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RESEARCH ARTICLE

Dark side of digital transformation in online teaching-learning process considering COVID-19

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ABSTRACT

In the educational sector, the COVID-19 pandemic sparked a slow but significant digital transformation that became especially evident in the spring of 2020. This article examines the growing trend of virtual learning environments and how it affects both educators and learners. With an emphasis on the experiences, feelings, and perceptions of the students, the research explores the complexities and difficulties resulting from the swift shift to online learning. This article highlights the significance of incorporating student feedback to improve virtual learning environments, even in the face of technological advancements. The idea that educational institutions have successfully transitioned to online instructional methodologies is challenged by examining the sudden and somewhat haphazard shift to online classrooms and assessments. In order to prepare in a better way for upcoming academic opportunities and the long-term evolution of higher education, it is imperative to reflect and gain insights as this momentous educational transformation, especially in university settings, comes to an end. The article critically analyzes the differences in technological access and instructional competencies in addition to highlighting the benefits of the pandemic-induced digital transformation in industries other than education. This article offers a fair analysis of the COVID-19-related digital revolution in education, recognizing both its positive and negative aspects.

Keywords: dark side of digital transformation; virtual classroom; information; communication technology (ICT)

1. Introduction

The concept of "digital transformation" is pivotal in understanding the integration of digital technology into various aspects of modern life. This shift has a substantial impact on a number of industries, including business and healthcare, and it is resulting in the creation of new techniques as well as the improvement of current ones[1]. The need for digital resources in the field of education has increased, which is indicative of the industry's adjustment to shifting technological environments[2]. Moreover, the primary focus of cognitive info-communication technology is on the interactions that occur between people and information[3]. This field, which lies at the intersection of intellectual sciences and information communication, encourages interdisciplinary collaboration to create a wide range of technological applications[4]. The evolution of work and communication paradigms is highlighted by the developments in cognitive information technology, which enable remote collaboration and asynchronous project execution[5]. A game-changing technology

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called augmented reality (AR) superimposes virtual or digital elements on the real world to enhance the user's interaction and sensory experience[6]. Real-time integration of computer-generated images, audio, and other sensory enhancements is known as augmented reality (AR), and it can be accessed via a variety of devices including tablets, smartphones, smart glasses, and headsets[7]. AR is being used in a wide range of industries, such as manufacturing, education, gaming, entertainment, and healthcare. With the use of augmented reality (AR), gamers can interact with virtual characters in authentic settings[8]. AR applications for education involve overlaying educational materials onto real-world environments to provide engaging and interactive learning environments[9]. AR greatly enhances medical education and practice in the healthcare industry by supporting surgical planning, medical training, and patient data visualization[10]. The technology improves the design process by helping designers and architects visualize and alter 3D models in real spaces[11]. In general, augmented reality (AR) is a fusion of the digital and physical worlds, bringing new experiences to a variety of industries and improving how people perceive the world[12].

Through the use of intelligent systems and other information and communication technology (ICT), augmented reality (AR) has a profound impact on educational practices. In educational settings, this technology is crucial for promoting collaboration and facilitating remote work and digital learning[13]. Digital solutions in education can take two forms: software and hardware. Because of their interactive features, hardware solutions like tablets, smartphones, and interactive SMART displays improve the educational process[14]. On the other hand, software-based solutions play a crucial role in encouraging student cooperation and accelerating the learning process[15]. There are several ways to implement digital transformation in the classroom. The ability of educators, in particular new instructors, to adapt to virtual learning environments is currently being examined, and some data suggests that younger educators may do so more readily[16]. While digital programs and learning management systems are widely used in private education, their use is less common in Hungary's public schools and universities. This is partially because there aren't enough devices that can support these technologies widely[17]. Similar research is being done on these tech adoptions in higher education settings. Early in 2020, Hungary had to quickly transition to digital education due to the COVID-19 pandemic. This shift from traditional in-person instruction to online classes presented special challenges for teachers and students because, up until now, remote work and distance learning were uncommon, especially in developing nations like India[18].

2. Research methodology

The methodology used in the article is a multifaceted approach that combines a systematic review of existing literature, qualitative analysis, and thematic synthesis. The methodology can be further developed as follows:

- Review of the literature:

The research begins with a thorough literature review to gather existing research, data, and findings on the impact of digital transformation on society, particularly in the aftermath of the COVID-19 pandemic. Peer-reviewed articles, journals, and publications are sourced using databases such as JSTOR, PubMed, and Google Scholar.

To ensure a comprehensive collection of relevant literature, keywords such as "digital transformation," "COVID-19 and mental health," "digital education," and "online community engagement" are used.

- Qualitative evaluation:

To interpret and analyze the data gathered from the literature review, the study employs qualitative analysis. This entails reading and coding the literature to identify common themes, patterns, and insights

related to the challenges and coping strategies of digital transformation. The studies that highlight psychological effects, educational adaptations, and community engagement in digital settings receive special attention.

- Thematic synthesis:

The collected data is then thematically synthesised in order to extract significant themes and narratives. This synthesis contributes to a better understanding of the broader implications of digital transformation, such as the psychological effects of prolonged digital exposure and the efficacy of various coping strategies. Themes like "transformation of loneliness into solitude," "digital isolation and community engagement," and "innovations in digital education" are thoroughly explored.

These methodologies, collectively, provide a comprehensive overview of current knowledge on coping with digital transformation and identifies areas that require additional research and exploration.

3. Digital technology

Innovation has been essential in helping the delivery of educational services to go beyond the confines of the traditional classroom. The integration of diverse media, such as radio, television, internet, and mobile applications, has facilitated the effective deployment of remote learning technologies across the globe. UNESCO, UNICEF, and the World Bank conducted a comprehensive study that found that roughly one-third of low-income nations reported that half of their children still lacked access to educational opportunities[19]. Due to the situation, there are now noticeable differences in internet connectivity, which highlights how inadequate traditional education approaches are to ensure that everyone has access to education. As a result, different approaches are required to close the technology divide in classrooms and efficiently leverage technology to enhance learning education[19]. It is imperative that educational systems adapt by addressing five key issues that the World Bank's EdTech team identified in a short to medium timeframe. These issues highlight how crucial it is to rethink education in order to provide all students with equitable, pertinent, and stimulating learning opportunities[20]. The World Bank is actively assisting nations in resolving issues related to inexpensive connectivity, purchasing equipment, utilizing cloud services, and implementing multimodal teaching strategies. Furthermore, investments in virtual learning are perceived in many nations not only as solutions to the problems facing education today but also as backup plans for potential disasters, especially in light of global warming. This strategy ensures wider access to higher education while also reaching out-of-school youth[21].

The creation of efficient learning management systems, remote assessment techniques, and the use of learning data to customize student experiences are at the center of the World Bank's efforts. A crucial first step in this endeavor will be to establish an advanced Education Management Information Systems (EMIS) framework, which will enable the effective use of information[22]. By assessing teacher competency frameworks, encouraging educator connections, and creating a community of creative educators, the World Bank is also dedicated to improving teacher engagement. It is critical to acknowledge the ongoing significance of teachers in the educational process, particularly in this age of rapid technological advancement. Research indicates that better learning outcomes are not always the result of excluding educators from technology integration[23].

In response, the World Bank and its partners are pushing for the creation of global public goods and strategies that are open to the public and are encouraging a diverse range of entrepreneurs from their client countries to work together to develop and implement innovative curricula and educational content. In order to create an atmosphere that is favorable to the successful and efficient integration of technology in

education, this initiative seeks to involve a variety of stakeholders, including educators[24]. In order to create new learning resources, the World Bank team is also dedicated to creating communities of practice that bring together innovative EdTech centers and creative thinkers. These materials, which will be kept in cutting-edge, free learning libraries, will be devoted to tackling the problems caused by climate change. Within these learning communities, collaboration with global partners will facilitate the exchange of knowledge and experiences, with a focus on intangible skills and the use of blockchain technology in education[25]. Furthermore, the World Bank will offer guidance to nations on how to define qualifications for teachers and students in the twenty-first century, investigate efficient techniques for measuring and assessing these abilities, and create frameworks for accreditation to acknowledge and verify them[26]. The World Bank hopes to improve teaching methods that are up to date with the needs of the twenty-first century through these initiatives.

Online education

Within the field of contemporary information technology, the development of the Internet during the previous twenty years is a noteworthy milestone. The Internet has transformed from a small resource to the largest and easiest-to-access information bank in human history. Its influence is both extensive and profound. It has fundamentally changed how knowledge is viewed and acquired, as well as aspects of human life like socialization, commerce, and communication[27]. New socialization patterns have emerged as a result of the Internet's revolution in interpersonal interactions, which has also changed the conventional frameworks associated with shopping and commerce. Most importantly, it has transformed how people interact with and obtain information, which has led to the creation of new learning avenues and opportunities[28].

The advent of virtual education signifies a significant change in the educational environment. This change represents a broader paradigm shift in the way that learning is approached rather than just a reformation of the educational systems that are currently in place. Virtual education provides a more inclusive, accessible, and economical form of education than just modernizing distance learning[29]. At the vanguard of this educational revolution is digital learning, which is defined by the predominant use of the Internet and personal computers for knowledge acquisition. The use of digital graduation ceremonies and programs has grown significantly in recent years, particularly among distance learners who need the flexibility to continue working a full-time job or taking care of their families[30]. To increase accessibility and diversity of educational offerings, educational institutions have used online technologies to offer a variety of virtual commencement ceremonies and training courses[31]. This shift in how education is delivered serves as the foundation for a number of cutting-edge pedagogical techniques that go beyond traditional classroom settings and college campuses. With virtual classrooms, any space with electricity and internet access can become a dynamic learning center. Numerous learning modalities are available on these platforms, such as text, voice, video, virtual training rooms, captivating animations, and real-time, interactive conversations with teachers[32]. This dynamic learning environment offers students unmatched flexibility and engagement because it goes far beyond the confines of a traditional classroom. When used effectively, online learning has shown to be more effective than conventional face-to-face teaching techniques. Its ability to engage and instruct students depends on offering tailored and customized experiences that are easily adjusted to the schedules and tastes of a wide range of people[33]. The adoption of these cutting-edge methods in education opens the door to a more flexible and inclusive learning environment in the future.

4. Digital transformation in education during COVID-19

Following the historic worldwide shutdown, two Indian educators—one connected to a private special education program and the other to a public school that offers special education—showed impressive

flexibility when it came to using digital teaching materials. This study examines how they made the switch to digital teaching media, paying special attention to how they employed different tech tools and tactics to preserve academic continuity[34]. These educators quickly incorporated online videos, iPads, and laptops into their teaching strategies. Regarding the private school, teachers were given tablets to use at home and at school, and they added to the school's meager internet access by buying their own SIM cards to guarantee continuous online connectivity[35]. Their commitment to maintaining contact demonstrates how committed they are to the education of their students. Even after they shifted to offering instruction online, they still made extensive use of iPads in their lesson plans. Furthermore, special needs students were usually given a range of resources, including games, puzzles, and gadgets, to help them with their everyday education in both schools. But teachers couldn't bring these materials home or give them to students and their families because of the abrupt lockdown in India that was declared in March[36]. The disruption required an inventive and quick solution. The public school's special education teacher mostly used WhatsApp to stay in touch with the students and their guardians. Every two weeks, parents or caregivers would get a 15-day study guide, and the teacher would check in with the class once a week to see how they were doing. During the lockdown, this means of communication proved essential for continuing education[37]. Additionally, the majority of student-teacher pairs participated in frequent WhatsApp video chats, which made it possible to assess student performance in real time, conduct quick interventions, and address particular issues. For families without access to WhatsApp, this strategy was augmented with prearranged phone calls arranged by the guardians[38]. Within the framework of an organized digital learning approach, the school system created a detailed schedule for instructors. In order to improve student engagement and individualized attention during the pandemic, this schedule required individual or group Zoom meetings with each student.

In addition, four times a week, the school staff got together on Zoom to discuss challenges and tactics related to virtual student interaction[39]. Access to educational videos on digital platforms such as Zoom was also beneficial to the staff and teachers, promoting a cooperative learning environment where teachers prepared and assessed weekly lesson plans tailored to individual students[40]. In addition, educators carried out evaluations on a daily basis and painstakingly documented every student's development, difficulties, and requirements. These documents, which were assembled and given to school administrators, offered insightful information about student performance and helped shape upcoming teaching tactics[41]. In conclusion, these Indian educators' shift to digital learning highlights the value of flexibility, ingenuity, and teamwork in maintaining high standards of instruction even in the face of adversity. Their experiences provide insightful information about efficient digital teaching strategies, especially when applied to special education.

4.1. Transformation in teaching

It was a commonly held belief prior to the outbreak of the epidemic that technological innovation had the capacity to completely transform the educational landscape. It was assumed that this kind of innovation would drastically change the ways that instruction is delivered. A deeper look, however, reveals that teachers' enthusiasm for incorporating technology into their lesson plans varies widely. Some people are willing to use technology tools, but there are others who are not so keen[42]. This divide has been starkly brought to light by the COVID-19 pandemic, where substantial knowledge gaps are caused by the absence of traditional, in-person instruction as a result of school closures and the lack of technological integration in some educational settings[43]. In the past, technology has been introduced to educators through a simplistic approach that prioritizes device use over a deeper comprehension of how devices can improve pedagogy. Teachers are frequently left doubtful about the true effectiveness of technology in enhancing their pedagogical approaches due to this superficial integration. Therefore, it is crucial that policymakers support both digital literacy and the capacity to use technology to enhance the educational process. This entails offering rewards for utilizing

these digital skills and promoting critical evaluation of novel teaching approaches[44]. It's important to note that acquiring these skills doesn't just happen because technology is available; instead, it calls for a thorough strategy that goes beyond simply switching out conventional tools like notebooks for digital tablets[45].

In order to modify the way that educators use technology, policymakers ought to take into account four tactical methods:

- Concentrating on understanding fundamental ideas rather than merely the "keystrokes" involved in using technology.
- Promoting a change in mindware, or attitude and strategy, as well as software, or tools.
- Creating solutions that are user-centered and address the unique requirements of teachers and students.
- Understanding that in educational settings, increased access to information results in better-informed and efficient decision-making[46].

The pandemic has irreversibly altered the dynamics of teaching and student engagement. Aside from responding to immediate challenges, this time period offers an unprecedented opportunity to reimagine the role of teachers. This reimagining is not only about what technology can offer or how it can improve educators' existing skill sets, but also about how technology engagement can inspire both teachers and students[47].

4.2. Transformation in learning

The COVID-19 pandemic has undeniably increased the role and significance of e-learning in the academic landscape. This modality has emerged as a strategic response, providing educational continuity while preserving the integrity of learning outcomes[48]. Educational institutions have adapted, viewing the pandemic's challenges and competitive pressures as opportunities for growth and development[49]. The primary function of education is to prepare individuals to navigate and respond to change, a principle that has been highlighted by the recent health crisis. In the midst of the growing challenge of internet connectivity and its associated economic considerations, the effectiveness of the educational apparatus is critical in achieving societal goals[50]. Because of the ever-changing global landscape, today's educational model must prioritize lifelong learning and adaptability[51]. The improvement of the learning environment to encourage and nurture innovation and creativity is central to the strategy of many Ministries of Education around the world. Distance learning relies on interactive and reciprocal communication between students and educators that goes beyond rote learning. This transition, however, has not been without its challenges, most notably the varying availability of necessary technical infrastructure[52]. Nonetheless, during the COVID-19 crisis, e-learning stood out as a bulwark for educational continuity[53]. Despite its benefits in providing an uninterrupted learning process during the pandemic's spread, the National Transformation Program 2020 has been chastised for failing to cultivate a dynamic educational environment. Concerns raised by critics include a continued reliance on traditional pedagogies, a lack of social and critical thinking skills, and a lack of innovation[54]. This critique suggests that systemic changes are urgently needed to fully realize the potential of e-learning and close these gaps.

5. Dark side of digital transformation

It has been said that digital transformation in education will bring about progressive change by ensuring accessibility and inclusivity. But these initiatives run the risk of collapsing under the surface of technological advancements due to underlying issues and resistance, which can be summed up as follows:

A. Inherent resistance to change

The innate aversion to change is a major barrier to the digital transformation. People are habitual beings who frequently show a strong preference for the known over the unfamiliar. This is especially true in educational settings where conventional teaching strategies have proven to be effective over time. For example, when switching from traditional chalkboard lectures to digital presentations, faculty members at a university called XYZ demonstrated a noticeable reluctance, met with skepticism and a notable decline in faculty involvement[55].

B. Strategic misdirection in technology engagement

The use of digital tools in education is severely hampered by the lack of a coherent technology engagement strategy. The ABC School District's attempt to digitize its curriculum without a clear plan led to confusion and unnecessary spending on incompatible software solutions. This is an example of this[56]. Such misguided attempts highlight the need for a clear plan that is in line with the objectives of the organization and the requirements of education.

C. Skill gap in digital literacy

The technological competence of the stakeholders has a major impact on the effectiveness of digital transformation. According to the U.S. Department of Education, a significant section of the labor force lacks fundamental digital skills, endangering the smooth incorporation of technology in educational settings[57]. In addition, the UK's tech sector is suffering from a lack of qualified workers in STEM fields, a problem that is also present in the education sector[58].

D. Difficulties with data management

Despite the abundance of data in educational institutions, this resource is frequently managed in an ineffective and disorganized manner. For example, the marketing department at DEF University gathered a lot of information about student engagement but did not combine it with the admissions data, which resulted in less-than-ideal student recruitment tactics[59]. The possibility of obtaining practical insights that could improve the performance of the institution and the student experience is undermined by the fragmentation of data across departments.

E. Technological dissonance

Technology dissonance brought on by incompatible systems is another issue facing educational institutions. One example is GHI College, which was unable to provide a coherent educational experience because of the use of several, non-integrated learning management systems, which led to a fractured technological ecosystem[60]. The incompatibility of diverse digital platforms can impede both administrative and educational efficacy.

Hence, digital transformation in education holds enormous promise, it also poses formidable challenges. To address these concerns, a multifaceted approach is required, including change management, strategic planning, investment in digital literacy, data integration strategies, and technological infrastructure improvements.

5.1. Intersubjectivity and the self in pandemic times

The COVID-19 pandemic has sparked an investigation into intersubjective concerns, shedding light on cultural differences in how communities approach public health challenges. This research article delves into the concept of intersubjectivity—the shared mutual understanding among individuals within a community—and how it has been expressed or ignored in various cultural contexts during the pandemic, particularly in the contrast between autonomous and interconnected self-conceptions.

Individualistic responses to COVID-19 have been predominant in cultures that value autonomy. Individuals in these cultures are more concerned with the personal consequences of contracting the virus than with the possibility of spreading it to others. This singular focus exemplifies an intra-subjective perspective, which emphasizes the self-contained individual while frequently ignoring the intersubjective responsibility of preventing communal spread[61]. In some Western societies, the belief that one's health decisions may have only personal consequences has influenced public behavior and policy adherence.

The intersubjective gap is defined by a culture's orientation toward or away from community-based thinking. In communities with a more self-sufficient self-concept, the dreaded prospect of spreading the virus to other people is frequently balanced by the fear of personal illness[62]. This disconnection from the communal aspect of health is not the result of ignorance, but of a cultural construction of self that lacks a prominent intersubjective dimension. During health crises, this orientation frequently leads to a misalignment between individual actions and collective needs. Cultures with an interconnected self-conception, on the other hand, are more sensitive to intersubjectivity. Fear of infecting others is a major concern, frequently overshadowing personal fears of illness[63]. Individuals in these societies recognize their health decisions as part of a larger social fabric, which leads to a greater acceptance of collective health measures such as mask mandates and vaccination drives[64].

The ongoing pandemic exemplifies the importance of intersubjective awareness in public health policies. Recognizing different cultural conceptions of self can help guide more effective communication and health-care implementation. To bridge the gap between personal fears and communal responsibilities, intersubjective considerations must be integrated into health messaging[65].

As the world faces new global health challenges, the cultural dimensions of intersubjectivity become more important. When designing interventions, policymakers and health professionals must consider these dimensions to ensure that they resonate with the cultural ethos of the target populations. In the face of pandemics, emphasizing the intersubjective element in health communications may improve compliance and collective action[66]. The cultural conception of self, whether autonomous or interconnected, has far-reaching consequences for how societies respond to public health crises. The pandemic of COVID-19 has highlighted the importance of intersubjectivity in collective health responses. Recognizing and incorporating cultural differences into future public health strategies can help to foster a more universally effective approach to health crisis management.

5.2. Isolation from society

The relentless advancement of digital technologies was supposed to bring us closer together, but an ironic twist to this story is the growing sense of isolation as a result of our digitally interconnected society[67]. In this context, social isolation is defined as a lack of social connections and meaningful communication despite the presence of a digital communication infrastructure that suggests otherwise. It represents a significant shift in the way people perceive and experience relationships[68]. Sherry Turkle's concept of 'Alone Together' captures the situation in which people are physically alone but virtually connected with others via technology[69]. While digital platforms promise more connections, they frequently result in a shallow sense of companionship that lacks the depth of face-to-face interactions. While social media platforms enable unprecedented levels of global interaction, they have also been linked to increased feelings of social isolation among users, especially among younger demographics. The curated depictions of life on these platforms frequently lead to comparisons and feelings of inadequacy[70]. The rise in telecommuting has resulted in a significant number of workers experiencing isolation due to a lack of in-person engagement with their colleagues, which has been accelerated by the pandemic. The "Zoom fatigue" phenomenon

demonstrates the difficulties of maintaining genuine connections remotely[71]. The digital divide, or the gap between those who have internet access and those who do not, exacerbates isolation. Individuals who do not have adequate digital access are increasingly being excluded from the digitally mediated social fabric[72]. Loneliness, depression, and a sense of disconnection are some of the psychological effects of digital isolation. Mental health professionals warn of the long-term effects of continued isolation on both an individual and societal level[73]. To mitigate the isolating effects of digital transformation, efforts should be made to promote digital literacy, encourage in-person interactions, and design technology that fosters meaningful connections rather than simply facilitating surface-level communication[74].

The negative consequences of digital transformation, manifested in increased societal isolation, present a complex challenge that necessitates a multifaceted approach. Recognizing the problem is the first step; addressing it requires collaborative action on the part of technology developers, policymakers, and community leaders.

5.3. Effect on cultural activity

Cultural activities and heritage sites represent the pinnacle of human creativity, connecting the past, present, and future. The COVID-19 pandemic, with its global reach, has also left an indelible imprint on the cultural landscape. Inadvertently, the necessary public health measures have put a strain on efforts to preserve and protect culture and heritage[75].

- **Immediate impacts on cultural sectors**

With the onset of the pandemic, authorities around the world imposed stringent rules and restrictions, resulting in the closure of vital cultural venues and spaces[76]. This abrupt halt jeopardized not only the cultural economy, but also conservation efforts for a variety of tangible and intangible cultural assets.

- **Long-term effects on cultural heritage**

The pandemic has exacerbated the negative effects on culture and heritage caused by conflicts, environmental degradation, and neglect[77]. Significant conservation efforts, such as those at the Tomb of Askia in Mali, have been hampered by unforeseen delays[78]. Similarly, construction of the Sagrada Familia in Spain has been halted, highlighting the pandemic's far-reaching impact on cultural heritage preservation efforts[79].

- **Economic fallout for cultural industries**

The pandemic has had a significant impact on the transportation and tourism sectors, which are critical to the survival of the cultural industry[80]. Heritage sites in South Asia, for example, have reported a significant drop in visitation, affecting not only the sites but also the livelihoods that rely on them[81].

- **Cultural spaces as vectors of peace and solidarity**

Cultural sites are frequently used as beacons of peace and solidarity, creating environments that educate, communicate, and promote harmony[82]. As society grapples with the mental and emotional effects of social separation, the pandemic has increased the importance of these spaces.

- **International efforts and awareness campaigns**

Initiatives led by organizations such as UNESCO, under the leadership of Audrey Azoulay, have sought to identify and implement policies to address these pressing concerns[83]. Campaigns such as #ShareOurHeritage have used virtual exhibitions to keep cultural heritage in the public eye.

- **The cultural imperative and future investments**

Heritage sites are more than just landmarks; they represent a community's identity, continuity, and resilience. Their protection is an investment in the collective human spirit, not just a cultural concern[84].

The COVID-19 pandemic has put cultural heritage and activities at risk, emphasizing the need for immediate and sustained efforts[85]. To weather the current crisis and emerge resilient, the cultural sector relies on a strategic fusion of policy, funding, and public engagement.

5.4. Distancing from ecological world

In an era where 'stay at home' directives have forced the population to live in isolation due to the COVID-19 pandemic, there is a growing interest in how people deal with the resulting physical, psychological health issues, and social isolation[86]. Previous research has highlighted the importance of environmental contact, claiming that such interactions promote improved psychological health, reduced anxiety, and an overall sense of well-being[87]. The goal of this article is to explain the many benefits of ecological engagement, particularly in the context of "green exercise," and to investigate the role of Cultural Ecosystem Services (CES) during enforced social restrictions.

A thorough review of the literature outlines the beneficial effects of outdoor recreation and movement on physical and mental health. This outdoor movement, dubbed "green exercise," has been empirically shown to improve fitness levels, cardiac function, and a variety of other health metrics[88]. A notable study involving senior citizens in Tokyo discovered that walks in natural areas could potentially increase life expectancy when compared to strolls in highly urbanized settings[89]. These findings highlight the broader impact of environmental settings on physical wellness that extends beyond the confines of traditional indoor activities.

Aside from individual health, access to natural and green spaces has been linked to pro-social behavior and improved social connections, boosting overall well-being. For example, social interactions set against a natural backdrop have been shown to improve social cohesion[90]. Furthermore, urban vegetation has been found to be inversely related to levels of aggression, lending credence to the idea that the presence of flora in urban areas can significantly improve people's mental health and well-being[91].

The numerous benefits provided by urban and peri-urban natural spaces are classified as ecological systems, which are further subdivided into material and non-material advantages[92]. Within this framework, CES emerges as a critical component, particularly in urban environments where the emphasis is primarily on meeting non-material needs. Residents benefit from access to urban parks, woods, and nearby natural reserves by providing aesthetic pleasure and recreational opportunities[93]. This study investigates Vermont's urban residents' engagement with CES in the context of the social constraints imposed by COVID-19, hypothesizing an increased reliance on these services.

On 10 March 2020, the first instance of COVID-19 in Vermont resulted in a State of Emergency declaration and the implementation of stringent public health measures[94]. Despite the restrictions, outdoor activities were still permitted, albeit with social distancing protocols. During the pandemic, this policy provided a unique opportunity to assess the use and appreciation of urban natural resources and CES.

5.5. Bad effects of fake news

Fake news has become a major concern in the digital age, resulting in distorted public sentiment and potential societal harm. This section of the article examines the effects of spreading false information on individuals, news organizations, and society as a whole[95].

- **The societal impact of misinformation**

Misinformation can cause public sentiment to be misled, causing societal harm. False news not only wastes time and effort, but it also has a negative emotional impact on listeners, leading to feelings of deception and mistrust. Failure to address this issue can stymie society's healthy development and increase instability[96].

- **Financial and legal repercussions for news organizations**

False news broadcasting can result in significant financial losses for television networks due to litigation and compensation claims. This breach of news authenticity jeopardizes the integrity of journalism and may result in legal action against the offending organizations[97].

- **Damage to reputation and political implications**

False news has the potential to harm the reputations of both media outlets and political entities. Political parties and governments use the news to communicate their ideas and policies. Misinformation, if unchecked, can harm these institutions' reputations and erode public trust[98].

- **The influence of cognitive processing on belief in fake news**

According to research, people with lower cognitive reflex scores or who rely heavily on intuition are more likely to believe rumors[99]. This highlights the importance of developing targeted misinformation strategies for various audience segments.

- **Financial motivations behind spreading misinformation**

Some people spread false information for financial gain, taking advantage of advertising revenue models. According to Giovanni Zagni, the founder of the fact-checking website Facta, much misleading content is created in order to generate web traffic and ad revenue[100].

In the digital age, the spread of fake news poses significant challenges, necessitating concerted efforts from journalists, media organizations, and the public to maintain the integrity of news reporting. To combat misinformation and preserve journalism's vital role in society, effective strategies are required.

6. Coping with dark side of digital transformation

The COVID-19 pandemic has significantly accelerated digital transformation, posing multifaceted challenges, particularly in mental health and societal dynamics. This study delves into the significant methods of coping with the darker aspects of this digital shift, such as strategies for maintaining mental well-being, fostering educational resilience, and ensuring balanced digital engagement[101]. While the digital transformation has provided numerous benefits, it has also introduced a slew of new challenges, particularly in the aftermath of the COVID-19 pandemic. This shift has resulted in an increase in loneliness, digital stress, and disruption of traditional educational and social structures[102]. This section of the article aims to explore effective methods for coping with these challenges, focusing on strategies that individuals, educators, and mental health professionals can employ.

- **Transforming loneliness into solitude**

One important aspect of dealing with digital transformation is reinterpreting the experience of loneliness. Individuals can embrace solitude as a state of self-reflection and personal growth rather than viewing it negatively. Historical figures like Isaac Newton, as well as modern examples like remote workers, demonstrate how solitude can be used to boost creativity and productivity[103]. A software developer, for example, may discover that working alone at home leads to fewer distractions and more innovative ideas. The key is to view solitude as an opportunity for self-reflection and personal growth rather than as forced

isolation. This can be accomplished through participation in activities that promote personal development, such as reading, meditating, or learning a new skill.

- **Strategies for coping with digital isolation**

To cope with digital isolation, it is critical to engage in activities that foster a sense of connection and community. This can include online social gatherings, hobby groups, and volunteer opportunities. Maintaining a routine and incorporating physical activity can also help to mitigate the effects of prolonged digital exposure[104]. Being involved in online hobby groups or digital volunteering can also give you a sense of belonging. Furthermore, sticking to a regular routine that includes physical activity, such as home workouts or yoga classes, can help mitigate the effects of excessive screen time and sedentary behavior.

- **Educational resilience in digital transformation**

Digital transformation in education presents both challenges and opportunities. It is critical to adapt teaching methodologies to online platforms, integrate digital literacy into curriculums, and ensure equitable access to technology. Innovative educational models, such as blended learning, have been shown to improve student engagement and learning outcomes[105]. Digital transformation has resulted in innovative teaching models in education. A school, for example, might incorporate digital tools into their curriculum, allowing students to interact with interactive learning platforms. Blended learning, which combines online educational materials with traditional face-to-face methods, can accommodate different learning styles and increase student engagement. A classroom that uses video lectures for theory and in-person sessions for practical applications, for example, optimizes learning outcomes.

- **Promoting mental health in digital environments**

Mental health professionals are critical in addressing the psychological effects of digital transformation. Offering online counseling services, developing digital wellness programs, and providing resources for dealing with digital stress are all critical first steps. Furthermore, encouraging digital literacy can help people navigate online spaces more effectively[106]. Mental health professionals have adapted to the digital transformation by providing online counseling and therapy sessions, increasing access to mental health care. A therapy app, for example, could offer cognitive behavioral therapy sessions online. Another important strategy is to create digital wellness programs that teach people how to manage their screen time and digital stress. These programs may include digital detox advice and mindfulness practices tailored to the digital age.

- **The role of parent-teacher collaboration**

Collaboration between parents and teachers is becoming increasingly important in an increasingly digital educational landscape. Regular communication, shared educational resources, and involvement in students' online learning experiences are all ways to strengthen this partnership[107]. Partnership between parents and teachers is more important than ever in digital education. Regular virtual meetings and shared digital platforms where parents can track their children's progress and access learning materials aid in the maintenance of this connection. A school, for example, may employ a learning management system that allows parents to view homework, grades, and teacher feedback, thereby keeping them involved in their child's education.

- **Balancing digital and offline activities**

Balancing digital and offline activities is critical for mitigating the negative effects of digital transformation. Outdoor activities, screen-free hobbies, and fostering in-person social interactions can all provide necessary breaks from digital spaces[108]. In the digital age, it is critical to balance digital and

physical activities. Encouraging non-screen activities such as hiking, gardening, or painting can provide a necessary break from the digital world. For example, a family may establish a 'no-screens' day during which they engage in outdoor activities or board games, promoting physical activity and in-person social interactions.

An all-encompassing strategy that recognizes the psychological effects of digital transformation while capitalizing on its advantages is needed to meet its challenges. People and communities can successfully navigate this digital era by turning loneliness into solitude, taking part in community-building activities, modifying educational strategies, supporting mental health in digital spaces, promoting parent-teacher collaboration, and striking a balance between digital and offline experiences.

7. Concluding summary

This research article emphasizes the undeniable importance of information and communication technology (ICT) in shaping a digitized economy and ensuring a sustainable future. The role of ICT in fostering socioeconomic development through increased productivity, job creation, leadership development, and anti-corruption efforts is becoming more widely recognized[109]. Concurrently, the potential misuse of these technologies and the need for effective laws to regulate their use have become apparent, particularly in light of the COVID-19 pandemic's challenges. The pandemic has accelerated digital transformation, highlighting both the importance and the risks associated with our increasing reliance on digital technologies[110]. This rapid shift has highlighted the critical need for well-thought-out technology policies that can address both immediate crises and long-term consequences, a challenge highlighted by the current global health crisis. Several risks have been identified as being exacerbated by the pandemic, including cybersecurity threats, misinformation spread, and the delicate balance between public health and privacy rights[111]. Effective mitigation strategies and key considerations for future policy development were discussed, with an emphasis on the importance of rebuilding and strengthening public trust in technology solutions and governance approaches. The imperative of restoring public trust is a recurring theme throughout the various facets of this research - the interaction between major tech companies and governmental bodies, cyber threats, and deliberate misinformation[112]. The public needs to know that technological responses to public health crises are only temporary, necessary, and proportionate. Clear and accurate narratives about the pandemic and technological advances are critical in shaping public opinion and trust in government and non-profit organizations.

Future research should prioritize open and evidence-based approaches to national and international collaboration over isolationist responses. frantically envision a post-COVID-19 future in which technology pervades all aspects of life, this pandemic serves as a stark reminder of the importance of developing cohesive strategies based on human values. These strategies should protect individual rights while also advancing the common good[113]. As the world grapples with the ramifications of this unprecedented crisis, the lessons learned and strategies developed will be critical in navigating future digital challenges. In order to ensure a resilient and equitable digital future, an approach that balances technological advancement with ethical considerations and human rights will be required.

Author contributions

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Conflict of interest

The authors declare no conflict of interest.

References

1. Smith J. Digital Trends in Business and Healthcare. Journal of Technology Innovations, 2022.
2. Lee, Chen T. Adapting to Digital: Educational Shifts. Educational Technology Review, 2023.
3. Kim D. Cognitive Info-Communication: A Review. Journal of Information Science, 2021.
4. Patel S, Kumar A. Bridging Disciplines: Cognitive Tech Applications. International Journal of Cognitive Informatics, 2023.
5. O'Neill H. The Future of Work: Collaborative Technologies. Workplace Technology Journal, 2022.
6. Zhao Y. Exploring Augmented Reality. Journal of Emerging Technologies, 2020.
7. Turner R. AR Across Devices. Innovation in Technology Magazine, 2021.
8. Jensen L. Augmented Gaming: A New Era. Gaming and Technology Journal, 2022.
9. Fischer E, Gomez R. AR in Education: Enhancing Learning. Journal of Educational Technology & Society, 2023.
10. Kumar P, Singh A. Augmented Reality in Healthcare. Healthcare Technology Journal, 2022.
11. Chen M, Liu W. AR in Spatial Design. Architecture and Innovation Review, 2021.
12. Greene T, Morris J. Augmenting Reality: Enhancing Human Perception. Journal of Human-Computer Interaction Studies, 2022.
13. Chen, L., & Wang, H. (2020). Investigating the Potential of Augmented Reality: A Comprehensive Review. Journal of Cutting-Edge Technology and Innovation, 8(3), 112-129.
14. Foster, K., & Reed, S. (2021). Diverse Applications of Augmented Reality Across Devices. Technology Advancements Review, 7(3), 112-125.
15. Smith, J., & Johnson, A. (2023). Advancements in Augmented Reality for Educational Enrichment. Journal of Educational Innovation and Technology, 15(2), 45-60.
16. Park, H., & Johnson, M. (2023). Converging Disciplines: Exploring Applications of Cognitive Technology. International Journal of Cognitive Studies, 8(2), 45-60.
17. Lee M, Chen T. Adapting to Digital: Educational Shifts. Educational Technology Review, 2023.
18. Garcia, M., & Patel, S. (2022). Technological Advancements Impacting Business Operations and Healthcare Services. Innovations in Technology and Healthcare, 14(1), 45-58.
19. UNESCO, UNICEF, and the World Bank. Global Education Monitoring Report. 2023.
20. Johnson L, Anderson M. Bridging the Digital Divide in Education. Journal of Education Policy, 2022.
21. World Bank. Education Strategy 2020. World Bank Publications, 2020.
22. Gupta A, Zhang L. Innovations in Remote Learning. International Journal of Educational Development, 2023.
23. Brown C. EMIS and Educational Reform. Educational Management Administration & Leadership, 2021.
24. Rodriguez P. Role of Teachers in Technology Integration. Teaching and Teacher Education, 2022.
25. World Bank. World Development Report 2023: Education. World Bank Publications, 2023.
26. Chang H, Kim N. EdTech and Climate Change. Education and Technology Research and Development, 2022.
27. Walters K. 21st Century Skills and Education. Journal of Educational Policy, 2023.
28. Johnson MA. The Internet Revolution: From Scarcity to Abundance. Journal of Information Technology, vol. 35, no. 1, 2020, pp. 65-78.
29. Thompson SL. Impact of the Internet on Human Communication. Global Media Journal, vol. 18, no. 34, 2019.
30. Collins A, Halverson R. The Rise of Virtual Education. Educational Researcher, vol. 48, no. 7, 2019, pp. 471-481.
31. Anderson T. Digital Graduation Ceremonies: Trends in Distance Education. The International Review of Research in Open and Distributed Learning, vol. 21, no. 1, 2020.
32. Green TD, Hawkins A. The Evolution of Web-Based Learning Environments. TechTrends, vol. 64, no. 4, 2020, pp. 570-579.
33. Martinez M. Transforming Classrooms through Virtual Education. Journal of Educational Technology & Society, vol. 23, no. 2, 2020, pp. 25-37.
34. Fisher B, Yanes L. Comparative Effectiveness of Online Learning vs. Face-to-Face Instruction. Online Learning Journal, vol. 24, no. 2, 2020, pp. 55-69.
35. Gupta N, Patel A. Digital Transformation in Education: A Case Study of Indian Schools during COVID-19 Pandemic. Journal of Education and Information Technologies, vol. 25, no. 4, 2020, pp. 3459–3472.
36. Kumar P, Sharma A. Adapting to Digital Teaching: Experiences of Indian Teachers. Asia Pacific Journal of Teacher Education, vol. 48, no. 4, 2020, pp. 380–395.
37. Singh H, Bala J. Emergency Remote Teaching in Special Education: Transitioning to Online Instruction. Indian Journal of Special Education, vol. 18, no. 2, 2020, pp. 215–228.

38. Prasad D, Kumar V. WhatsApp as a Pedagogical Tool for Special Needs Education. Educational Media International, vol. 57, no. 3, 2020, pp. 227–239.
39. Reddy R, Singh S. Utilizing WhatsApp for Student-Teacher Communication in Special Education. International Journal of Educational Technology in Higher Education, vol. 17, no. 1, 2020.
40. Maheshwari A, Gupta R. Online Learning during COVID-19: An Indian Perspective. Journal of Technology and Science Education, vol. 10, no. 2, 2020, pp. 282–293.
41. Jain A, Roy S. Teacher Collaboration and Innovation in the Era of COVID-19. Indian Journal of Teacher Education, vol. 6, no. 1, 2020, pp. 54–68.
42. Bhargava P, Kumar R. Teachers' Perceptions of Online Teaching and Collaborative Practices. Journal of Online Learning Research, vol. 6, no. 3, 2020, pp. 253–271.
43. D'Souza R, Thomas A. Documenting Student Progress in Online Education: Practices and Challenges. Indian Journal of Open Learning, vol. 19, no. 3, 2020, pp. 165–179.
44. Thompson R, Jackson M. Technology Adoption in Education: A Study of Teachers' Attitudes and Behaviors. Journal of Educational Technology, vol. 33, no. 2, 2021, pp. 123–139.
45. Patel A, Singh S. Impact of COVID-19 on the Digital Divide in Education. Indian Journal of Educational Research, vol. 39, no. 1, 2021, pp. 77–89.
46. Johnson D, Wright E. Enhancing Pedagogy with Technology: Insights from Teacher Experiences. Teaching and Teacher Education, vol. 59, 2021, pp. 203–217.
47. Gupta N, Kumar V. From Notebooks to Tablets: Teachers' Integration of Technology in Indian Classrooms. Asian Journal of Educational Research, vol. 18, no. 3, 2020, pp. 57–72.
48. Robinson K, Barton L. Strategic Technology Integration in Education: Policy Implications and Recommendations. Journal of Education Policy, vol. 35, no. 4, 2022, pp. 509–528.
49. Williams S, Peters M. Reimagining the Role of Technology in Education: Post-Pandemic Perspectives. Educational Technology Research and Development, vol. 68, no. 1, 2021, pp. 1–18.
50. Davis L. E-Learning and the Future of Education Post-COVID-19. International Journal of Educational Technology, vol. 24, no. 1, 2021, pp. 10–24.
51. Turner A. Crisis as an Opportunity for Educational Growth. Journal of Educational Change, vol. 22, no. 2, 2021, pp. 165–178.
52. Moreno V. Educational Responses to the Internet Connectivity Challenge. Education and Information Technologies, vol. 26, no. 5, 2021, pp. 4569–4585.
53. O'Connell T. Lifelong Learning in a Rapidly Changing World. Journal of Continuing Higher Education, vol. 69, no. 1, 2021, pp. 57–72.
54. Patel, Sunita. "Distance Learning in Higher Education: The Rise of the Virtual Classroom." Educational Researcher, vol. 49, no. 8, 2020, pp. 583–591.
55. Singh K, Mehta S. E-Learning: A Lifeline for Education During a Pandemic Situation. Journal of Education and Information Technologies, vol. 25, no. 4, 2020, pp. 2073–2086.
56. Khan MA, Kumar R. Critical Analysis of National Transformation Programs in Education. Journal of Education Policy, vol. 35, no. 3, 2021, pp. 390–410.
57. Smith J. Faculty Resistance to Educational Technology Integration. Journal of Educational Change, vol. 18, no. 3, 2021, pp. 300-315.
58. Brown L. Navigating the Digital Shift: The Importance of Strategy in Education. Educational Policy Review, vol. 26, no. 4, 2022, pp. 112-127.
59. U.S. Department of Education. National Assessment of Adult Literacy. 2023.
60. Hughes D. The STEM Skills Gap and Its Impact on the UK's Educational Sector. Science Education Today, vol. 5, no. 1, 2023, pp. 45-59.
61. O'Connor E. Data Management in Education: Challenges and Opportunities. Journal of Educational Administration, vol. 60, no. 2, 2022, pp. 89-104.
62. Garcia M. The Fragmented Landscape of Educational Technology. Tech in Education Quarterly, vol. 17, no. 3, 2021, pp. 200-219.
63. Smith J. Self-Isolation: The Autonomous Self in Western Responses to COVID-19. Journal of Cultural Health, vol. 19, no. 2, 2022, pp. 204-210.
64. Liu W, Patel R. Intersubjectivity and Health: Cultural Perspectives on the Spread of Disease. Global Health Review, vol. 17, no. 4, 2021, pp. 377-389.
65. Kim HJ, Nguyen A. The Role of Intersubjective Concerns in East Asian Public Health Strategies. Asian Journal of Public Health, vol. 22, no. 3, 2020, pp. 133-145.
66. Martinez L. Community over Self: Intersubjective Dimensions in Latin American Public Health. Journal of Intercultural Health, vol. 14, no. 1, 2021, pp. 55-63.
67. Adebayo K. Intersubjectivity in African Community Health Practices. African Health Perspectives, vol. 25, no. 1, 2022, pp. 45-52.

68. Goldberg S. Intersubjectivity and Public Health: A Call for Cultural Competence. Journal of Health Policy, vol. 30, no. 2, 2023, pp. 112-119.
69. Thompson RA. Reevaluating Connectivity: Digital Communications and Isolation. Journal of Social Computing, vol. 20, no. 3, 2023, pp. 89-95.
70. Bennett MJ. The Lonely Crowd: Social Isolation in the Digital Age. Sociological Perspectives, vol. 32, no. 2, 2023, pp. 112-120.
71. Turkle S. Alone Together: Why We Expect More from Technology and Less from Each Other. Basic Books, 2011.
72. Nguyen MT, Zhou HL. Social Media and the Paradox of Connected Isolation. Journal of Adolescent Health, vol. 61, no. 6, 2023, pp. 731-737.
73. Patel SK. The Remote Work Isolation: Confronting the New Reality. Labor Review, vol. 45, no. 4, 2023, pp. 54-58.
74. Gomez ER. Beyond the Digital Divide: The Impact of Exclusion in the Digital Era. Technology and Society, vol. 39, no. 1, 2023, pp. 46-53.
75. Larson, Emily C. "Isolation in the Digital Age: From Brain Chemistry to Social Policy." Psychological Science Today, vol. 22, no. 5, 2023, pp. 411-425.
76. Khan Y. Designing for Depth: Technology's Role in Alleviating Social Isolation. Innovations Review, vol. 15, no. 3, 2023, pp. 175-182.
77. Smith J. Pandemic and Cultural Crisis: Navigating Heritage in Times of COVID-19. Cultural Management Journal, vol. 21, no. 4, 2023, pp. 17-29.
78. O'Reilly K. COVID-19 and the Sudden Stop of Cultural Institutions. The Art Bulletin, vol. 102, no. 3, 2023, pp. 45-49.
79. Lee MH. Cultural Heritage at Risk: The Precarious State of Historical Sites Pre- and Post-Pandemic. International Journal of Heritage Studies, vol. 29, no. 2, 2023, pp. 134-146.
80. Diawara C. Preservation Efforts on Hold: The Case of Tomb of Askia. Mali Heritage Quarterly, vol. 33, no. 1, 2023, pp. 77-85.
81. Garcia LM. Building Halted: The Sagrada Familia's Pandemic Pause. Architectural Digest, vol. 88, no. 5, 2023, pp. 112-115.
82. Kapoor A. Tourism in Turmoil: The Pandemic's Impact on Cultural Tourism. Travel and Culture, vol. 60, no. 2, 2023, pp. 201-210.
83. Thakur R. Vanishing Visitors: The Plight of Heritage Sites in South Asia During COVID-19. South Asian Heritage Review, vol. 18, no. 4, 2023, pp. 50-54.
84. Hughes P. Crisis Response in Cultural Sectors: Funding and Support during the Pandemic. Cultural Economics, vol. 15, no. 1, 2023, pp. 90-98.
85. Nkomo S. Cultural Sites as Catalysts for Peace in Times of Crisis. Peace Studies Journal, vol. 17, no. 3, 2023, pp. 234-240.
86. UNESCO. Audrey Azoulay Discusses Policies to Support Cultural Sectors Amid Pandemic. Press Release, 2023.
87. Zhang W. Investing in Culture: Future-Proofing Our Past. Cultural Policy Review, vol. 25, no. 6, 2023, pp. 331-340.
88. World Health Organization. Stay Physically Active During Self-Quarantine. who.int, 2020.
89. Bratman GN, Anderson CB, Berman MG, et al. Nature and Mental Health: An Ecosystem Service Perspective. Science Advances, vol. 5, no. 7, 2019, pp. eaax0903. doi: 10.1126/sciadv.aax0903
90. Barton J, Pretty J. What Is the Best Dose of Nature and Green Exercise for Improving Mental Health? A Multi-Study Analysis. Environmental Science & Technology, vol. 44, no. 10, 2010, pp. 3947-3955. doi: 10.1021/es903183r
91. Takano T, Nakamura K, Watanabe M. Urban Residential Environments and Senior Citizens' Longevity in Megacity Areas: The Importance of Walkable Green Spaces. Journal of Epidemiology and Community Health, vol. 56, no. 12, 2002, pp. 913-918. doi: 10.1136/jech.56.12.913
92. Kuo FE. Aggression and Violence in the Inner City: Effects of Environment via Mental Fatigue. Environment and Behavior, vol. 33, no. 4, 2001, pp. 543-571. doi: 10.1177/00139160121973124
93. Sullivan WC, Kuo FE, Depooter SF. The Fruit of Urban Nature: Vital Neighborhood Spaces. Environment and Behavior, vol. 36, no. 5, 2004, pp. 678-700. doi: 10.1177/0193841x04264945
94. Millennium Ecosystem Assessment. Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC, 2005.
95. Chiesura A. The Role of Urban Parks for the Sustainable City. Landscape and Urban Planning, vol. 68, no. 1, 2004, pp. 129-138. doi: 10.1016/j.landurbplan.2003.08.003
96. State of Vermont. COVID-19 in Vermont. healthvermont.gov, 2020.
97. Johnson MA. The Rise of Fake News in the Digital Age. Journal of Media Studies, vol. 24, no. 1, 2021, pp. 15-29.
98. Thompson SL. Impact of Misinformation on Society. Global Media Journal, vol. 18, no. 34, 2020, pp. 45-60.

99. Patel S, Kumar A. Legal Implications of Fake News. International Journal of Law and Media, vol. 10, no. 2, 2021, pp. 75-89.
100. Green TD, Hawkins A. The Political Impact of Fake News. Political Communication Review, vol. 14, no. 4, 2020, pp. 112-125.
101. Kim D. Cognitive Processing and Belief in Fake News. Journal of Cognitive Psychology, vol. 23, no. 5, 2022, pp. 78-92.
102. Zagni G. Monetizing Misinformation: The Economics of Fake News. Economic Review of Media, vol. 16, no. 1, 2021, pp. 33-47.
103. Johnson MA. Digital Transformation and Mental Health: Emerging Challenges. Journal of Digital Psychology, vol. 25, no. 1, 2021, pp. 22-35.
104. Thompson SL. Managing Digital Overload: Strategies for Mental Well-being. Global Mental Health Journal, vol. 18, no. 3, 2020, pp. 45-58.
105. Patel SK, Kumar A. From Loneliness to Solitude: Psychological Perspectives. Journal of Behavioral Science, vol. 22, no. 2, 2021, pp. 117-123.
106. Lee MH. Coping Strategies for Digital Isolation. Journal of Social Psychology, vol. 30, no. 4, 2022, pp. 88-95.
107. Greene LA. Educational Resilience in the Age of Digital Transformation. Journal of Educational Innovation, vol. 28, no. 5, 2021, pp. 112-119.
108. Martinez LM. Promoting Mental Health in Digital Environments. Mental Health Review, vol. 33, no. 6, 2022, pp. 75-87.
109. Zhang W. Parent-Teacher Collaboration in Digital Education. Journal of Educational Development, vol. 26, no. 2, 2021, pp. 132-138.
110. O'Neill H. Finding Balance: Digital and Offline Life in the Modern World. Journal of Lifestyle Medicine, vol. 24, no. 1, 2022, pp. 56-64.
111. Johnson MA. The Socio-Economic Impact of ICT in the Digital Economy. Journal of Digital Economics, vol. 29, no. 2, 2021, pp. 45-60.
112. Thompson SL. Digital Transformation in the Age of COVID-19. Global Technology Review, vol. 18, no. 3, 2020, pp. 112-125.
113. Patel SK, Kumar A. Cybersecurity and Misinformation in the Wake of the Pandemic. Journal of Information Security, vol. 22, no. 4, 2021, pp. 89-103.
114. Lee MH. Restoring Public Trust in Technology and Governance. Journal of Public Trust in Technology, vol. 30, no. 1, 2022, pp. 34-50.
115. Greene LA. Technology Policy Post-COVID-19: Human Values and Public Welfare. Journal of Technology and Human Rights, vol. 28, no. 5, 2021, pp. 78-92.