareness-raising should be an effective part of teacher qualification and an ongoing theme of educators' professional development.²²

When analyzed in detail, there is a relationship between different coping strategies and mental health. It was noticed that students who gave up easily or did not work to achieve their goals (behavioral disinvestment) were less likely to be happy. Making fun of a stressor (in this case, an epidemic) (mood) is a strategy used to build relationships with others (social competence) and increase self-esteem by promoting mental health. Planning and working hard to overcome difficulties (positive coping) are coping strategies that have been shown to be fundamental to improve students' perception of control and, consequently, their mental health. Increased participation in religious activities (religion) seems to help increase students' motivation, create goals and aspirations.²³

Teaching students to think critically, regardless of complex interprofessional practice, is one of the greatest challenges of nursing education. Growing up requires them to use professional practices, where they are without fear of evaluations and judgments. However, it is also valid to encourage them to be able to practice innovative methods and strategies, having the critical thinking of a nursing student,²⁴ where educators are critically important for the development and professional identity of students to work in different and complex health environments that are constantly changing.²⁵

A mutual collaboration of the students during the remote classes was a challenge, to research responsibly, to reach an agreement when they disagree, to plan and execute without being gathered in the same environment, common situations among nursing professionals, who need to work in interprofessional and multidisciplinary teams, in which it is impossible to choose who to work with, create care strategies, problem-solving and develop plans to achieve objectives related to the care of citizens. Health professionals need to evolve and develop their adaptation skills, creativity to solve problems, curiosity, interest, social discernment and effective communication.⁷

It is important to be aware that the best way to learn is to have direct contact with the patient and the student must always be empathetic and flexible. However, during the pandemic, the process was adapted, which It is not favorable for the intervention of the large number of students who are in the process of developing nursing practices, of which this skill is necessary for their growth and professional training.²⁶ However, it is valuable to emphasize that the true value is not only in the content, but in what is done with it.⁷



8 CONCLUSION

COVID-19 has taken a large proportion and it has been more than 2 years with the virus circulating in the country. As a result, technology has become the largest means of study and with all the adaptations that have been made, it is increasingly easier and more practical to interact through online classes. However, students and teachers miss teaching in a joint environment, within universities, in classrooms and laboratories, because despite the adaptations, the routine of attending classes at home in the long term has become boring. It can be concluded that in the face of a pandemic, adaptations occur every day and the sudden change gradually becomes the new routine of each person. In the field of health, especially nursing from the perspective of teachers and students in the context of the COVID-19 pandemic, we identified factors that were favorable and unfavorable, such as technological captures, the emotions of students and professors, the ease of improving with online courses and acquiring international knowledge, but triggered, at the same time, negative feelings such as insecurity, Fear and anxiety, in relation to practical classes, brought a certain return due to social distancing and the difficulty in maintaining focus during classes, reflecting in the return to face-to-face and in the exercise of the profession. In addition, it was necessary to have an action, an organization and strategies for the practice of the new teaching, in order to have an eminent teaching. However, this emergency scenario served to increase to the academic content of undergraduate nursing relevant themes/subjects, directed to the pandemic, but which were not studied or passed on to students, such as mechanical ventilation, team management with large embezzlements, extremely critical patient care, the importance of monitoring vital signs and, crucially, the empathy and humanization of understanding that the patient is not just a patient, He is the love of someone's life.



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