International Journal of Applied Science and Engineering
Citation: *IJASE*: **12**(01): 93-106, June 2024
DOI: 10.30954/2322-0465.1.2024.8

CASE STUDY

INFORMATION SCIENCE

Leveraging Information Technology in Education: Insights from the Jamaican Context During the COVID-19 Pandemic

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Received: 23 Mar., 2024 **Revised:** 20 May., 2024 **Accepted:** 01 Jun., 2024

ABSTRACT

This article examines the integration of information technology (IT) in education in the Jamaican context during the COVID-19 pandemic and highlights the crisis that has accelerated the need for digital solutions. It discusses how the pandemic exposed and reinforced existing problems, such as structural inequalities, limited digital resources, and economic disparities, especially as they affect students from marginalised communities. This study shows the important role of ICT in changing the educational landscape, enabling access to interactive and self-directed learning across geographic and economic boundaries. Despite these advances, this paper identifies major barriers such as the digital divide, the cost of technology and literacy that hinder the implementation of IT solutions in education. Through a detailed analysis of Jamaica's education environment during the pandemic, the paper illustrates both innovative responses to these challenges and the critical areas needing attention to promote equitable and inclusive education. Finally, this article highlights the need for continued innovation and investment in IT to prepare education systems for future challenges to ensure no student is left behind.

Keywords: ICT in Education, Digital Divide, COVID-19 pandemic, Psychosocial Impact, Socio-economic contions, Literacy, Digital Literacy, Jamaica

In recent years, information technology (IT) has revolutionised educational practices, offering unparalleled opportunities for both educators and learners. Technology integration in education has transformed traditional classrooms into dynamic learning environments where students can engage with interactive content, collaborate with peers globally, and access vast knowledge repositories at their fingertips (Lindsay, 2016; Paul, P. K., *et al.* 2012).). The COVID-19 pandemic, however, has accelerated technology adoption in education out of necessity rather than choice (Kang, 2021). With the sudden onset of widespread school closures and social distancing measures, educational institutions worldwide were forced to pivot

How to cite this article: Virgo, A.N. (2024). Leveraging Information Technology in Education: Insights from the Jamaican Context During the COVID-19 Pandemic. *IJASE.,* **12**(01): 93-106.

Source of Support: None; **Conflict of Interest:** None

to remote and online learning modalities virtually overnight. In this rapidly evolving landscape, the role of information technology in education has become more critical than ever before.

The impact of the COVID-19 pandemic on education has been particularly profound in countries like Jamaica, where the sudden shift to remote learning exacerbated existing challenges in the education sector (Borgen, 2023). Like many developing nations, Jamaica grapples with systemic issues such as inadequate infrastructure, limited access to digital resources, and socio-economic disparities that impede equitable educational opportunities (UNICEF, 2020). The pandemic laid bare these disparities as students from marginalised communities faced heightened barriers to accessing quality education in a remote learning environment. Consequently, educators and policymakers in Jamaica were compelled to confront these challenges head-on and explore innovative solutions to ensure learning continuity amidst unprecedented disruption (Vision 2030 Jamaica, n.d).

Against this backdrop, this article aims to examine the role of information technology in education, with a specific focus on the Jamaican context during the COVID-19 pandemic. By delving into the challenges faced by the education sector in Jamaica and the innovative applications of IT to address these challenges, this study seeks to shed light on the potential of technology to facilitate inclusive and equitable education, even in the face of adversity.

The integration of information technology in education offers many benefits that extend beyond the confines of traditional classrooms (Haleem et al., 2022). From online learning platforms and virtual classrooms to interactive educational apps and digital resources, technology has the power to personalise learning experiences, cater to diverse learning styles, and empower students to take ownership of their education (Popa, 2022). Moreover, technology enables educators to transcend geographical boundaries and connect with learners across vast distances, fostering global collaboration and cultural exchange (Lindsay, 2016). In essence, information technology has the potential to democratise education, making quality learning experiences accessible to everyone, no matter their geographical location or socio-economic status.

However, the widespread adoption of technology in education is not without its challenges, particularly in contexts like Jamaica, where infrastructure and resource constraints pose significant barriers. The digital divide, characterised by disparities in access to technology and internet connectivity, exacerbates existing inequities in educational access and quality (Borgen, 2023). In Jamaica, rural and underserved communities bear the brunt of this divide, as limited access to reliable internet infrastructure hampers their ability to participate fully in remote learning initiatives (UNICEF 2020). Additionally, issues such as device availability, digital literacy, and the affordability of data packages further compound the challenges that both students and educators face including other socio-economical issues (Paul, P., Aithal, P.S., Sharma, S. & Saavedra, R. 2023).

The COVID-19 pandemic catalysed innovation in the education sector, prompting educators, policymakers, and stakeholders in Jamaica to explore novel ways of leveraging technology to overcome these barriers (Kemp, 2022). From the rapid deployment of online learning platforms to the creative use of mobile technology for educational content delivery, Jamaican educators demonstrated resilience and adaptability in the face of adversity (Borgen, 2023). Community-driven initiatives, public-private partnerships, and government interventions played a pivotal role in bridging the digital divide and attempting to ensure that no student was left behind in the transition to remote learning (Roofe, 2021).

In the subsequent sections of this article, we will look further into the specific challenges faced by the education sector in Jamaica during the COVID-19 pandemic, examine the innovative applications of information technology in education, and explore lessons learned and future directions for leveraging technology to promote inclusive and equitable education in Jamaica and beyond. By critically analysing the Jamaican experience, this study aims to contribute to the broader discourse on the intersection of information technology and education, offering insights into how technology can be harnessed to address the evolving needs of learners in an increasingly digital world.

OBJECTIVE

This chapter intends to evaluate and document the integration and impact of information technology (IT) on education in Jamaica during the COVID-19 pandemic. This involves analysing how the crisis has expedited the adoption of digital solutions and the ensuing challenges and disparities that have surfaced. Among other things, the paper aims to:

1. Assess the role of IT in the transition to distance learning during the pandemic.
2. Identify the barriers such as digital divide and resource limitations that hinder effective implementation of IT solutions.
3. Explore innovative IT applications that were adopted during the pandemic.
4. Discuss the impact of these technological interventions on educational equity and accessibility.
5. Recommend strategies to sustain and expand IT integration in education to improve resilience and inclusion.
6. Highlight the necessity for ongoing innovation and investment in IT to prepare for future educational challenges and ensure that no student is left behind.

The Role of Information Technology in Education

According to ND Century Code (Chapter 54.59.01), *"Information Technology means the use of hardware, software, services, and supporting infrastructure to manage and deliver information using voice, data, and video."*

Information technology (IT) plays a pivotal role in modern educational practices, offering many benefits that enhance teaching and learning experiences. By integrating technology into educational settings, educators can create dynamic and engaging learning environments that meet students' diverse needs and preferences (Lindsay, 2016). This section will analyse the multifaceted role of information technology in education, highlighting its transformative impact on teaching methodologies, learning outcomes, and educational access.

Information technology provides students and educators access to vast digital resources, including e-books, online journals, multimedia content, and educational websites. These resources transcend the limitations of traditional textbooks and library materials, offering up-to-date information and interactive learning experiences (Haleem *et al.* 2022). These resources encompass various formats, including e-books, online journals, multimedia content, educational websites, and digital libraries, offering up-to-date information and interactive learning experiences. Moreover, digital resources can be easily accessed from any location with an internet connection, facilitating learning opportunities anytime and anywhere.

Let us delve deeper into how information technology enhances access to resources, drawing examples from actual school reports.

In a report from St. George's College, a prominent secondary school in Kingston, Jamaica, the implementation of e-books and digital libraries significantly expanded access to resources for students and educators (Johnson, 2023). With the adoption of e-books, students no longer had to rely solely on printed textbooks, which were often in limited supply and quickly outdated. Instead, they could access a comprehensive collection of digital textbooks and reference materials from their devices, ensuring equitable access to up-to-date content regardless of their geographical location or socio-economic background (Johnson, 2023). Additionally, the introduction of digital libraries provided students with access to a massive collection of scholarly articles, research papers, and multimedia resources, empowering them to explore diverse topics and conduct independent research beyond the confines of the classroom (Johnson, 2023).

At Mona Heights Primary School in Kingston, Jamaica, the integration of multimedia content and interactive learning resources transformed traditional lessons into engaging and interactive experiences (Samuels, 2022). Teachers utilised educational websites, interactive simulations, and multimedia presentations to supplement classroom instruction and reinforce key concepts. For example, in a science lesson on the solar system, students could explore virtual planetariums, watch interactive videos of planetary motion, and participate in virtual experiments to deepen their understanding of celestial phenomena. By incorporating multimedia content and interactive resources into their teaching practices, educators at Mona Heights Primary School catered to diverse learning styles, engaged students with visual and auditory stimuli, and promoted active learning and exploration (Samuels, 2022).

Through the adoption of digital resources, schools can ensure equitable access to up-to-date content, promote independent inquiry and critical thinking skills, and create engaging and interactive learning environments conducive to student success (Haleem *et al.* 2022).

Technology, including latest technologies enables educators to adopt personalised learning approaches that address students' individual needs and varying learning styles (Paul, P.K., 2022; Paul, P.K., 2024a; Paul, P.K. 2024b). Adaptive learning platforms use data analytics and machine learning algorithms to assess students' strengths and weaknesses, providing customised learning pathways and targeted interventions (Purdue University Online, n.d). This personalised approach fosters student engagement and motivation, as learners are empowered to progress at their own pace and focus on areas where they need additional support (Kayyali, 2024).

Information technology facilitates collaboration and communication among students and educators, regardless of geographical boundaries (Haleem *et al.* 2022). Online collaboration tools, such as discussion forums, video conferencing platforms, and collaborative document editors, enable students to engage in group projects, peer reviews, and real-time discussions (Kayyali, 2024). These collaborative learning experiences promote teamwork, critical thinking, and communication skills, preparing students for success in an interconnected world.

Technology enables the creation of interactive and multimedia-rich instructional materials that captivate students' attention and enhance their understanding of complex concepts (Kemp, 2022). Interactive

simulations, virtual laboratories, and gamified learning activities provide hands-on learning experiences that stimulate curiosity and creativity (Kayyali, 2024). Additionally, multimedia presentations, podcasts, and video lectures offer alternative modes of content delivery that cater to diverse learning preferences and modalities.

Information technology facilitates global connectivity and cultural exchange by connecting students and educators from diverse backgrounds and geographical locations (Lindsay, 2016). Virtual exchange programs, online language exchanges, and collaborative projects with international counterparts enable students to broaden their perspectives, develop intercultural competencies, and cultivate empathy and understanding of different cultures and perspectives (Lindsay, 2016).

Information technology has transformed education by enhancing access to resources, personalising learning experiences, fostering collaboration, enabling interactive instruction, and facilitating global connectivity (Kemp, 2022). As technology evolves, educators must harness its potential to innovate teaching methodologies, address educational disparities, and prepare students for success in the digital age. By leveraging information technology effectively, educators can create inclusive and equitable learning environments that empower all students to achieve their full potential (Purdue University Online, n.d).

Integration Challenges Faced by Jamaica and Jamaican Schools During COVID-19

The transition to remote learning in Jamaica due to the COVID-19 pandemic was a significant challenge for both students and educators. With approximately 31,656 teachers and 627,000 students affected, the sudden shift from traditional classrooms to virtual environments profoundly disrupted the education system (UNICEF, 2020).

One of the primary challenges faced during this transition was the digital disadvantage experienced by many students and teachers (Borgen, 2023). High-speed internet access and digital devices were lacking in both urban and rural areas, exacerbating existing inequalities in access to education. While some schools and educators made dedicated efforts to continue teaching online, the digital divide persisted, hindering effective learning for many students (UNICEF, 2020).

Moreover, the lack of digital literacy among both teachers and students posed a significant hurdle (Samuels, 2022). Many educators were not adequately prepared to navigate remote teaching platforms, and students struggled to adapt to online learning environments (Roofe, 2021). The sudden switch to remote education highlighted the need for comprehensive training and support in digital literacy for both educators and students to ensure effective teaching and learning in virtual settings (ReliefWeb, 2020).

Another critical issue was the disruption to examinations and grading processes (Roofe, 2021). With schools closed during the 2019-20 school year, thousands of students were unable to take examinations or receive necessary grades for academic progression (Samuels, 2022). This raised concerns about the validity and fairness of assessment methods during times of crisis and underscored the need for alternative evaluation strategies to ensure educational continuity (Samuels, 2022).

Despite initial praise for the Jamaican government's response to the pandemic, difficulties arose in ensuring effective online education (Borgen, 2023). The challenges posed by the digital divide and the lack of preparedness highlighted the need for more comprehensive and sustainable strategies to address the multifaceted challenges of remote learning (Borgen, 2023).

Stakeholder Response to the Crisis

To address these challenges, the Ministry of Education, Youth, and Information announced a blended approach for the new school year in October 2020 (Borgen, 2023). This approach included online learning through digital platforms, broadcasting lessons on free-to-air television and cable channels, and distributing learning kits to students (ReliefWeb, 2020). While these initiatives aimed to mitigate the digital divide, challenges persisted, especially regarding internet connectivity in rural areas (UNICEF, 2020).

Throughout the pandemic, radio and television played crucial roles as sources of information and educational content (FHI 360, 2024). Despite facing challenges, broadcasters continued to support education by delivering critical programming to students across the country (ReliefWeb, 2020). However, ensuring connectivity remained essential for effective online education, highlighting the need for investments in broadcasting infrastructure and support for media organisations (Vision 2030, n.d).

The pandemic also emphasised the necessity for flexibility and adaptation in education. The shift to remote modalities led to a reevaluation of teaching methods and the adoption of innovative approaches to meet the diverse needs of students in virtual environments (Kemp, 2022). Educators and institutions had to embrace technology and rethink traditional teaching practices to ensure educational continuity during challenging times.

A review of the schools that were most successful in transitioning to remote learning during the COVID-19 pandemic highlighted the fact that previous IT adaptation methods and policies were pivotal to the smooth transition and continuity of studies. A commendable example comes from Ardenne High School in Kingston, which successfully transitioned to remote learning during the COVID-19 pandemic by leveraging its long-term investment in technology and staff training (Molloy 2022). The school's leadership had made technology integration a priority in their improvement plan, leading to a seamless transition from in-person to online education. Policy guidelines for Bring Your Own Device (BYOD), social media use, and ICT integration were in place, and all students were familiar with technology-based subjects. The school had also been transitioning to a paperless operation over the past six years, with classroom-level technology and school-wide Internet access trending upwards. Additionally, the school had piloted assessment in e-mode and had defined new roles and functions to support the integration of technology. Despite initial pushback, the school moved to greater technology integration in September 2020. The school's preparedness and investment in technology allowed for a smooth transition to remote learning, with high levels of attendance and improved exam results (Molloy, 2022). The school also adapted its guidance and counselling program, clubs and societies, tutoring program, and enrichment activities to the online space. The staff and students adapted well to the virtual environment.

A similar approach was seen in a privately run infant and primary school in Junction, St. Elizabeth, a rural town. Great Start Academy had also implemented a Bring Your Own Device (BYOD) policy in its school even prior to the pandemic to enhance learning through digital means. Prior to the pandemic, internet access at Great Start Academy was mainly accessible in the administrative building and significant connectivity issues could be found in most other areas of the school's compound. The pandemic highlighted the need for greater internet connectivity not just on the school's grounds but also at the pupils' homes since distance learning was mandated by the government, and most students had to remain at home during this period while continuing their schooling. Despite being from the more affluent rural communities, many of the 400 students and 36 staff members at Great Start Academy had no access or unreliable internet access

beyond the school's gate. This proved challenging for the principal and educators at the school, who had to come up with creative and innovative ways to reach their students.

"We had to create alternative plans for students lacking dependable internet access. Instructional recordings were distributed through WhatsApp, and teachers offered support through text and phone calls if the videos were unclear. It was a demanding period, but we made sure to engage with at least 95% of the student body via Zoom. Despite the challenges, we successfully connected with every student." (Principal Sheron Bent, 2024).

In spite of their best efforts, the principal reported significant challenges to online classroom management, much of it attributed to service interruptions. This led to absenteeism by both students and teachers who were simply not able to connect to the internet. Consequently, students fell behind in the curriculum, impacting their expected level of comprehension compared to being in a physical classroom (Principal Sheron Bent, 2024).

The Digital Divide and Socio-economic Impact

The COVID-19 pandemic presented unprecedented challenges to the education sector in Jamaica, exacerbating pre-existing issues and highlighting disparities in access to education, digital resources, and infrastructure. In 2021, The Ministry of Education estimated that 120,000 students were unable to take up online instruction for one or more reasons in the previous academic year, including not having an electronic device or internet access to attend classes since the COVID-19 pandemic closed schools in March 2020 (Jamaica Observer, 2021). Many students in Jamaica, particularly those from rural and underserved communities, lacked access to reliable internet infrastructure and devices such as laptops or tablets (Borgen, 2023). According to a report by the Statistical Institute of Jamaica (STATIN), approximately 30% of households in Jamaica did not have access to the Internet in 2020, highlighting the digital divide's pervasive nature. Here Fig. 1 depicts Internet access in Jamaican households.

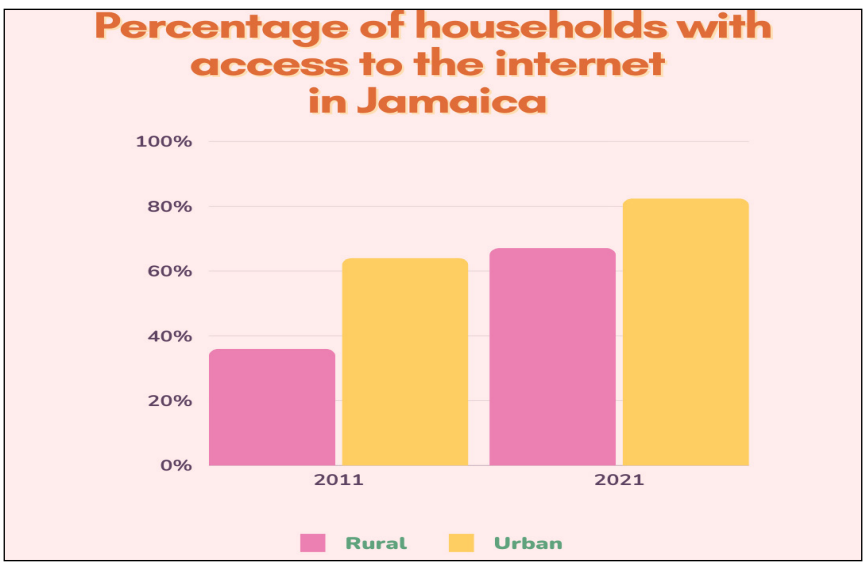

Fig. 1: Internet access in Jamaican households

As a result, students without access to technology faced significant barriers to participating in remote learning initiatives implemented during the pandemic (UNICEF, 2020). Without reliable internet connectivity or devices, these students were unable to access online learning platforms, participate in virtual classes, or complete digital assignments. This disparity widened the educational gap between students from affluent urban areas with access to technology and those from rural and marginalised communities without such access (Borgen, 2023).

Another challenge faced by Jamaican schools during the COVID-19 pandemic was inadequate infrastructure and resource constraints. Many schools in Jamaica lacked the necessary infrastructure to support remote learning, including reliable internet connectivity, computer labs, and digital learning resources (UNICEF, 2020). Additionally, budgetary constraints and limited funding hindered schools' ability to invest in technology upgrades and infrastructure improvements (Johnson, 2023).

For example, in rural areas of Jamaica, schools struggled to provide students with access to basic amenities such as electricity and running water, let alone reliable internet connectivity or digital devices (STATIN, n.d). Without the necessary infrastructure in place, educators were unable to deliver effective online instruction, leaving students at a disadvantage in their educational attainment. Moreover, the lack of digital resources and learning materials further hampered students' ability to engage in remote learning effectively (Johnson, 2023).

Before the COVID-19 pandemic, Jamaica faced challenges in ensuring widespread access to the internet and technological devices among students. According to a report by Vision 2030 Jamaica, while the total number of mobile phones in Jamaica exceeded the country's population, indicating widespread mobile phone ownership, many school-age children still lacked access to other technological devices such as laptops or tablets. Additionally, only a portion of Jamaican households had reliable internet access, further exacerbating disparities in digital access (Vision 2023, n.d).

The pandemic exacerbated existing infrastructure and resource constraints as schools transitioned to remote learning modalities. A report indicates that approximately 34% of children in Jamaican households did not have access to a technological device, and many lacked reliable internet access for educational purposes (Kemp, 2022). This lack of access hindered students' ability to participate in online classes, access digital learning materials, and complete assignments.

In many cases, parents with multiple children had to share limited technological devices, such as smartphones, among their children for educational purposes. For instance, a parent with three children may have had only one smartphone available for their children to use for online classes and assignments (Jamaica Gleaner, 2023). This scenario created challenges for students in accessing online learning consistently and effectively, especially during simultaneous class schedules or assignments. One secondary student living in an inner-city community in Kingston reported that he was able to access online classes for two weeks while his mom recovered from a broken arm (Jamaica Gleaner, 2023), resulting in her being at home so he could use her mobile phone. His access ended, and the work piled up so much after she returned to work that he was not able to keep pace with other students. He eventually spent his days just babysitting his little sister. Refer Table 1 herewith to gen an update.

To address these challenges, the Jamaican government, in collaboration with the private sector, implemented initiatives to provide technological devices and internet connectivity to students in need (Borgen, 2023). For example, the National Education Trust (NET) launched the 'One Laptop/Tablet per Child Initiative' to acquire and distribute devices to students lacking access to technological resources

(ReliefWeb, 2020). Additionally, public-private sector partnerships, such as those highlighted by Minister of Education, Youth, and Information Fayval Williams, played a crucial role in enhancing digital access and supporting remote learning initiatives (UNICEF, 2020). These efforts aimed to bridge the digital divide and ensure that all students have equitable access to education during the pandemic and beyond.

Table 1: Parental challenges during the Covid-19 pandemic in Jamaica

Challenges Faced by Parents Sharing Mobile Phones for Online Classes During the Pandemic in Jamaica	
Limited Access	Many Jamaican households lack digital devices and reliable internet, hindering children's regular attendance in online classes because family members must share a single mobile phone.
Disrupted Learning	Sharing mobile phones resulted in children being unable to access online classes simultaneously, disrupting their learning schedules and potentially causing them to miss lessons, leading to academic setbacks.
Inequity in Education	Reliance on mobile phones widened educational inequity, as students from lower-income families faced greater difficulties accessing online resources compared to their more affluent peers.
Strain on Parents	Balancing work responsibilities with facilitating their children's online learning imposed additional stress on parents, exacerbating their burdens during an already challenging time.

Socio-economic disparities exacerbated the challenges faced by Jamaican schools during the COVID-19 pandemic, as students from low-income households were disproportionately affected by school closures and remote learning initiatives (UNICEF, 2020). According to the Jamaica Survey of Living Conditions (JSLC), approximately 19% of Jamaican households lived below the poverty line in 2020, further highlighting the prevalence of socio-economic disparities in the country.

Students from low-income households often lacked access to essential resources such as digital devices, reliable internet connectivity, and quiet study spaces conducive to remote learning (Kemp, 2022). Additionally, many parents in low-income households were unable to support their children's remote learning due to work obligations, lack of digital literacy, or competing priorities (Borgen, 2023). Some parents reported that they often had to choose between buying internet data and buying food. As a result, students from low-income backgrounds faced increased barriers to accessing quality education during the pandemic, widening existing disparities in educational attainment and socio-economic mobility (Borgen, 2023).

Recognising and Addressing Professional Development Needs for Educators

The sudden shift to remote learning during the COVID-19 pandemic also posed challenges for teachers in Jamaica, many of whom were unprepared to transition to online instruction (Roofe, 2021). According to a survey conducted by the Ministry of Education, Youth and Information (MOEYI), a significant percentage of teachers reported feeling inadequately prepared to teach remotely, citing a lack of training in online pedagogy and digital tools (Samuels, 2022).

Furthermore, limited professional development opportunities and access to training resources hindered teachers' ability to adapt to the demands of remote learning effectively (Roofe, 2021). Without the

necessary skills and support systems in place, many teachers struggled to engage students in meaningful online instruction, leading to disparities in the quality of education provided during the pandemic. Additionally, some teachers' lack of digital literacy further compounded the challenges faced in delivering effective online instruction (Borgen, 2023).

In August 2020, in collaboration with the Jamaican Ministry of Education, Youth and Information and the University of the West Indies Open Campus, UNESCO launched the Online and Blended Professional Development Initiative in Jamaica (ReliefWeb, 2020). This initiative aimed to equip 40 teachers and master teachers with the necessary skills, tools, and resources to effectively implement blended learning and online strategies in response to the COVID-19 pandemic. The 4-day workshop focused on training teachers in distance and blended teaching and learning skills to strengthen the education system's resilience to future shocks (ReliefWeb, 2020).

The workshop addressed the challenges faced by students and teachers during the pandemic, particularly in remote areas with limited connectivity and access to online educational resources (ReliefWeb, 2020). It also emphasized the importance of reimagining education and accelerating changes in teaching and learning to minimize learning losses, especially among vulnerable learners and youth (ReliefWeb, 2020). The training covered various online educational methods, including the use of educational videos, interactive platforms, web conferencing tools, and online delivery pedagogy to engage students in online learning. Additionally, the workshop included a component on critical thinking in the online space, emphasizing the importance of validating sources and checking the credibility of information, with special attention to gender-specific learning to involve girls and boys equally (FHI 360, 2024).

The Psychosocial Impact of COVID-19 of Jamaican Students

The COVID-19 pandemic also had a profound psychosocial impact on students in Jamaica, as school closures and social distancing measures disrupted their routines, social interactions, and mental well-being (UNICEF, 2021). According to a study conducted by the University of the West Indies (UWI), many students experienced feelings of isolation, anxiety, and depression during the pandemic, exacerbated by the uncertainty surrounding the health crisis and its long-term implications.

The transition to remote learning further exacerbated feelings of social isolation and disconnection among students, particularly those from marginalised communities with limited access to digital devices or internet connectivity (Parker et al., 2022). Additionally, the lack of face-to-face interaction with teachers and peers deprived students of essential socialisation opportunities and emotional support networks, further impacting their mental health and well-being (Dubey *et al.* 2020). While some were able to connect with their friends and peers via WhatsApp and other social media platforms, not all had the privilege of doing so and were, therefore, often lonely and isolated. Teachers observed as well that some were constantly under the watchful eye of very strict parents, whose disciplinary methods were rigid and old-fashioned. Violence against children continued to be of great concern during the pandemic, with an increased likelihood of children experiencing violence at home due to heightened tensions in households, added stressors on caregivers, and social isolation (UNICEF, 2021). Approximately 40 per cent of respondents to a 2020 UNICEF survey admitted that adults in the household shouted, yelled, screamed, or called their child names more frequently than prior to the COVID-19 restrictions.

The psychosocial impact of the COVID-19 pandemic on students has been profound, affecting their mental health, emotional well-being, and academic performance. Educators and medical professionals globally have noted several key aspects of this impact:

According to research published in Frontiers in Public Health, college students experienced high levels of stress, anxiety, and depression due to COVID-19-related worries (American Medical Association, n.d). This is echoed in local reports, where educators in Jamaica have observed heightened levels of anxiety among students facing uncertainties about the pandemic's duration and its effects on their education (Jamaica Observer, 2021).

The shift to remote learning and social distancing measures has led to increased social isolation among students (American Medical Association, n.d). This isolation can exacerbate feelings of loneliness and negatively impact students' mental health. Educators worldwide, including those in Jamaica, have emphasised the importance of maintaining social connections and providing support networks for students during this time (Johnson, 2023).

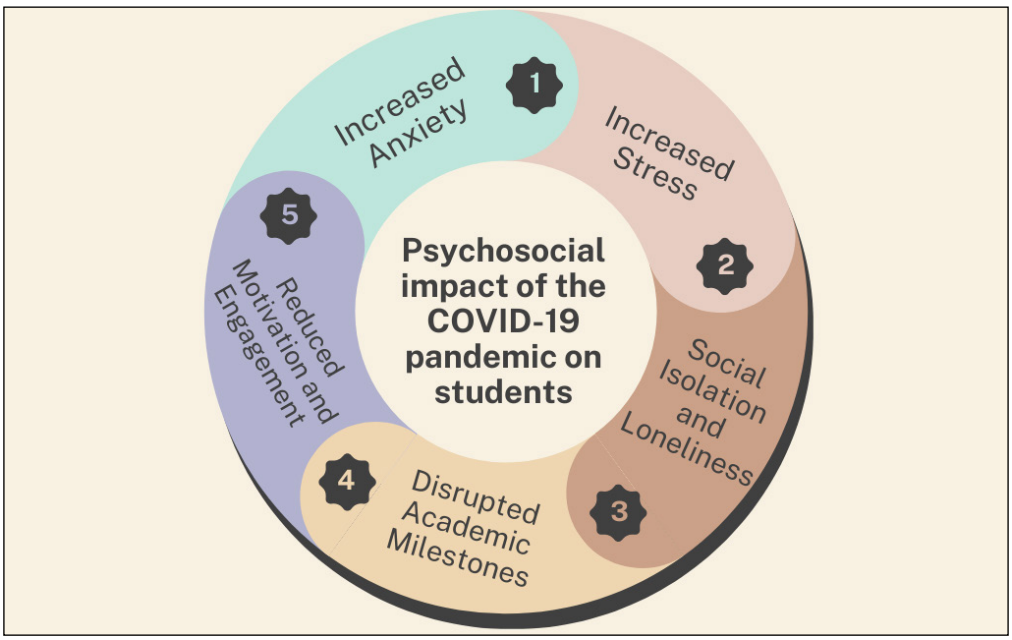

Fig. 2: Psychosocial impact of the pandemic on students

The psychosocial impact of COVID-19 on students extends beyond mental health concerns to include delays in achieving academic milestones (Johnson, 2023), herewith refer Fig: 2. Financial hardship experienced by families during the pandemic may have contributed to students' inability to access necessary educational resources, leading to academic progress setbacks (UNICEF, 2020). Mobile data and WiFi services are not particularly cheap, and many parents have had to decide to either purchase data or feed their families. The pandemic devastated the economy, with approximately 80 per cent of households experiencing income reduction and 45 per cent experiencing food shortages (UNICEF, 2020). The impact was felt more acutely in female-headed households and households with two or more children. Those who were determined to get help for their children would ask for sponsorship of phone

credits, and others would visit the schools to collect paper-based assignments that their children could complete (Jamaica Observer 2021).

Due to the challenges posed by the pandemic, students may experience reduced motivation and engagement with learning (Popa, 2022). Factors such as uncertainty about the future, disruptions to routines, and feelings of overwhelm can contribute to a lack of enthusiasm for academic pursuits. Local educators in Jamaica have reported instances of decreased motivation among students, highlighting the need for targeted interventions to support their well-being and academic success (Kemp, 2022).

CONCLUSION AND FUTURE DIRECTIONS

The COVID-19 pandemic posed significant challenges to the education system in Jamaica, highlighting systemic inequalities and the need for comprehensive strategies to address them (Borgen, 2023). Jamaican schools faced a myriad of challenges, including the digital divide, infrastructure and resource constraints, socio-economic disparities, teacher preparedness, and the psychosocial impact on students (UNICEF, 2021). Addressing these challenges requires a multi-faceted approach involving government intervention, community partnerships, and stakeholder collaboration to ensure equitable access to quality education and support the holistic well-being of students in Jamaica. While efforts were made to transition to remote learning, issues such as the digital divide, lack of digital literacy, and examination disruption underscored the importance of equitable access to education and ongoing innovation in teaching and learning practices (Borgen, 2022). Moving forward, it will be crucial for policymakers, educators, and stakeholders to collaborate on sustainable solutions to ensure inclusive and resilient education systems in the face of future crises.

While many educators and parents lamented the struggles and hardship of remote learning during the Covid-19 pandemic, what was evident is that the issues and challenges were not so much about whether or not learning can be done successfully online; that has been proven to be true in many countries across the world. Instead, what we now know from the Jamaican experience is that access to reliable internet and electronic devices, embracing the digital era and its modern technologies as the way of the future and with that mindset, train teachers and educators to be equipped with the knowledge of how to incorporate digital learning and information technology in the classrooms, is what makes the real difference.

Parents and educators who deemed online learning a failure spoke mainly of a lack of access to the needed resources, which led to absenteeism. They also spoke of their own ill-preparedness with technological solutions and platforms. Parents struggled to connect to the internet, and they could not afford said access even when it could have been provided. Therefore, the government and private sector in Jamaica must take serious stock of these issues and quickly implement solutions and programmes to stem the digital divide. To ignore or delay in this area will be detrimental to students, particularly those in rural areas and those from lower economic backgrounds who are still expected to grow up and enter a workforce and a world that is becoming more and more dependent on digital technologies. We should fear the possible impact of leaving these students behind.

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