

The Impact of the Pandemic (COVID-19) on Higher Education Students: Challenges, Adaptations, and Future Perspectives

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Abstract

In January 2020, the World Health Organization (WHO) declared the outbreak of the novel coronavirus as a Public Health Emergency of International Concern (PHEIC), leading to the implementation of restrictive protective measures. Building on this issue, this article aims to analyse the impact of the COVID-19 pandemic on higher education students, addressing the challenges faced, adaptations made, and future perspectives. To achieve this, the strategies adopted by educational institutions were explored, such as the transition to remote learning, the difficulties encountered by students in this new format, and prospects, including hybrid teaching models and the importance of developing digital skills. The research employed an inductive method of historical and bibliographic procedures, collecting data from books, journals, reports, and online sources to demonstrate the relevance and urgency of understanding the pandemic's impacts on higher education students. This study is justified by the unprecedented challenges brought about by COVID-19 for higher education institutions, which had to adapt to ensure the continuity of education rapidly. Understanding the adopted strategies and the difficulties faced by students contributes to improving educational practices in the face of future disruptive events, aiming to ensure quality and accessible education for all students.

Keywords

Pandemic, Students, Higher Education, Challenges, Adaptations, Future Perspectives

1. Introduction

In December 2019, the World Health Organization (WHO) was alerted to cases widespread of the Corona Virus Disease 2019 (COVID-19) first in Wuhan City, China in December 2019, and then in the rest of the world in the early 2020s (Qureshi et al., 2020). Later, Chinese authorities confirmed the discovery of the virus, known as SARS-CoV-2, responsible for the disease COVID-19. This led the World Health Organization to declare on January 30, 2020, that the outbreak of the novel coronavirus (2019-nCoV) constituted a Public Health Emergency of International Concern (PHEIC), subsequently resulting in a global pandemic (OPAS, 2020).

The rationale for explicitly focusing on higher education students about the impact of the COVID-19 pandemic is crucial to ensure that students faced distinct challenges during the COVID-19 pandemic. They were in a crucial academic and personal development phase, which required adapting to new learning environments and navigating uncertain times. It is important to note that not all students had equal access to reliable internet, devices, and conducive study environments at home during the lockdown, exacerbating educational disparities.

In light of these facts, this study aims to analyse the impact of the COVID-19 pandemic on higher education students, seeking to understand the challenges faced, the strategies adopted, and future perspectives. It considers aspects such as the sudden shift to online learning, the transition to remote learning challenges, disruptions to coursework, socio-economic difficulties (job loss), mental health (stress, anxiety, and feelings of isolation) well-being during the pandemic, and prospects for the future.

The COVID-19 pandemic has deeply affected various sectors of society worldwide, and higher education institutions have not been an exception (Qureshi et al., 2020). This public health crisis has brought about drastic and sudden changes in academic institutions, necessitating urgent measures such as suspension of face-to-face teaching and replacement with online teaching (Qureshi et al., 2020). The primary purpose of such activities is to contain the widespread virus and ensure the safety of all involved, higher education institutions, in general.

Faced with the transition to online learning challenge was the only option during the situation's gravity because of the COVID-19 outbreak followed by lockdowns in many countries. The higher education institutions tried to adapt quickly to the new circumstances to maintain educational activities and preserve the health and well-being of students, teachers, administrators, and other professionals. This required a reassessment of teaching practices and strategies, seeking viable alternatives to continue the educational process and facilitate the same exchange of ideas and debates that in-person activities provided.

2. Methodology

This research focused on Higher Education Students: Challenges, Adaptations

during the COVID-19 pandemic and Future Perspectives. The significance of the study is to explore the Impact of the Pandemic (COVID-19) on Higher Education Students within the context of challenges and adoption, the experience and lessons learned to make guidelines for reshaping the future of higher education.

2.1. Research Questions

- 1) How does the pandemic (COVID-19) impact higher education students?
- 2) What are higher education institutions and students' main challenges during the pandemic?
- 3) How did HEIs adapt to the challenges posed by the pandemic, particularly in transitioning to remote learning?
- 4) What are future perspectives for HEIs?

2.2. Research Objectives

- To analyse the impact of the pandemic (COVID-19) on higher education students.
- To explore the main challenges higher education institutions and students faced during the pandemic.
- To identify and examine adaptive strategies implemented by HEIs during the pandemic, focusing on the transition to remote learning and mental health support.
- To anticipate future perspectives for higher education institutions.

In order to answer the above-mentioned research questions and achieve objectives, a Systematic Literature Review (SLR) was employed, as it is a common methodology in social research for integrating and synthesising existing research (Wanyama et al., 2021).

The research employed a comprehensive inductive approach, primarily relying on historical and bibliographic procedures to illustrate the critical significance of comprehending the multifaceted impacts of the COVID-19 pandemic on higher education students. This methodological choice was driven by the need for a deep and holistic understanding of this critical issue, necessitating a systematic investigation of various information sources.

Data for this research was meticulously gathered from various scholarly sources, including books, peer-reviewed journals, authoritative reports, and reputable online repositories and websites. This diversified data collection strategy was chosen to ensure that a broad spectrum of perspectives and insights could be integrated into the study, enriching its overall depth and rigour.

Historical procedures were incorporated into the research methodology to provide a contextual foundation for the study. By delving into the historical evolution of pandemics and their impact on higher education, the research was able to draw parallels and contrasts, fostering a more nuanced understanding of how the COVID-19 pandemic uniquely influenced higher education institutions

and their students.

Bibliographic procedures played a pivotal role in the research process, allowing for an exhaustive exploration of the existing literature on the subject. The extensive review of scholarly articles, reports, and publications provided a solid theoretical and empirical basis for the research, enabling the synthesis of existing knowledge and identifying gaps that warrant further investigation.

Adopting an inductive approach permitted the research to avoid preconceived notions and instead allowed the emergent themes and patterns to shape the study's findings. By amassing data from diverse sources, the research sought to offer a comprehensive, well-rounded, and evidence-based exploration of the challenges, adaptations, and future perspectives faced by higher education students during the pandemic.

In conclusion, the inductive method of historical and bibliographic procedures, coupled with the systematic collection of data from various sources, was integral to demonstrating the relevance and urgency of understanding the pandemic's impacts on higher education students. This research approach validated the topic's significance and laid a solid foundation for insightful analysis and critical discussions, underpinning the study's quest to contribute to the broader understanding of this critical issue.

Research ethics are essential in conducting a systematic literature review (SLR) as they guide gathering, analysing, interpreting and presenting data from existing studies.

Transparency and Reproducibility: We ensure the review process is transparent by keeping detailed records from search strategies to inclusion and exclusion criteria at each stage.

Inclusivity: We ensure that the review covers a wide variety of research without bias, irrespective of their findings. Avoid partiality in selecting or cherry-picking studies that only support a preconceived notion.

Respecting ethical norms is a question of morality and integrity and is essential to preserving the systematic literature review's legitimacy and dependability. Ethical guidelines guarantee that the synthesis of previous research is done with due effort and respect for both the scientific community and individual scientists.

3. Literature Review

The contemporary literature review pinpointed several challenges related to adopting online teaching. After this review, we noted that these challenges are typical, such as technological challenges (institutional ICT resources and capacity), individual challenges (know-how of technology-students and Staff members), and learning and teaching challenges (student engagement and collaborative work).

In a previous study (Kuama & Intharaksa, 2016), there were two suggestions to research further. First, the technical and individual problems that students

encounter are the main challenges in online learning, and helping students to beat these two challenges would increase their satisfaction with the new mode of learning and promote online learning motivation.

We also found that some of these challenges are very different from one institution to another due to different types of students. For example, a lack of ICT knowledge was found among students at an HEI with non-traditional students (mature students) and at an HEI with traditional students with sound ICT knowledge (Qureshi et al., 2020).

One of the main adaptations was the transition to remote learning, as in-person classes were replaced by online classes using video conferencing platforms and virtual collaboration tools. This change demanded a collective effort from teachers and students to adapt to a new teaching format, requiring adjustments to the curriculum, assessment methods, and educational technologies. The transition to remote learning brought significant challenges, especially for the students who are the focus of this research, as not everyone had equal access to the internet and suitable devices, resulting in inequalities in access to education. Moreover, social interaction and student engagement were compromised, leading to additional psychological and economic problems.

In the face of this challenging context, new perspectives emerged for higher education institutions. They started exploring and utilising educational platforms and technologies, enabling remote classes, live streaming, interaction between teachers and students through chats and forums, sharing educational materials, and conducting online assessments to ensure the continuity of academic activities and engagement even during social distancing. Additionally, educational institutions began using resources such as recorded video lessons, podcasts, and multimedia materials to enhance learning.

Although the transition to remote learning presented challenges, especially with mature students adapting to new tools and the need to ensure accessibility and quality of education, it can contribute to improving educational practices. It allows educational institutions to prepare for future challenges, ensuring quality and accessible education to all students.

Therefore, understanding the strategies adopted by higher education institutions, as well as the difficulties faced by students, is of utmost importance. It contributes to the enhancement of educational practices, preparing for future eventualities, and guiding decision-making processes to promote quality and accessible education for all students.

3.1. Impacts of the Pandemic on Higher Education

With the confirmation of thousands of diagnosed cases of the novel coronavirus and hundreds of deaths occurring in the province of China, as well as its spread to numerous other countries, the WHO declared on January 30, 2020, that the outbreak of the novel coronavirus (2019-nCoV) constituted a Public Health Emergency of International Concern (PHEIC). The spread of the disease, known as COVID-19, rapidly escalated, affecting numerous countries across dif-

ferent continents. With the rapid transmission and significant increase in cases worldwide, the Director-General of the WHO, Tedros Adhanom Ghebreyesus, made a crucial statement on March 11, 2020, officially declaring COVID-19 as a global pandemic. At the time, the Director-General stated, “There are more than 118,000 cases in 114 countries, and 4200 people have lost their lives. Thousands more are fighting for their lives in hospitals. In the days and weeks ahead, we expect to see the number of cases, the number of deaths, and the number of affected countries climb even higher” (OPAS, 2020). This declaration highlighted the severity of the situation and the comprehensive reach of the disease, requiring a coordinated and comprehensive response at the international level.

The WHO’s pandemic declaration significantly impacted the measures adopted by governments, such as public health strategies and public awareness regarding the severity of the disease. Following the WHO’s guidelines, governments worldwide implemented measures to prevent the spread of COVID-19. Depending on the epidemiological situation, with the number of cases and deaths increasing significantly, the decisions made by governments varied but generally included travel restrictions, social distancing, closure of schools and higher educational institutions, restrictions on events and public gatherings, mandatory mask-wearing, closure of non-essential businesses, remote work, and restrictions on companies, including stricter measures on movement and social activities, culminating in the initiation of lockdowns, which varied by country and region depending on the progression of the pandemic. Consequently, the COVID-19 pandemic impacted every aspect of human life (Qureshi & Khawaja, 2021).

The decision to temporarily close higher education institutions (HEIs) was motivated by the principle of safeguarding public health in a context where large gatherings of people posed serious risks due to the nature of the pandemic. In order to protect public health, some form of confinement or quarantine was decreed, and such measures were always accompanied by the closure of HEIs and, in general, all educational institutions. In Europe, the suspension of in-person activities became the norm. In the United States, major public and private universities also closed weeks before government intervention. The COVID-19 started to spread in February 2020 in the UK. Consequently, the lockdown started in the UK on 23 March 2020 with the closure of educational institutions with an unprecedented massive migration from traditional in-class face-to-face teaching to online teaching (Qureshi et al., 2020). In Latin America, confinement or quarantine measures were implemented almost immediately and, in some cases, for an extended period. As the pandemic spread, other countries took measures to suspend in-person activities for all educational institutions (UNESCO, 2020)

In this scenario of uncertainties caused by the Covid-19 pandemic, educational institutions worldwide closed for significant periods of time (Moscoviz & Evans, 2022).

In Higher Education Institutions (HEIs), students, the temporary cessation of in-person activities left them in a completely new situation, without a clear idea of how long the situation would last and how this measure would affect their daily lives, study costs, financial burdens, and, naturally, the continuity of their learning and international mobility. On the other hand, teachers were unsure about the continuity of teaching activities in the virtual mode and needed to adapt to new tools. The impacts on non-teaching staff, who represented the most vulnerable sector, included possible job reductions that, for example, private universities might have to resort to due to possible financial adversity resulting from the cancellation of fees or a reduction in student enrollments (UNESCO, 2020).

In a UNESCO report, the Deputy Director-General for Education revealed that the sector was not prepared for such a large-scale disruption. Almost overnight, schools and universities worldwide closed their doors, affecting 1.57 billion students in 191 countries. This unprecedented situation has cascading consequences in students' lives, whether studying abroad or in their own country. As a measure to contain the COVID-19 pandemic, the closures led to the rapid implementation of distance education solutions to ensure pedagogical continuity. The numerous obstacles include low connectivity and lack of online content aligned with national curricula to unprepared teachers for this "new normality". Regardless of the educational level, the main dangers are widening learning inequalities, increased marginalisation, and the impossibility for the most disadvantaged students to continue their studies. Higher education is no exception, although, at this level, digital technology has had a more significant impact in recent decades (Gianini, 2020).

Carneiro, Andrade, and Sampaio (2022) report that the impacts of the COVID-19 pandemic on higher education were many, affecting the very conception, organisation, and evaluation of teaching activities, the conduct and dissemination of scientific research, extension activities, administrative sectors of institutions, and, more broadly, the financing and governance of higher education systems. Since Higher Education Institutions (HEIs) target students, various measures have been adopted to safeguard their rights and ensure the continuity of their studies.

Countries, in terms of their political stance, tended to focus on three points, namely: 1) administrative measures to safeguard the functioning of the system, 2) financial resources, and 3) provision of resources for the continuity of educational activities (UNESCO, 2020).

UNESCO, in turn, has defined several principles, among which we highlight: 1) ensuring the right to higher education for all within a framework of equal opportunities and non-discrimination is the top priority. Therefore, all policy decisions that directly or indirectly affect the higher education sector should be guided by this right: 2) leaving no student behind, in line with the primary purpose of the United Nations Sustainable Development Goals. The crisis has different impacts on different student profiles, but it is undeniable that it deepens

existing inequalities and generates new ones; 3) minimising the vulnerability of the most disadvantaged students entering higher education; 4) preparing in advance for the resumption of face-to-face classes, avoiding haste and providing clear communication to the entire academic community and administrative and academic security, so that teachers, administrative staff, service staff, and students can be placed in the new context, knowing in advance the provisions, processes, and mechanisms designed to resume teaching activities; 5) the resumption of face-to-face activities in HEIs should be seen as an opportunity to rethink and, to the extent possible, redesign teaching and learning processes, taking advantage of the lessons that intensive use of technology may have brought, with a particular focus on equity and inclusion; 6) Governments and HEIs should generate consensus mechanisms that allow them to jointly advance in building greater resilience in the higher education sector to future crises, whatever their nature (UNESCO, 2020).

However, despite the recommendations by UNESCO, students faced a series of challenges. They had to adapt to a new reality amid the COVID-19 pandemic, forcing them into a new educational model supported by digital technologies and based on online education methodologies (Vieira & Silva, 2020). Faced with these challenges, students needed to demonstrate resilience, adaptability, and the pursuit of additional resources and support to continue their learning process in a highly disruptive environment.

3.2. Challenges and Adaptations of Students during the Pandemic Period

The impact of the COVID-19 pandemic on higher education was felt in all its dimensions, from how classes were delivered to students' access to education. In this context, higher education institutions faced unprecedented challenges, seeking to adapt to a new educational paradigm and exploring alternatives such as remote teaching, which was one of the first steps taken to maintain the quality of education and preserve the safety of the academic community. The sudden and inevitable transformation imposed by the pandemic led higher education institutions to rethink their practices and develop agile and flexible strategies to deal with emerging challenges. The need for social distancing measures and the suspension of face-to-face activities forced institutions to seek virtual solutions, such as conducting online classes, using digital learning platforms, and implementing new assessment forms (Qureshi et al., 2020; Fernández-Batanero et al., 2022). These changes directly affected students, who had to quickly adapt to a new learning environment and overcome the difficulties imposed (Vieira & Silva, 2020).

Initially, suspending academic activities was seen as a temporary measure to contain the spread of the virus and ensure the safety of the academic community. However, as the public health crisis persisted and the challenges of the pandemic intensified, institutions needed to find viable solutions to continue educational activities. Remote teaching became an alternative adopted by higher edu-

cation institutions in the face of the prolonged suspension of face-to-face classes and the uncertainties caused by the ongoing worsening of the COVID-19 disease.

In this context, the shift to remote teaching did not represent a permanent change in educational modality but rather an emergency response to the exceptional circumstances caused by the pandemic, where remote teaching became a temporary alternative until conditions allowed for the resumption of face-to-face activities.

More than an alternative, migrating their face-to-face activities to the virtual environment posed a challenge for HEIs because, unlike the Distance Education (DE) modality, which “involves planning and the use of specific management strategies that encompass aspects such as offering an appropriate informational structure, technical support to teachers and students, careful development and delivery of instructional materials to be used in classes, and their allocation in the virtual environment, as well as pedagogical support to students and ongoing technology training for teachers” (Gusso et al., 2020), the emergency remote modality resulted in “adaptations for teaching using online resources in an unplanned manner, disregarding important aspects of the reality of students and teachers, as well as pedagogical and technological aspects involved. In addition to the risks of excluding many students who do not have access to the internet, computers, and other technologies required for this mode of teaching” (Gusso et al., 2020).

Distance Education (DE) has the main characteristic of shaping the pace of learning. Therefore, distance education can benefit from asynchronous class communications, which occur without real-time interaction, allowing students to access classes regardless of time or location. On the other hand, remote teaching, presented through synchronous classes, takes place in real time but in a virtual setting. This means the teacher and the student interact simultaneously in a virtual space (Gusso et al., 2020).

The emergency modality adopted through remote teaching reflected the intention of HEIs to return to normalcy as quickly as possible, seeking to restore the traditional face-to-face educational practices that characterize the academic environment. However, it is essential to note that the duration and extent of the COVID-19 pandemic led to a revision of the initial expectations of a rapid return to normalcy in the face of the prolonged crisis.

Adapting to the digital world occurred in both public and private HEIs through video conferencing applications, social networks, and even adapting to the Distance Education (DE) modality by creating virtual learning environments. With this panorama, managers, teachers, and students were compelled to relearn how to teach and how to learn to ensure the continuity of educational activities and minimise the impacts caused by social distancing.

Amidst the challenges of implementing remote access, many concerns were felt, especially regarding students, as indicated by UNESCO data in 2020 (Figure 1).

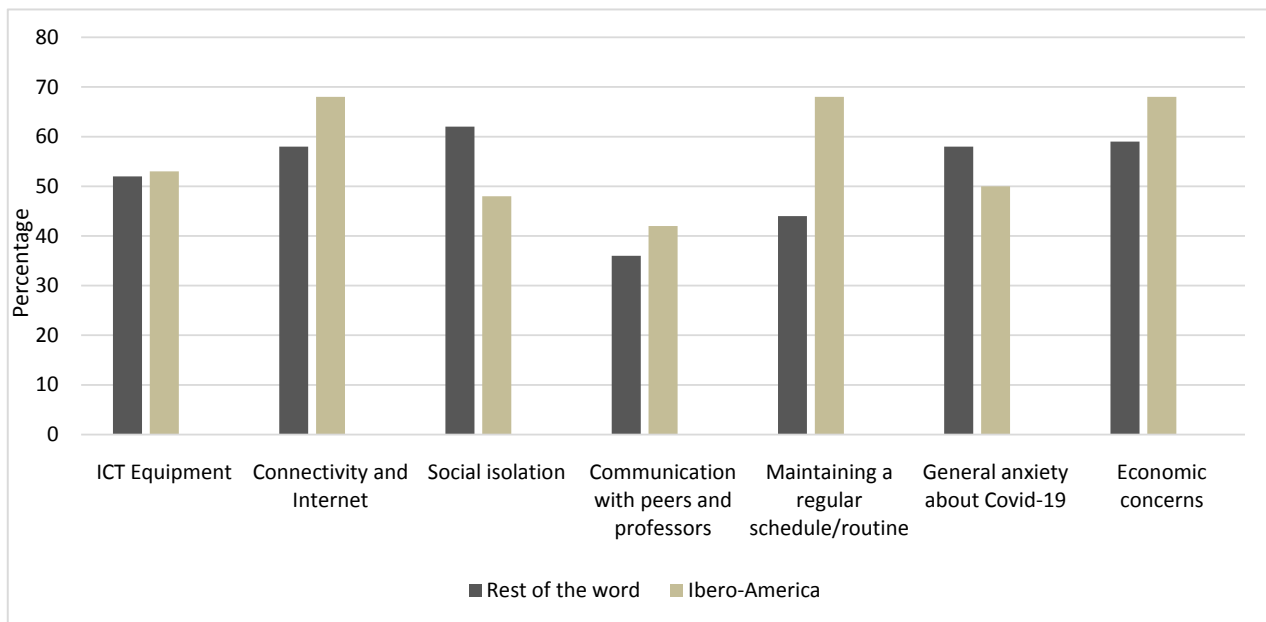


Figure 1. Key challenges faced by higher education students during the pandemic, according to UNESCO Chairs. Source: UNESCO survey conducted with UNITWIN Chairs coordinators (2020).

The results suggested that, on a global scale, the main concerns were social isolation, financial issues, internet connectivity, and overall anxiety related to the pandemic. In the Ibero-American region, however, the order of concerns is slightly different, as UNESCO Chairs coordinators prioritise three issues above others: internet connectivity, financial issues, and difficulties in maintaining a regular schedule, which is likely associated with certain forms of teaching and learning that do not promote self-regulation of learning by the educational institution (UNESCO, 2020).

One of the emerging issues was the difficulty of access to technology among higher education students worldwide, highlighting the inequality within the student population. The supposed “autonomy to study” and flexibility in knowledge construction at a distance, touted as salvation for the current situation, encountered obstacles. While some institutions quickly adopted remote teaching using online platforms and digital tools, many students faced challenges in keeping up with the learning process due to the lack of adequate technological resources (Reis, 2023).

The inequality of technology access manifested in various ways. In some regions, students did not have access to electronic devices such as computers, laptops, or tablets necessary to participate in online classes or carry out academic activities. This resulted in difficulties following the taught content, participating in virtual discussions, and submitting assignments and assessments online (Iberdrola, 2023).

This disparity in access to technology varied widely among countries and regions, where around half of the global population lacks internet access. This disparity is more pronounced in low-income countries and rural areas with li-

mitted connectivity infrastructure. It is estimated that there are 5.3 billion Internet users worldwide, but at least 2.7 billion have never had access to the Internet. This number accounts for one-third of the global population, according to data from the International Telecommunication Union—ITU in 2021 (ITU, 2022).

There are significant disparities in technology adoption among countries and regions. Developed countries generally have greater internet access and technological infrastructure, while developing countries face significant challenges in terms of access, connectivity, and technological resources.

InterNations, a social networking company for immigrants, recently released a report called “Digital Life Abroad”, which ranks countries for expatriates based on the availability of online government services, ease of obtaining a local mobile number, availability of high-speed internet at home, ease of making cashless payments, and open access to the internet. Estonia ranked first overall in the survey, given the country’s investments in infrastructure, while Finland ranked second due to the recognition of broadband access as a legal right for all citizens (BBC, 2010).

As initially shown in the graph, information and Communication Technologies (ICT) offer numerous advantages such as increased access to information, cost reduction in the labour sector, enhanced connectivity between people, and other possibilities that facilitate information and communication. However, digitization does not occur equally worldwide, and there is also an imbalance known as digital exclusion (Iberdrola, 2023).

The inequality in access to the internet and ICTs, known as digital exclusion, refers to the disparity in technology access and use based on socioeconomic factors. This divide is evident among different population groups, such as low-income individuals, rural areas, women, the elderly, and people with disabilities, who face additional barriers to accessing and utilizing digital devices and services.

According to data from the Internet World Stats portal in December 2021, digital exclusion affected 52% of women and 42% of men worldwide, and this gap has become even more prominent in regions. For example, only 43.1% of Africa’s population is connected, compared to 88.4% of Europeans and 93.4% of North Americans (Iberdrola, 2023).

The data highlights the technological divide that separates some countries from others, despite 3G and 4G networks reaching almost every corner of the planet, awaiting the massive expansion of 5G. At this point, it is important to differentiate between internet access and digital literacy, which refers to the learning process that enables individuals to acquire skills to understand and harness the educational, economic, and social potential of new technologies (Iberdrola, 2023).

The option for continuity of education solutions faced the reality of low connectivity in households worldwide in low- and middle-income countries. According to data reported by UNESCO (2020), the percentage of households with internet connection demonstrates low connectivity in the regions of Africa, Lat-

in America and the Caribbean, which barely reach 17% and 45%, respectively. In the case of Latin America and the Caribbean, this means that only one in every two households is connected (UNESCO, 2020).

As seen, the restricted availability of high-speed internet connections in some regions and the access to electronic devices necessary for participating in online activities have limited and continue to limit the ability of students worldwide to engage in remote learning and other digital activities fully.

In addition to these factors, socioeconomic inequality significantly impacted technology access during school closures. Low-income students may have faced financial difficulties in acquiring suitable electronic devices or paying for reliable internet connections. Additionally, the additional cost of internet data and the lack of access to suitable study spaces at home negatively impacted their ability to participate in remote learning fully.

These disparities in technology access have deepened educational inequality during the pandemic, where students already facing socioeconomic challenges have been further disadvantaged, with their limited access to digital resources directly affecting their academic engagement and performance.

To address this inequality, some higher education institutions have implemented measures to mitigate technological disparities. This has included loaning equipment, providing internet access in specific locations, and distributing data packages to students in vulnerable situations. However, these solutions were not always comprehensive enough to meet all students' needs.

The "social isolation" factor resulting from the COVID-19 pandemic significantly impacted students' lives, contributing to the emergence of emotional problems such as anxiety and depression. Social distancing restrictions, school closures, and the transition to remote learning substantially altered social dynamics and affected students' psychological well-being. The sudden disruption of in-person interactions and social activities, such as classroom lessons, extra-curricular activities, and gatherings with peers, resulted in feelings of loneliness and isolation. For many students, the university is not only a learning environment but also a space for socializing and building meaningful relationships. The lack of these social interactions can develop or exacerbate emotional issues (UNESCO, 2020).

Uncertainty about the future, such as the continuation of studies, internships, and career opportunities, were factors that contributed to stress and anxiety among students. Concerns about changes in employment prospects and economic instability generally affected students' confidence and psychological well-being regarding their future.

Isolation, which is inevitably associated with confinement, brought about problems related to socio-emotional balance, leaving marks, especially on students with pre-existing issues in this aspect. The most vulnerable students who participate in support programmes are affected more strongly by isolation. As an indicative example, a survey conducted in the last week of March 2020 among higher education students in the US revealed that 75% reported experiencing

anxiety and depression due to the crisis (UNESCO, 2020).

In China, a nationwide research study evaluating mental health problems and associated factors among a large sample of university students during the COVID-19 outbreak revealed that out of 821,218 participating students, 746,217 (90.9%) were included for analysis. Among them, 414,604 (55.6%) were female students. Approximately 45% of the participants reported mental health problems. Acute stress, anxiety, and depressive symptoms were prevalent during the COVID-19 pandemic. Multiple epidemics and psychosocial factors such as infected family members, massive media exposure, low social support, being in the final year of study, and pre-existing mental health issues were associated with an increased risk of mental health problems (Ma et al., 2020).

In France, a survey of 69,054 students who underwent quarantine found high rates of self-reported severe mental health symptoms. Among the identified risk factors, female or non-binary gender, income or housing problems, psychiatric follow-up history, COVID-19-compatible symptoms, social isolation, and low-quality information received were associated with altered mental health. The median (interquartile range) age was 20 (18 - 22) years. The sample consisted predominantly of women (50,251 [72.8%]) and first-year students (32,424 [47.0%]). The prevalence of suicidal thoughts, severe distress, high perceived stress level, severe depression, and high anxiety level were 11.4% (7891 students), 22.4% (15,463 students), 24.7% (17,093 students), 16.1% (11,133 students), and 27.5% (18,970 students), respectively, with 29,564 students (42.8%) reporting at least one outcome, among which 3675 (12.4%) reported consulting a healthcare professional. Among the identified risk factors, reporting at least 1 mental health outcome was associated with female gender (odds ratio [OR], 2.10; 95% CI, 2.02 - 2.19; $P < 0.001$) or non-binary gender (OR, 3.57; 95% CI, 2.99 - 4.27; $P < 0.001$), precariousness (income loss: OR, 1.28; 95% CI, 1.22 - 1.33; $P < 0.001$; low-quality housing: OR, 2.30; 95% CI, 2.06 - 2.57; $P < 0.001$), psychiatric follow-up history (OR, 3.28; 95% CI, 3.09 - 3.48; $P < 0.001$), COVID-19-compatible symptoms (OR, 1.55; 95% CI, 1.49 - 1.61; $P < 0.001$), social isolation (weak sense of integration: OR, 3.63; 95% CI, 3.35 - 3.92; $P < 0.001$; low-quality social relationships: OR, 2.62; 95% CI, 2.49 - 2.75; $P < 0.001$), and low-quality information received (OR, 1.56; 95% CI, 1.49 - 1.64; $P < 0.001$) (Wathelet et al., 2020).

In the United States of America, an online survey conducted among undergraduate and postgraduate students recruited via email at Texas A&M University resulted in alarming proportions of respondents experiencing depression, anxiety, and/or suicidal thoughts. Out of the 2031 participants, 48.14% ($n = 960$) reported moderate to severe levels of depression, 38.48% ($n = 775$) reported moderate to severe levels of anxiety, and 18.04% ($n = 366$) had suicidal thoughts. Most participants ($n = 1443$, 71.26%) indicated that their stress/anxiety levels had increased during the pandemic. Less than half of the participants ($n = 882$, 43.25%) reported being able to cope adequately with the stress related to the current situation (Wang et al., 2020).

A more recent study conducted in Greece with students from Aristotle Uni-

iversity of Thessaloniki until the end of the third year of the pandemic, i.e., November 2022, revealed that psychological distress among university students continues to increase. The results regarding the participants, who were mainly first or second-year university students, female (67%), aged 18 to 21, single (91%), and vaccinated against COVID-19 (83.4%), showed significantly elevated levels of stress, anxiety, and depression (21.3%, 23.3%, and 25.1% respectively). The levels of mild and moderate stress, anxiety, and depression were 64.0%, 66.5%, and 57.2% respectively. Female and younger students had a higher risk of highly severe stress, anxiety, and depression (ORs up to 2.07, P -values < 0.00001). Participants receiving psychological or psychiatric treatment exhibited severe stress, anxiety, and depression (ORs above 2.9, P -values < 0.00001). The research also demonstrated that the Aristotle University of Thessaloniki community had high levels of stress, anxiety, and depression, similar to those reported during the first year of the pandemic (November 2020). The stressors and risk factors were consistent with the reported literature and previous studies among Greek students (Kavvadas et al., 2023).

It is challenging to address all the research conducted involving university students. However, it is evident that students in different countries have faced psychological problems, indicating that this has been a significant challenge during and even after the end of the lockdown period.

The lack of structure and routine, difficulty in maintaining motivation, workload overload, and the need to adapt to new technologies and educational platforms were additional sources of stress for them. The abrupt transition to remote learning brought a series of obstacles, including unfamiliarity with the digital tools and resources used in the virtual environment. Furthermore, the isolation and absence of in-person interactions with teachers and peers made seeking academic support and guidance challenging. The lack of direct contact with instructors and the inability to clarify doubts immediately contributed to a less conducive academic environment for learning (Caprara & Caprara, 2022).

Another factor to consider is that many students did not have a suitable study environment at home. Not all had access to quiet spaces and adequate learning resources, impairing their ability to concentrate and absorb content. The presence of distractions and living with family members or housemates also negatively affected studying quality (Gusso et al., 2020).

Economic concerns regarding costs and financial burdens during the pandemic's social distancing measures greatly affected students because certain factors brought uncertainty about their ability to sustain themselves and continue their studies. Students, and in many cases, their families, had to bear the costs associated with their higher education. Except for a few countries where there are no charges, students were expected to continue shouldering these costs, especially when pursuing higher education required them to take up temporary, individual, or shared residence in a location different from their usual place of residence, with costs that needed to be maintained even if they decided to return to their families (UNESCO, 2020).

As a result of these concerns, a study conducted in Portugal (Iorio, Silva, & Fonseca, 2020) revealed that 61.3% of the participants in that study lived with one or more people in a rented house or apartment. In this regard, 55% believed that the crisis would affect their place of residence, primarily due to a decrease in their income. Most students did not have a scholarship and relied on financial support from their parents, other family members, or personal savings. Additionally, the already limited job opportunities were worsened by the pandemic. Therefore, it is easy to understand how financial difficulties in paying rent and/or sharing household expenses affected their living conditions. Some students argued, “It will be difficult for my parents to pay the rent; I don’t have enough money to pay my rent.” Many also mentioned that they had to return to their home countries (especially Brazil and European Union member states, with a focus on Spain).

An additional concern for the most vulnerable students who had student benefits for accommodation, meals, or transportation was related to the suspension or maintenance of their benefits while studying remotely due to the crisis. This issue depended on the ability of higher education institutions (HEIs) or funders to support the temporary closure’s economic impacts. These concerns are reflected, for example, in the fact that over 260,000 students signed a formal petition to the UK government requesting a significant portion of their tuition fees to be refunded. Students believed that the online education offered was not worth the standard tuition fees, which averaged £9250 (US\$11,500) per year. Part of the requests stemmed from the fact that many students had loans that they would continue to repay, and in many cases, they had to pay for their university accommodation room whether they remained there or not. Some HEIs, such as those in Glasgow, Scotland, announced that they would no longer charge the respective fees for students who returned their keys after the first month. Some English HEIs finally proposed that instead of refunding already paid fees, they would convert them into credits for the next academic year (UNESCO, 2020).

It is important to note that policies regarding partial tuition fee refunds during the lockdown period varied between countries and may have been implemented differently in each higher education institution.

3.3. Future Perspectives and Lasting Transformations

The events experienced have signalled that education has undergone significant transformations. The traditional format of classes, as we knew it before, will no longer have a place. The dynamics and routine of schooling were abruptly altered due to the COVID-19 pandemic, resulting in changes in the relationship between students and teachers, as well as in study dynamics and task completion, leading to a new way of conceiving education.

In the pre-pandemic era of the COVID-19 crisis, a networked society permeated by the advancement of digital technological resources and the development of telecommunications, characteristic of cyberculture, demanded educa-

tional institutions worldwide rethink their teaching and learning processes. This emerging educational paradigm implied adopting pedagogical practices that enable more innovative and dynamic processes in the relationships between teachers and students, which presupposes breaking principles, beliefs, and attitudes inherent to traditional schooling. Emerging digital technologies provide greater spatial-temporal flexibility and mobility in educational programs. Within the scope of distance education, a plurality of innovative scenarios and strategies pedagogically flexible an educational proposal in search of an education that breaks paradigms and meets the demand for innovative content for a generation of students increasingly immersed in the knowledge and information society (Vieira & Silva, 2020).

The remote teaching model, adopted on an emergency basis due to the pandemic, has brought significant challenges and has clearly exposed the existing disparities among students worldwide. However, on the other hand, it has provided students with a series of objective advantages compared to in-person education. Among these advantages, attending classes from the comfort of home stands out, eliminating costs and risks associated with commuting to the university, as well as the flexibility of schedules, which enables broader access to the job market.

In this context, it is evident that prospects for higher education students are increasingly focused on the adoption of hybrid teaching models, where the combination of in-person and virtual activities becomes essential. The COVID-19 pandemic has accelerated the digital transformation in education, highlighting the importance of developing digital skills for students.

Understanding the concepts that underpin the paradigm shift in 21st-century education is essential to guide and reflect on educational practices in the current context of pluralistic teaching. The hybrid teaching paradigm emphasises the student's participation as the central agent in their learning process. Information and Communication Technologies (ICTs) enable adaptive teaching tailored to individual student capabilities. Additionally, new methodologies of active learning, such as flipped classrooms mobile and collaborative learning, foster an interest in exploring the potential of digital technologies in education (Rocha, 2023).

Defined by the Clayton Christensen Institute in the United States, hybrid learning, also known as blended learning or simply b-learning, along with variations such as blended semi-face-to-face and flexible learning, is one of the significant trends in education in the 21st century. It promotes the end of the dichotomy between face-to-face teaching and online learning, proposing a well-planned integration of these modalities in students' teaching and learning process (Educação, 2022). In this model, education is dialectical, combining various spaces, times, activities, and methodologies with mobility and connectivity, allowing for a more open and creative learning process.

Moran (2017) emphasises that combining active and hybrid learning with

mobile technologies is influential in designing exciting ways of teaching and learning. Active learning emphasises the student's active role, their direct, participatory, and reflective involvement in all stages of the process through experimenting, designing, and creating, with guidance from the teacher. Hybrid learning highlights the flexibility, blending, and sharing of spaces, times, activities, materials, techniques, and technologies that compose this active process.

Hybrid learning is an innovation that follows a trend of changes, driven by the high demand for digital technological resources that are being integrated into society. Bacich, Neto and Trevisani (2015: p. 38) explain from the students' perspective that learning is hybrid "because it does not reduce to what we plan institutionally and intentionally. We learn through organised processes, together with open and informal processes. We learn when we are with a teacher and on our own, with colleagues, with strangers. We learn intentionally and spontaneously when we study and have fun. We learn from success and failure. Today, we have countless ways of learning". Therefore, learning is hybrid because everyone involved in the learning process is a learner and a teacher, consumers and producers of information and knowledge.

Hybrid education is not just a fusion between face-to-face and distance learning; its scope is much broader. It seeks to precisely compensate for the limitations between traditional face-to-face and online education, creating an environment where their advantages can be fully utilised (Abreu & Machado, 2022). Nevertheless, hybrid education offers several advantages for students, such as:

- Proactivity and autonomy: Students take on a more active role in learning with greater interest and seriousness. They make individual and group decisions, partially deciding when and how they want to engage with activities, content, and projects. They learn to interact both in-person and remotely, as well as work independently.
- Meaningful learning: The concept of meaningful learning beyond the classroom implies that students find a connection between the content, both in-person and online, and the world around them, encompassing both the physical and digital realms.
- Flexibility: In a hybrid activity, both in-person and online students can better manage their time since they know they can access digital content outside the classroom. Additionally, remote students can access in-person classes where they can directly consult the teacher.
- Decision-making: Hybrid students are more willing to identify when an activity needs to be done immediately or when it can be rescheduled based on their priorities. Following the Eisenhower Matrix, they can determine when something is urgent and essential or simply important but not urgent.
- Improved class utilisation: It is rare for a hybrid class to have idle time as it is pre-planned so that students can seamlessly move on to the next at the end of one activity. Moreover, the interaction between in-person and online students generates a continuous flow of new activities (Pearson, Higher Education, 2022).

With the implementation of hybrid teaching models, students can enjoy the

best of both worlds: in-person interaction and collaboration combined with the flexibility and accessibility of online education, enriching the educational experience.

The use of digital technologies in the academic context is now part of students' daily routines, providing them with quick access to a vast amount of information and transforming how they think and construct knowledge. Therefore, the new forms of learning that arise with the use of digital technologies contribute to a new way of teaching and learning in a "methodological combination that impacts the teacher's actions in teaching situations and the students' actions in learning situations" (Bacich, Neto, & Trevisani, 2015: p. 52).

It is evident that the development of digital skills becomes crucial in this context, as students need to be able to effectively use the available technologies to access content, participate in discussions, carry out online activities and projects, and quickly adapt to new digital tools and platforms. Furthermore, digital skills are increasingly valued by the job market, providing students with a competitive edge in their search for employment and career opportunities.

By acquiring digital skills, students enhance their capacity for self-management, organization, collaboration, and communication—essential competencies for success in the academic and professional world. Moreover, developing these skills prepares students for the challenges of a constantly evolving technological world, empowering them to adapt to changes and critically and creatively utilise the available digital tools.

However, this transformation process must occur gradually because in many classrooms, the main focus still remains on the teacher who, in traditional thinking, is considered the holder of knowledge and will transmit it to the students. The challenge for educational institutions is, therefore, to empower the students to find meaning in things, understand them, and contextualize them in an integrated and connected vision of their lives, unlike the traditional view of education that is confined to the classroom and does not extend learning to everyday life.

The path to paradigm shift, considering the hybrid form of teaching, is still long but should not be disregarded by educational institutions. It is important to recognize that unpredictable future developments may arise, imposing changes in the daily routines of higher education institutions and consequently affecting students. Therefore, it is crucial for educational institutions to be prepared to adapt and embrace the possibilities offered by hybrid education, promoting a flexible and innovative approach that meets the ever-evolving demands.

4. Conclusion

The COVID-19 pandemic has brought a series of challenges to higher education and, consequently, to students, especially during the lockdown period and the abrupt transition to emergency remote learning. Limited internet connectivity and lack of access to suitable devices have made it difficult for students to fully

participate in online academic activities, revealing digital disparities and exacerbating inequality in access to education.

Furthermore, social isolation has worsened the financial situation of many students, and the absence of in-person interaction has negatively affected the educational experience and academic engagement and, consequently, impacted mental health. These challenges have highlighted the need to comprehensively address students' needs to provide emotional support, resources, and strategies to promote well-being during challenging periods.

Therefore, higher education institutions need to take responsibility for addressing these challenges and ensuring equal learning opportunities for all students. Implementation of models based on the practices experienced during the COVID-19 pandemic, which foster the exchange of knowledge through innovative environments different from those transmitted and consolidated in conventional education, is crucial.

In this context, the hybrid model of teaching, which combines in-person and virtual elements, although not a new approach, should be considered as a promising perspective for addressing future disruptive events and ensuring quality and accessible education for all students. However, for the successful implementation of this model, significant investments are required in technological infrastructure, teacher training, and student support. These measures are essential to ensure that all stakeholders can adapt and make the most of the opportunities offered by hybrid education.

The hybrid model also involves improving connectivity infrastructure, providing suitable devices, and developing digital inclusion programs for those facing difficulties in accessing the necessary technologies.

In the post-pandemic context, higher education has undoubtedly learned from the crisis and must seek solutions that guarantee inclusive, flexible, and quality education in future events of this nature. This implies promoting active student participation, encouraging collaborative interaction, and providing psychosocial support to strengthen their resilience and well-being.

When facing the challenges of the pandemic, it is necessary to consider the impact on students and adopt approaches that meet their specific needs. Only then can we build a future in which higher education is genuinely accessible, equitable, and prepared to face contemporary world challenges.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Abreu, Z. H. L., & Machado, A. F. (2022). *Educação híbrida no ensino superior: Possibilidades e tendências*. Centro de Estudos de Comunicação e Sociedade (CECS) Universidade do Minho. Livro de atas do III Congresso Internacional sobre Culturas: Interfaces da Lusofonia.

- http://www.lasics.uminho.pt/ojs/index.php/cecs_ebooks/article/view/3125
- Bacich, L., Neto, A. T., & Trevisani, F. M. (2015). *Ensino híbrido: Personalização e tecnologia na educação*. Penso. BBC News. Conheça os países mais conectados do mundo. <https://www.bbc.com/portuguese/geral-48877552>
- BBC (2010). *Finland Makes Broadband a Legal Right*. <https://www.bbc.co.uk/news/10461048#:~:text=Finland%20has%20become%20the%20first,a%20100Mbps%20connection%20by%202015>
- Caprara, L., & Caprara, C. (2022). Effects of Virtual Learning Environments: A Scoping Review of Literature. *Education and Information Technologies*, 27, 3683-3722. <https://doi.org/10.1007/s10639-021-10768-w>
- Carneiro, A. M., Andrade, C. Y., & Sampaio, H. (2022). *Impactos da Pandemia de Covid-19 no Ensino Superior: Tendências e Desafios*. Caderno de pesquisa NEPP. <https://www.nepp.unicamp.br/biblioteca/periodicos/issue/view/182/CadPesqNepp92>
- Educação, S. (2022). *Principais passos para desenvolver o ensino híbrido no ensino superior*. <https://blog.saraivaeducacao.com.br/ensino-hibrido-no-ensino-superior>
- Fernández-Batanero, J., Montenegro-Rueda, M., Fernández-Cerero, J., & Pedro Tadeu, P. (2022). Online Education in Higher Education: Emerging Solutions in Crisis Times. *Heliyon*, 8, E10139. <https://doi.org/10.1016/j.heliyon.2022.e10139>
- Gianini, Stefania. Prefácio. UNESCO (2020). *COVID-19 e educação superior: Dos efeitos imediatos ao dia seguinte. Análises de impactos, respostas políticas e recomendações 13 de maio de 2020*. <https://unesdoc.unesco.org/ark:/48223/pf0000374886>
- Gusso, H. L., Archer, A. B., Luiz, F. B., Sahão, F. T., Luca, G. G., Henklain, M. H. O., Pannoss, M. G., Kienen, N., Beltramello, O., & Gonçalves, V. M. (2020). Higher Education in the Times of Pandemic: University Management Guidelines. *Debates e polémicas. Campinas*, 41, pp. 1-39. <https://doi.org/10.31234/osf.io/by5xj>
- Iberdrola (2023). *A exclusão digital no mundo e porque provoca desigualdade*. <https://www.iberdrola.com/compromisso-social/o-que-e-exclusao-digital>
- Iorio, J. C., Silva, A. V., & Fonseca, M. L. (2020). The Impact of COVID-19 on International Students in Higher Education in Portugal: A Preliminary Analysis. *Finisterra-Revista Portuguesa De Geografia*, 55, 153-161.
- ITU (2022). *ITU's "Facts and Figures 2022" Provides Latest on Global Connectivity amid Economic Downturn*. <https://www.itu.int/en/mediacentre/Pages/PR-2022-11-30-Facts-Figures-2022.aspx>
- Kavvadas, D., Kavvada, A., Karachrysafi, S., Papaliagkas, V., Chatzidimitriou, M., & Pampitsou, T. (2023). Stress, Anxiety, and Depression Levels among University Students: Three Years from the Beginning of the Pandemic. *Clinics and Practice*, 13, 596-609. <https://doi.org/10.3390/clinpract13030054>
- Kuama, S., & Intharaksa, U. (2016). Is Online Learning Suitable for All English Language Students? *PASAA: Journal of Language Teaching and Learning in Thailand*, 52, 53-82.
- Ma, Z. et al. (2020). Mental Health Problems and Correlates among 746 217 College Students during the Coronavirus Disease 2019 Outbreak in China. *Epidemiology and Psychiatric Sciences*, 29, e181. <https://doi.org/10.1017/S2045796020000931>
- Moran, J. (2017). Metodologias ativas e modelos híbridos na educação. In S. O. Yaegashi (Ed.), *Novas Tecnologias Digitais: Reflexões sobre mediação, aprendizagem e desenvolvimento* (pp. 23-35). CRV. http://www2.eca.usp.br/moran/wp-content/uploads/2018/03/Metodologias_Ativas.pdf
- Moscoviz, L., & Evans, D. (2022). *Learning Loss and Student Dropouts during the COVID-19 Pandemic: A Review of the Evidence Two Years after Schools Shut down*.

- CGD Working Paper 609, Center for Global Development.
- OPAS (2020). *Organização Pan-Americana da Saúde. OMS declara emergência de saúde pública de importância internacional por surto de novo coronavírus.*
<https://www.paho.org/pt/news/30-1-2020-who-declares-public-health-emergency-novel-coronavirus>
- Pearson, Higher Education (2022). *O que é educação híbrida e as vantagens para ensino superior.*
<https://hed.pearson.com.br/blog/higher-education/educacao-hibrida-conceito-e-vantagens-para-ensino-superior>
- Qureshi, F., & Khawaja, S. (2021). Is COVID-19 Transitioning Cash Cows International Students into Cats? *European Journal of Education Studies*, 8, 204-219.
<https://doi.org/10.46827/ejes.v8i7.3816>
- Qureshi, F., Khawaja, S., & Zia, T. (2020). Mature Undergraduate Students' Satisfaction with Online Teaching during the COVID-19. *European Journal of Education Studies*, 7, 456-475. <https://doi.org/10.46827/ejes.v7i12.3440>
- Reis, D. A. (2023). Coronavirus and Educational Inequalities: Repositioning the Debate. *Olhar de professor, Ponta Grossa*, 23. <http://www.uepg.br/olhardeprofessor>
- Rocha, L. A. (2023). *Pedagogical Practices in the Higher Teaching with Internet of Things: Methodologies, Tools and Future Perspectives.* Linguagem e Tecnologia.
<https://periodicos.ufmg.br/index.php/textolivre/article/view/38608/32367>
- UNESCO (2020). *COVID-19 Educational Disruption and Response.*
<https://en.unesco.org/covid19/educationresponse>
- Vieira, M. F., & Silva, C. M. S. da (2020). A Educação no contexto da pandemia de COVID-19: Uma revisão sistemática de literatura. *Revista Brasileira de Informática na Educação. RBIE Brazilian Journal of Computers in Education*, 28, 1013-1031.
https://repositorioaberto.uab.pt/bitstream/10400.2/10313/1/mvieira_cseco_artigo%20RBIE.pdf
- Wang, X., Hegde, S., Son, C., Keller, B., Smith, A., & Sasangohar, F (2020). Investigating Mental Health of US College Students during the COVID-19 Pandemic: Cross-Sectional Survey Study. *Journal of Medical Internet Research*, 22, e22817.
<https://doi.org/10.2196/22817>
- Wanyama, S. B., McQuaid, R. W., & Kittler, M. (2021). Where You Search Determines What You Find: The Effects of Bibliographic Databases on Systematic Reviews. *International Journal of Social Research Methodology*, 25, 409-422.
<https://doi.org/10.1080/13645579.2021.1892378>
- Wathelet, M., Duhem, S., Vaiva, G. et al. (2020). Factors Associated with Mental Health Disorders among University Students in France Confined during the COVID-19 Pandemic. *JAMA Network Open*, 3, e2025591.
<https://doi.org/10.1001/jamanetworkopen.2020.25591>