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Entry

Secondary Education and COVID-19

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Definition: Secondary education is the second stage of formal education and traditionally begins after primary school, usually about age 11 to 13. The COVID-19 pandemic caused immeasurable changes to the educational system which inevitably greatly impacted secondary education. The current entry describes the changes in secondary education imposed by the pandemic and explores the accompanying challenges.

Keywords: secondary education; COVID-19; challenges

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1. Introduction

The COVID-19 pandemic is an unprecedented crisis. What sets it apart from past health and other crises is that the SARS-CoV-2 virus, because of its high transmissibility, spread worldwide within a short period of time. As of 15 November 2021, there have been over 249 million positive cases and over 5 million deaths documented [1]. As COVID-19 was a novel virus, aside from its transmissibility, nothing was yet known regarding its effects and containment. Therefore, efforts focused on how past epidemics were combated, with social and physical distancing identified as the most successful measure [2,3]. Consequently, countries primarily employed this measure in school settings as a way to prevent the spread [4]. This ultimately led to the complete or partial closing of schools. Contrary to previous outbreaks, where education was disrupted for a short time, COVID-19 was the only pandemic that led to a large-scale and prolonged disruption of education [5].

It is worth noting how education was affected in previous crises. For instance, during the severe acute respiratory syndrome (SARS) outbreak in China in 2003, some governments chose to proceed with school closures as a way to prevent the disease from spreading. SARS's symptoms were similar to those of COVID-19, and it was identified as the first serious transmissible disease to occur in the 21st century [6]. School closures ranged from three weeks in Singapore [7] to over two months in China [8]. Other prevention measures that were applied included class cancellation strategies among upper secondary school and college students [9], mandatory temperature monitoring in primary and lower secondary schools [10,11], and suspension of other child-related activities, such as sports, to prevent large gatherings that could spread the disease [7].

In general, it was found that school closure as a prevention technique did not make a notable difference in the SARS outbreak [12]. This was the case mainly due to the low transmission rate that was reported in educational settings and the low occurrence of the infection in children [8,12,13]. The transmission of SARS among children could be accounted for primarily by households, acquaintances, and relations outside of the school setting [12]. A challenge that occurred from school closures for working parents, especially for those that were healthcare workers, was the additional childcare needs that emerged and the lack of sufficient resources to satisfy them [14,15].

Influenza A (H1N1) was another pandemic of the 21st century. Specifically, it occurred in 2009 in Mexico, and it spread worldwide, with the fatality number reaching 18,449 by August 2010 [16]. Through the outbreak, school closures in various countries lasted a month or less [17,18]. In some countries, effective alternatives to complete school closures were used. For example, restricting students in one classroom with one main teacher was found to be an effective preventive measure [19,20].

Furthermore, during the Middle East respiratory syndrome (MERS) outbreak in 2015 in South Korea, following 186 confirmed cases and 38 deaths [21], a large number of schools were closed on a national scale. However, school closures were only for 10 days as health experts considered this measure unnecessary [22,23]. Nevertheless, preventive procedures were implemented in educational settings, such as temperature monitoring, which raised concerns from educators. This was because the teachers reported that they did not have the appropriate training to handle and implement such procedures, feared the associated stigma for students that did not meet the temperature criteria, and had an increased workload [24].

Notably, the largest impact on education was experienced during the Ebola virus disease (EVD) outbreak in West Africa between the years 2014 and 2016 [25,26]. During this outbreak, the countries that were most exposed to the virus were Guinea, Liberia, and Sierra Leone, with 28,610 cases and 11,308 deaths documented [25]. In 2014, the rapid transmissibility of EVD led to school closures in the three countries that lasted seven to nine months, causing the loss of a whole academic year [27]. This resulted in serious educational setbacks caused by the expanding learning gaps. Additionally, a large increase in school dropouts was noted, especially in secondary school students from low-income households [28].

Likewise, other crises have affected the educational process. For example, earthquakes have inflicted physical damage on educational institutes, which has led to learning being disrupted and students being deprived of their educational rights. However, in many cases, the learning process was restored relatively quick with the use of remote teaching methods, such as online learning [29,30]. With human life loss and educational resources demolished, natural disasters have a negative impact on academic achievement of secondary school students and often lead to class repetition [31]. The financial loss caused by natural disasters often causes students to drop out of school and join the workforce so they can contribute to the household income [32]. Moreover, in countries prone to natural disasters, there is reduced investment in education [33], and the restoration of the educational process highlights the necessity for rapid reactions to students' needs [34].

On 11 March 2020, COVID-19 was declared a pandemic by the World Health Organization (WHO, Geneva, Switzerland) [35]. In an effort to prevent the rapid spread of the virus SARS-CoV-2 that causes COVID-19, governments suspended the normal operation of schools. From early on, China and Mongolia had taken the initiative to close schools as a preventive measure. Following the WHO's announcement proclaiming COVID-19 as a global pandemic in March, a total number of 109 countries ensued with school closures, and by April 2020, this increased to 151 countries [36]. Reports estimate that 99% of the student population was affected [37]. School closures varied from partially open to complete closure due to COVID-19. Fully closed schools included pre-primary to upper secondary level educational institutions, where at least 80% of their enrolled student population was affected. Partially open schools were of three types: (a) schools that were open for some grade levels or age groups only, (b) open in certain areas only, and (c) open with reduced in-person class time. For most countries, complete or partial school closures lasted for over 21 weeks [36]. Yet, some countries set criteria which allowed them to avoid closing all of their schools. For example, they set a cut-off for class sizes (e.g., Iceland), closed only certain levels of schools (e.g., only upper secondary schools in Sweden switched to distance learning), or reorganized their academic year to reduce the loss of instruction time (e.g., Korea, Lithuania, Australia) [38]. It is worth noting, however, that school closures do

not imply cessation of education, but rather the transformation and adaptation of the mode of teaching.

It appears that educational institutes and systems were unprepared to handle a disaster of such an extent [5]. Therefore, the unfamiliar territory in the educational context amplified the concerns of schools, educators, and students, who were called to swiftly adapt to a new reality [39].

2. Education in the Era of COVID-19

COVID-19 has been a global crisis, forcing countries to rethink how education could be accomplished despite school closures. Though the use of digital technology was not new in education, since the outbreak, it has become the primary modality. This was to ensure the continuity of education while containing the SARS-CoV-2 virus. The following section explores how education was modified during the period of the pandemic.

2.1. Distance Education

Distance education received great popularity from many countries during school closures, as a shift from face-to-face to remote teaching was emerging. Alternative education arrangements included online teaching through digital platforms, launching educational radio or television programs, and delivering learning packages with printed resources such as worksheets and textbooks to students [5]. The digital platforms enabled teachers to educate in actual time through virtual meeting programs and provided students with learning materials to utilize in their own time [40]. Furthermore, some countries were able to use pre-existing remote learning platforms that allowed students to revise the subject content from the beginning of the year by providing digital books and worksheets, and online activities [41]. Other countries such as Mexico further supported their students using television programs [42]. Nevertheless, digital platforms were most popular in developed countries, whereas other means of remote learning, such as radio and television broadcasts, were employed by developing countries.

2.2. Hybrid Learning Model

Many governments chose to re-open schools once the pandemic was in recession and the transmission risk decreased. During such times, schools further developed the hybrid approach to learning, also known as "blended learning". The hybrid method is a combination of conventional classroom-based instruction and online education [43]. In the hybrid educational approach, teachers make use of technologies designed for online teaching to enhance or substitute sections of the classroom-based instruction [44]. The instruction is provided through online platforms and in classroom, intermittently, providing the advantage of personalized teaching with the flexibility and ease of online formats [44–46]. Moreover, it offers possibilities that facilitate creativity, critical thinking, and skill development [47,48]. Even though there is limited research focusing on the effect of hybrid learning on secondary school students, it has been found to be an effective instructional method [45,49,50]. Whether used independently or combined with other teaching methods, it results in elevated student achievement [51].

In the context of the COVID-19 pandemic, hybrid education was utilized and developed further due to necessity. It was applied to avoid the congregation of large groups of students, lowering the risk of virus transmission while maintaining interactive lessons. The hybrid method combines synchronous learning such as in-person meetings through online platforms, such as Microsoft Teams, and asynchronous learning, such as assignments, pre-recorded lessons, and group projects [52]. It gives teachers the chance to provide students with reading material and enriched resources. It also affords students the freedom and flexibility to study the available material independently, and to conduct online class discussions through discussion boards [53].

The rotation model of hybrid learning has also been used during the pandemic in secondary schools. In this type of learning, teachers organized student attendance in alternation with distance learning, with different groups of students receiving classroom-based instruction on certain days of the week, and online schooling the rest [54]. In general, hybrid learning has been found to be a suitable educational approach during the COVID-19 pandemic [55]. Recent studies aimed to determine the effectiveness of the instructional modalities, with findings suggesting that the hybrid and classroom-based models offer more instructional time, cover more material, and facilitate better student achievement, as opposed to distance learning [56].

A possible disadvantage of hybrid learning is the reduced in-class instruction time, which ultimately disrupts the conventional way of teaching [40]. Validation, accreditation, and recognition of skills and knowledge produced through hybrid learning need to be integrated for hybrid education to be considered as effective and efficient as conventional modes of learning [57].

2.3. Synchronous or Asynchronous Learning

With remote education, student learning can take place in a synchronous or asynchronous setting. There is evidence of both types being used in secondary education since the start of the pandemic [58–60]. Learning in a synchronous setting involves real-time student–teacher communication. This allows for an immediate response, such as real-time lessons that take place through virtual meeting platforms and discussions in online forums, which is an advantage compared to purely online courses. A possible disadvantage of synchronous learning is its lack of flexibility [34]. On the other hand, a possible disadvantage of an asynchronous setting is that instantaneous feedback is not available, and student learning occurs independently, such as by utilizing uploaded learning material or learning through educational television or radio programs [61]. A benefit of asynchronous learning is convenience, where students can learn in a flexible manner and work at their own pace [34].

2.4. Student Assessment

Student assessment is a vital part of the educational system. It provides not only a great insight into students' progress but also feedback with regard to the teaching quality students receive, and the possible improvements that could be implemented. Assessment has also been found to impact students' motivation [62]. Because of the pandemic, the way students are assessed was impacted, with concerns raised about whether examinations are the appropriate method [63]. Currently, to our knowledge, three main approaches were used for assessing students in secondary education, namely, the cancellation of examinations, the suspension of examinations, or the transformation of examinations to an online format [64]. Moreover, a popular online learning evaluation method during the COVID-19 era was e-assessments (electronic assessments), whereby technology is used to deliver assessments and feedback through digital platforms [65].

Assessment methods have also been impacted in other ways. For instance, both in conventional and online assessments, some countries decreased the number of exams by excluding some subjects, while others reduced the learning content that students needed to cover for exams or altered the exam format by lowering the number of questions in the exam paper [64]. In addition, some schools switched to a reliable alternative to examinations [66], where students' learning was evaluated based solely on teacher assessment or teacher assessment combined with previous exam performance [64]. Lastly, there were countries which decided to assess secondary school students' learning based entirely on the feedback of homework and assignments that students completed in the current school year [67].

3. Challenges in Education during COVID-19

The sudden shift in in-person education to partly or fully remote education was challenging for teachers, students, and parents, as it required their swift adaptation. Educators were called to use alternative teaching methods that required the use of technological means, such as computers, laptops, phones, televisions, and radios, as well as digital expertise. This transitional phase has been described as a stressful period for a lot of educators [54,68]. Even though they coped with it and were able to transfer teaching to a digital form with their technological knowledge, this was not without its challenges [54]. The difficulties that arose involved the use of digital platforms, the communication with students, and the assessment and handling of students' reduced attention and understanding [54]. In this part of the paper, the challenges experienced in education are explored.

3.1. Digital Competence

Teachers' lack of digital skill and knowledge has been a main obstacle in the changes implemented in the educational system due to the COVID-19 pandemic. Information and communications technology (ICT) skills have become essential to teachers in order to cope with their new job requirements [40]. Teachers have been reporting a strong need for training in utilizing ICT for education, even before the pandemic [69]. The ICT skills in the educational setting include basic computer skills, knowledge regarding the use of computers to seek, access, and share information, and use of computers as a learning device [70]. During the COVID-19 outbreak, teachers have utilized ICT in remote learning mainly by uploading resources to online platforms [71]. There seemed to be a lack of digital knowledge among teachers, especially in education-related tools, that made the transition to technology-based remote teaching a great challenge for them [67,72].

3.2. Remote Education

The COVID-19 pandemic demanded shifting to remote or hybrid structures, with several challenges arising for students who were required to swiftly adjust to the educational changes. The first problem was students' limited skills in digital technology, since it was difficult for students who lacked those skills to be able to participate in online classes [5,73,74]. Another difficulty was the accessibility to digital devices. Without a digital device, participation in an online class for students was impractical. Another challenge was internet connectivity. On the one hand, internet access is vital for participating in online meetings, and on the other hand, good connectivity is essential for avoiding interruptions that inevitably disrupt the learning process. To prevent these challenges, students had to have access to high-speed internet connectivity and digital devices, which was a burden itself since it required financial investment [73].

Other reported challenges for students were the lack of understanding because of inadequate explanations offered by teachers, confusion with regard to the activities students were expected to complete due to the lack of teacher–student interaction, and the insufficient feedback provided by teachers. Consequently, elevated stress levels, as well as motivation decline, were experienced by students [41].

3.3. Increased Workload

In a short timeframe, the swift shift to alternative teaching methods burdened teachers with additional obligations for which they were not adequately prepared [5]. Consequently, educators' workload increased considerably [54]. The limited digital abilities of educators contributed substantially to the increased workload they reported [72]. Teachers' effort to deal with digital difficulties and simultaneously effectively educate and interact with students also led to increased stress and workloads [54].

Likewise, new challenges arose for teachers who utilized hybrid learning during this period. The demands of simultaneously interacting with classroom students and students who were virtually attending the class were an extra burden for teachers [54]. Studies showed that for educators, remote teaching caused decreased engagement with students,

since they adopted a passive teaching approach with limited interaction, increased anxiety levels, and signs of burnout [68,71].

3.4. Academic Performance

From the early stages of the COVID-19 pandemic, there have been reports of a decrease in educational engagement [68]. This could be explained by the influence of health-related and financial concerns (e.g., limited resources to cover educational needs) that led to low levels of motivation and increased levels of anxiety [5]. Since academic achievement has been repeatedly associated with student engagement [75], the observed educational disengagement during the COVID-19 pandemic is a matter of concern.

Moreover, learning losses and related declines in academic performance for secondary school students have been reported [76,77]. According to studies, the learning losses can be primarily attributed to the alternative educational methods implemented for remote learning, and the associated challenges [77]. For instance, in an analysis by Lichand and colleagues [77], it was found that learning losses could be attributed to remote learning, irrespective of other changes caused by the pandemic itself, such as the economic and health consequences. Note, however, that there are studies that provided alternate evidence with regard to students' academic performance. For example, learning loss was not observed in secondary school students in Belgium [78], and students' grades remained stable in Sweden [54]. There have also been reports that the use of alternative assessment methods increases students' scores and passing rates [64].

Furthermore, there have been reports that the physical closure of schools resulted in less time spent in learning, which affects performance and appears to lead to learning losses. For instance, Di Pietro and colleagues [79] reported the results of the School Barometer that examined the school situation in Germany, Austria, and Switzerland, between the months of March and April 2020. This survey showed that students' weekly learning decreased between 4 and 8 h during the 2020 COVID-19 lockdown, compared to when schools were open, with one in five students reporting that they were studying less than 9 h per week.

Disasters amplify social inequalities [37], and as such, it is not a surprise that there have been reports of disparities during the pandemic [5,76]. There have been reports that pandemic-related challenges led to the expansion of the achievement gap between students from low-income, middle-income, and high-income households [80]. Nevertheless, there is also contradicting evidence reporting that no such differences can be observed [81], and that social disparities are greater for primary school students [82,83].

3.5. Daily Routines

Research suggests that having a daily routine can balance the adverse effects of stress exposure during periods of crisis [84–86]. The transformation of education due to the COVID-19 crisis greatly impacted the daily routines of students, teachers, and parents alike. Students had to adapt quickly to a new unstructured daily schedule that involved coping with the requirements of online/digital education, such as attending classes from home, studying from home, being evaluated from home, and interacting with classmates and teachers from home. Because of the many and sudden changes that took place, the structure of the week was lost, and students were responsible for finding ways to organize their own time schedule and allocate their time to studying, completing other responsibilities at home, playing, and performing other activities they enjoy.

Allocating their time to fit in online learning was particularly challenging, especially for primary and young secondary school students who have not fully developed self-management and self-motivation skills [87]. The daily routines of secondary students were also affected by the lack of traditional invigilation/supervision. Learning and studying via online means were difficult since they demanded autonomous learning from students who had to reschedule their daily routines and find ways to learn and master self-control and independent work [88]. For teachers, online supervision was challenging and very

different from the supervision in a physical classroom. Likewise, for parents, the difficulty stemmed from the combination of child supervision and teleworking [88].

Developing and implementing a regular routine are also very important for students' mental health. Research has shown that, especially during times that schools are closed, the disruption of daily routines might negatively impact adolescents' mental health [89]. The high amount of time students were spending at home influenced their normal sleeping, eating, and exercising patterns [90–93]. The WHO [94], as early as 18 March 2020, published guidelines to help the public deal with the psychological distress caused by the pandemic. One guideline was directed to the carers of children, denoting the importance of stay-at-home routines and performing activities such as exercises, hobbies, and schoolwork for children who spent most of their time at home [94].

Routines also appear to be important for adolescents with prior mental health problems, risking a relapse for those who missed their regular school routines due to the closing of schools [95]. Interesting results were obtained from surveys conducted by the UK charity organization YoungMinds [93,96–98] in different time periods during the pandemic (March 2020, summer 2020, autumn 2020, and February 2021). The organization examined adolescents and young adults aged between 13 and 25 with a history of mental health needs. The results showed that many participants considered that maintaining routines, such as taking part in exercise or dance classes, was a coping strategy for managing their mental health, something that was not possible during March 2020 due to the lockdown [93]. A similar finding was also observed in the surveys that followed, with the most recent one, in February 2021, showing that 45% of participants responded that having a routine was helpful during periods of lockdown [98]. Results from March 2020 and February 2021 [93,98] also showed that spending a lot of time at home, loss of routine, and isolation can have a negative impact on their mental health. Loss of routine was considered by some participants as a negative coping strategy, leading them to overthink self-harmful behaviors [93,98].

For adolescents, peer relationships are of great importance, since they provide emotional and social support [99–101]. Not engaging with friends, and in extra-curricular activities, leads some students to experience boredom [95]. Therefore, finding ways to reform their routine and to interact with their friends, especially during periods of lockdown, was very important. Research suggests that adolescents found ways to adapt by reconstructing their routines and incorporating video calls for communicating and spending time with their friends [102].

The normal daily routines of teachers and parents were also affected due to home confinement, with a significant increase in daily stressors [92,103]. Teachers had to transform a workplace in their house for teleworking, create new teaching routines to cope with online education, combine all these with household chores, and, for those with children, find ways to manage teaching, parenting, and caregiving simultaneously. Parents faced similar problems because of the many changes in their daily routines, such as home schooling, teleworking, and caregiving [92,103].

3.6. Career-Related Plans

The COVID-19 pandemic also seems to be affecting students' future career-related plans. During this period, there has been uncertainty regarding future education and occupation, which, in turn, has led to an increased demand for career guidance, especially for high school students [104,105]. The SARS-CoV-2 virus outbreak caused changes in the job market, which, in turn, altered the attraction of various professions. This caused confusion in secondary school-age children with respect to their career orientation [105].

Moreover, secondary school students' engagement is found to predict enrollment in higher education institutes, with lower engagement being associated with a decreased possibility of registration [106]. As previously noted, during the COVID-19 pandemic, educational disengagement for secondary school students has been observed [68], and the school dropout risk has substantially risen [57,77]. This increase has been associated

with remote learning methods, student disengagement, and financial and health-related concerns [57,77]. In general, in secondary school-age children, pessimism regarding their future career seems to prevail [107].

3.7. Socio-Economic Factors

The COVID-19 pandemic has led to a global economic crisis. Unemployment and poverty rates substantially increased, and economies endured declines with limited prospects of recovery in the subsequent years [108]. The closure of entire economic sectors and the enforcement of preventive measures, such as lockdowns, have brought about a drop in worldwide economic activity [108]. Consequently, this effect on the educational system has been noted at both a country-wide and an individual level.

3.7.1. Country/System Level

Due to the aforementioned economic crisis, schools' capacity to educate effectively, as well as students' ability to learn, has been restricted. Therefore, in most countries, governments have taken steps to support alternative education, such as distance learning, and COVID-19-related modifications to the educational system. Such support measures include financial support, provision of digital equipment, and staff acquisition and training [40]. For example, in the United States, an emergency fund was initiated to support primary and secondary schools [109]. In the United Kingdom, the government financed schools to cover COVID-19-associated costs, such as added cleaning costs, and free meal arrangements for students that could not attend [110]. The government in Italy provided schools with the necessary equipment, staff, and training to facilitate distance learning and lent digital devices to students from low-income families [111]. Lastly, the government in Estonia recruited services to distribute learning materials, such as worksheets and textbooks, to students' households during physical school closures [40].

In other countries whose resources are limited to provide such large-scale support, the majority of the population does not have access to technological devices (e.g., phones, computers) to deliver or receive education through online platforms. Therefore, in such cases, governments utilized different strategies, such as launching educational television and radio programs [108].

3.7.2. Individual Level

The catastrophe experienced by the global economy caused by the pandemic has also affected the population at an individual level. The increased unemployment and poverty rates are of concern to both parents and students [112]. Remote learning has proven to be a challenging education alternative for many families, especially those coming from low-income households [113–115]. In particular, a major challenge for students from low-income families is the limited access they have to digital devices and connectivity [5,80], which, as stated earlier, are essential elements for remote education.

Moreover, studies indicate that there is an increase in parental worry regarding children's academic performance in families with a lower income [116]. In many cases, students need further instruction, and parents need to assist them with their academic obligations. This poses a challenge, especially for working parents with low levels of education [113]. Generally, it appears that students who come from low-income families have a higher need for additional education-related resources and instruction [116]. Consequently, during the pandemic, the inequality gap in educational opportunity and achievement has expanded [5,80].

4. Psychological Insights

Populations' mental health has been greatly affected because of the pandemic. Numerous studies documented increases in anxiety, depression, and stress symptoms in the general population since COVID-19 spread worldwide [117–122]. In line with pre-pandemic research, it appears that younger people and people with a history of mental health problems are those who are at greater risk [117,123]. It is well documented that periods of extreme situations, such as quarantine and social isolation, negatively impact people [124,125]. Therefore, it is not a surprise that during the pandemic, studies related social isolation to symptoms of depression and anxiety [124]. In addition, since the start of the outbreak, there have been increased cases of suicidal attempts [126,127], which appears to be associated with the limited social contact and feelings of loneliness the population is experiencing [128]. This section explores how the mental health of secondary school students, parents, and educators has been affected during the pandemic.

4.1. Mental Health of Students

Among those who were significantly impacted during the COVID-19 outbreak were primary school-age and secondary school-age children, who had to face great adjustments with regard to their learning. This had led to the development or enhancement of emotional difficulties, and a decrease in their overall well-being [117]. Specifically, an increase in anxiety and depression symptomatology has been found in secondary school-age children [101,129–131]. This contributes to the decline noted in their school-related motivation and might explain the lower student engagement levels observed [68]. In addition, traumatic stress symptoms, as well as increased anger, have also been observed during the pandemic period [124]. There are many factors that could explain the emotional difficulties and the decrease in the well-being of students due to the closures and uncertainty surrounding the pandemic. Some attributable factors include self-isolation, limited social interactions and peer experiences, loss of daily routine, boredom, uncertainty for the future, economic concerns, disease-related fear, family stress, lack of physical activity, lack of resources, and disease-associated stigma [93,95–98,117,124].

Importantly, more attention needs to be placed on student mental health problems, since they interfere with critical elements for academic success, such as memory, concentration, and motivation [132]. This is in accordance with pre-pandemic research reporting that anxiety and depression negatively impact student learning and academic performance [133], such as difficulty in concentrating and carrying out school-related activities [134]. The possible impact of the reported psychological problems arising since the start of the outbreak can already be seen from the documented motivation, engagement, and learning losses [68,76,77]. Lastly, mental health difficulties could also explain the increase in education losses which, in turn, might lead to lower enrollment in higher educational institutions.

4.2. Mental Health of Parents

The mental health of parents has also been affected during this period. Studies showed that life adjustments and COVID-related challenges led to anxiety and depression in parents [117,119,120]. Economic concerns, role variations, health and safety worries, and loss of daily routines have been found to be related to an increase in anxiety and fatigue levels [117,118,122]. With the introduction of alternative learning methods, parents had to adopt the role of supplementary teacher, which was found to be associated with elevated psychological distress and anxiety for parents of primary and secondary school students [116,135]. Furthermore, stressors such as financial concerns and social isolation impacted family relations [136], which increases the likelihood of child abuse [137]. Conflicts within the family appear to impact the mental health of parents. For instance, in a study that examined the mental health of parents of primary, secondary, and tertiary students in China, Wu et al. [116] found that compared to harmonious families, parents with family conflicts had higher levels of depression, anxiety, and stress. It is worth noting that maladaptive family functioning has also been found to be related to the development

of psychological problems in secondary school-age children [138]. Lastly, in line with findings from previous pandemics, such as H1N1, pandemic-related stress experienced by parents was identified as a contributing factor to the increase in children's mental health problems [139,140]. Highly anxious parents may overestimate the danger of external factors and, as such, act with hypervigilance and overprotection in many cases. This, in turn, facilitates worry and anxious responses from their children [141].

4.3. Mental Health of Educators

Amongst the many changes that took place during the outbreak of the pandemic were work-related adjustments that educators had to make. With remote teaching being introduced, educators were forced to immediately adapt to the new system [5]. The alternative teaching methods placed extra pressure on educators, generated more work-related obligations, and increased their workload [54]. In concordance with previous findings, technology use and technical competence caused higher levels of stress in educators [54,72,142]. Importantly, studies found signs of burnout (e.g., fatigue) in educators [68,71,143], which, according to research, could be attributed to teleworking [144]. Accordingly, work-related stress during teleworking seems to be higher for educators with children [144]. Moreover, during this period, there have been indications of a decline in educators' quality of life [145], as well as signs of depressive symptoms [146]. Worth noting, however, is the finding that during distance education, there has been a decline in educators' anxiety that is related to classroom-based student management. These mental health difficulties experienced by educators are important as they influence educators' engagement in the classroom, due to the more passive teaching approach [68,71].

5. A Positive Viewpoint?

Emergencies can create a setting where modifications to practices are more easily obtained and are applied in an accelerated pace [34]. With the challenges and ambivalence surrounding the pandemic, it is often difficult to consider a positive effect of such situations. Nonetheless, research shows that some pandemic-related changes to education have proven to be beneficial in the long run regardless of socio-economic status. As reviewed before, countries, regardless of their socio-economic status, took initiatives to adapt to the physical school closures and continued to provide education to students [40,42,110,111]. The following are some of the positive effects that have been found.

5.1. Educational System Evolvement

The outbreak crisis made the value of schools and educators evident [5] and acted as an opportunity to reconsider the future of education [54]. Regardless of the initial hesitancy of educational organizations concerning the transition from conventional teaching methods to remote learning, many benefits were identified. These include overall flexibility as it is student centered, time and location flexibility, variety in material and lesson format [147], greater accessibility [148], improvement in communication and interaction between student and educator through the use of tools such as videoconferences, email, chats, and forums [149,150], and adapted lessons based on the learning objectives and the needs of the learner [151]. E-learning allows plan flexibility, and students can adopt their own pace of learning, which subsequently decreases school-related anxiety and facilitates skill development [73]. Accordingly, the pandemic positively impacted the attitudes of teachers and students regarding distance education and promoted the development of various approaches and skills [104].

5.2. Skill Development

In general, the educational challenges that emerged from physical school closures and alternative learning methods facilitated various skills in students and teachers. For instance, it has been documented that in the context of hybrid learning, student critical thinking flourished [53,73]. Moreover, education outside of the school environment offered the opportunity for independence to be developed in students, allowing self-reflection and focus outside of peer influence and pressure [152]. The unconventional educational methods enabled innovation and creativity in both educators and students [153], possibly due to the exploration of new learning methodologies in a different educational context [154]. Creativity is considered a vital ability in students [155] and has played a key role in managing the pandemic-related difficulties [156]. Lastly, research has shown that the greater the creativity demonstrated by students, the less anxiety they experienced [154].

5.3. Benefit to Relationships

Since the start of the pandemic, the nature of many relationships has changed. Part of this could be because it mobilized people to reconsider their life, to set priorities, and to recognize or re-evaluate their values. However, most of the changes can be attributed to the pandemic-related impacts, such as physical school closure, social isolation, and alternative educational practices. For example, the parent–child daily interaction time has increased since the start of the outbreak [157,158], which has provided the opportunity for quality face-to-face interaction [158]. The quality of the parent–child relationship is significant since it can act as a protective factor of emotional difficulties experienced by secondary school-age children during the pandemic [159]. Furthermore, the increased parental participation in the educational process (e.g., remote learning, aiding in arising learning challenges) can improve the parent–child relationship [5].

The collaboration between teachers and parents to ensure that students receive the best possible education with the new mode of teaching improved the parent–teacher relationship [28]. Moreover, teacher–student relationships were modified, since the health crisis pushed teachers towards an approach with more emphasis on student well-being [160]. For instance, an increase in teacher support and reassurance was documented during the virus outbreak [161]. Therefore, this could further facilitate student adjustment, well-being, and academic achievement [162,163]. According to Chamizo-Nieto and colleagues [163], it would be interesting to examine whether this will last in the post-COVID-19 period.

6. Concluding Remarks

The COVID-19 pandemic forced numerous changes to education. Those who were mostly impacted by these changes were educators and students, who had to quickly adapt to the new reality. The adaptation to remote formats of learning, physical school closures, and the implementation of social and physical distance measures restricted the regular learning process. Although technology is not new in educational settings, the pandemic forced learning to become fully digitalized. This caused more challenges for everyone involved in secondary education. This entry described the alterations that took place, the challenges that arose, and the impact on students', parents', and educators' mental health and ended with some positive outcomes that surfaced because of the new way of learning. The pandemic is not over yet, and therefore the educational system is still in constant alert. However, as compared to the start of the pandemic outbreak, the educational system is now more prepared to combat the challenges, but there are still unknown paths yet to be discovered.

Specifically, the main conclusions of this entry are the following:

- The pandemic resulted in educational changes and disrupted the regular learning process.
- The mode of teaching became primarily digitized/virtual to reduce the transmissibility of the virus which affected all parties involved (students, teachers, parents).

- Several challenges for students, teachers, and parents emerged. These included the use of digital platforms and digital competence, increased workload, the loss of daily routines, changes in career-related plans, and socio-economic impacts.
- The new mode of learning impacted students', teachers', and parents' mental health.
- Possible beneficial changes due to the pandemic, such as the evolvement of the educational system and skill development, were discussed. However, the long-term effects are still unknown.
- The educational system adapted to the several challenges that arose due to the pandemic. However, since the pandemic is ongoing, any accompanying current and unforeseen challenges will need to be addressed, with special attention given to the impact on all parties involved (students, educators, and parents).

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