



Children with Chronic Illnesses and ICT

Marianthi Papadimitriou



School with Class
Foundation

Be
Internet
Awesome.

2nd part of

Be Internet Awesome For All

Developing digital citizenship in children with various educational needs

Authorship

Marianthi Papadimitriou, H.O.P.E. (Hospital Organisation of Pedagogues in Europe)

‘insights from practice’

Theodora Armenkova, Panayiotis Kiskireas
Justyna Stańczak-Szenajch

Coordination

The Polish Be Internet Awesome (BIA) Team
at the School with Class Foundation

Editorial correction

David Rix

Layout and typesetting

Beata Danowska and Marta Duda, Dobry Skład

Other parts of the manual can be found at bia4all.eu



Publisher

School with Class Foundation
Śniadeckich 19, 00-654 Warsaw, Poland

szkolazklasa.org.pl
bia4all.eu

First edition, Warsaw 2023
ISBN 978-83-67621-09-0

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Publication created by the School with Class Foundation as part of the Be Internet Awesome program brought together by the Foundation with support from Google.org.

1 Chronic Paediatric Illness

Chronic illness during childhood (e.g. asthma, diabetes mellitus, epilepsy, heart conditions, haemato-oncological diseases, kidney diseases, cystic fibrosis, HIV) is a challenging experience with potentially a detrimental impact on the child and the family (Barlow & Ellard, 2004; Hall et al., 2019; Taylor et al., 2008).

Chronic medical conditions in children have been significantly associated with an increased risk of learning difficulties, lower academic achievement and student engagement, increased school absenteeism not explained by health reasons alone and early school termination independent of socio-economic status (Breslau et al., 2008; Champaloux & Young, 2015; Forrest et al., 2011; Leach & Butterworth, 2012; Lum et al., 2017). Children and Young People (CYP) with chronic conditions are also more likely to report poor psychosocial and quality of life outcomes including emotional vulnerability and mental health challenges, disempowerment and loss of independence and control over their lives, social isolation and a diminished sense of school belonging (Iannucci & Nierenberg, 2022; Jamieson et al., 2014; Kirkpatrick, 2020).

Advances in medical knowledge and technology have increased life expectancy and contributed to improving the functional abilities of children with life-threatening and life-limiting conditions (Pui et al., 2018). This has shifted the

professional focus from treating the illness to providing holistic care and helping the child maintain quality of life and participation in the usual childhood activities where CYP with medical needs may be at risk of exclusion (Ellis et al., 2013).

This chapter examines the use of the internet and Computer Mediated Communication (CMC) to mitigate many of the challenges that CYP with chronic, life-threatening and life limiting illnesses face and support them in continuing their education, break isolation and social exclusion and regain control over their lives and the management of their health.

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The Role of Hospital Education and the Hospital Teacher

INSIGHTS FROM PRACTICE

Hospital Education plays a pivotal role in facilitating the comprehensive recovery and restoration of a child's health. There are two distinct aspects to the role of Hospital Education. Firstly, there is the academic dimension, which involves offering continuity in education, assisting young individuals in their educational progress, supporting them in succeeding in their exams and achieving their academic goals. Secondly, there is the emotional aspect and the sense of hope and normalcy that is naturally associated with attending school. The focus here is on providing a supportive framework as part of a multidisciplinary team to help young people regain a sense of normalcy and agency in their lives, rebuild their self-confidence, and integrate fully into mainstream school and everyday life as they make a recovery. Both of these aspects, the academic and the social-emotional, are crucial and play a vital role in the full restoration of a child's health.

Panayiotis Kiskireas – one of the first hospital teachers in Greece. He has been working in the field of Hospital Education since 1988 at the St Sophia Hospital School in Athens where he has also served as a head-teacher.



The main purpose of the hospital teachers' work is to support the healing process. Pupils who are in hospital complete their compulsory education so that when they leave the hospital, they can return to their home school without falling behind. They develop their interests and passions and, acquire new skills, which helps them to forget, at least for a while, the difficulties of hospitalisation.

Justyna Stańczak-Szenajch – has been working in hospital schools in Poland since 2013. Currently, at the Special Primary School No. 287 at the Children's Clinical Hospital.

2 The Role of the Internet: Risks and Opportunities

The Internet can play an important role in the holistic support of CYP with medical needs by promoting continuity in education, psychosocial wellbeing and active engagement in their health management. This section discusses the risks, challenges, and opportunities in these three areas.

Specific Risks and Challenges

Concerns in this area remain related to the inequity of access to digital and telehealth services especially for children from disadvantaged backgrounds (Badawy & Radovic, 2020). Also, technological difficulties have been reported to pose challenges on the educational use of ICT. For example, considerable variance and constraints on the availability of computers, printers and internet access, and challenges related to the connectedness between the hospital and the mainstream school, with variable access to Wi-Fi and slow transmission, highlight a need for additional funding and the organisation of the technological infrastructure across the different settings (Maor et al., 2016; Weibel et al., 2020). Moreover, the medical orientation and timetable clashes between Health and Education can mean that arranging connections with mainstream schools is challenging and time-consuming (Ellis et al., 2013). Good organisation and co-ordination between the hospital

and the mainstream school may increase connectedness and child-school interaction.

Regarding videoconferencing and academic attainment, the findings have been mixed. On the one hand, the use of CMC is reported to keep education alive, increase willingness and motivation to engage with schoolwork, be part of the schooling cohort and increase the confidence of the CYP about their own abilities as students (Zhu & Van Winkel, 2015). On the other hand, studies suggest that the benefits of CMC are primarily social and that technology has a negligible or even a negative impact on education due to the challenges related to connectivity, a fragmented schedule and medical routines, as well as difficulty concentrating on the on-line lesson because of other distractions (e.g. a noisy hospital environment) or physical pain (Ellis et al., 2013; Maor & Mitchem, 2015; Zhu & Van Winkel, 2015).

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Remote Participation in Lessons at the Child's Mainstream School

Occasionally, mainstream schools equipped with the necessary resources would allow children in the hospital to participate in lessons remotely. Unfortunately, the children themselves may soon give up on this form of learning. School classes typically can last for several hours, and often there can be chaos in the classroom. For a hospitalised child, watching online lessons can impose a significant mental strain that is sometimes incompatible with the child's health needs and the medical treatments in the hospital. While maintaining contact and a sense of belonging through videoconferencing with classmates is crucial, the daily routine of attending lengthy online lessons, further complicated by a remote connection, can be overwhelming.

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Also, parental consent and safeguarding concerns seem to add to the challenges of video connectedness with many parents objecting to videoconferencing on the grounds that the appearance would be disturbing to their children (Ellis et al., 2013).

On the part of the hospitalised CYP, being visible on a camera might be experienced as intrusive and trigger feelings of embarrassment linked to physical appearance (e.g. treatment-related changes, IV drips, nasogastric feeding tubes, hospital clothing), or the noisy hospital environment (e.g. noisy machines, other children crying, interruptions by medical staff) (Ahumada-Newhart & Olson, 2019; Hopkins et al., 2014). The videoconferencing experience might also evoke challenging feelings such as anger, frustration and sadness in the CYP for being apart from their classmates and friends and missing out on important school events. All these issues highlight the need for good preparation and the support of all those involved before, during and after the use of CMC within the hospital and educational setting.

Concerns have also been raised about safeguarding, data protection and security issues as hospitalised children and young people may often access the internet without adequate adult supervision. They may also be provided with access to their medical records without adequate guidance on how to keep the health records safe. CYP with medical needs need to be guided and supported in disclosure decisions and how and when to share sensitive medical information with others (Diffin et al., 2019).

Specific Opportunities

Continuity in Education

CYP with chronic illnesses experience many disruptions and discontinuities in their lives due to repeated hospitalisations and treatments (Poku & Pilnick, 2022). To provide normalcy, a sense of belonging and continuity in education, mainstream and hospital schools have been employing a range of technologies to support individual needs, including:

- The use of videoconferencing systems (e.g. Zoom, Skype or Microsoft teams), ambient technology applications (Wadley et al., 2014), telepresence robots like PEBBLES (Weiss et al., 2001) and AVI-1 (Weibel et al., 2020) and specialist educational applications and platforms like BETNET (www.bednet.be) (Zhu & Van Winkel, 2015) and the 'Presence App' (Hopkins et al., 2014) to promote synchronous and asynchronous communication with the class and support inclusion.
- Access to podcasts and on-line lessons to continue their learning in their own time and when feeling better.
- Access to web-based school platforms to keep-up with mainstream schoolwork (Maor et al., 2016).

Mobile and Internet technologies provide opportunities for learning and easy access to information and educational resources that would not be possible in a hospital setting (Maor & Mitchem, 2020). Videophones, in particular, seem to present an easily accessible, low-cost and flexible technology solution to help vulnerable CYP stay connected and keep up with their education (Maor & Mitchem, 2015).

Videoconferencing technology and telepresence robots have been reported to increase the sense of belonging, help maintain social contact with peers and support hospitalised CYP to participate in school activities that they would otherwise be excluded from (Powell et al., 2021; Soares et al., 2017; Weibel et al., 2020). Video-connectedness also seems to help lessen the social anxiety from prolonged absence and treatment-related changes in appearance and help the CYP feel more confident about their reintegration into their main school (Zhu & Van Winkel, 2015). Such interventions also seem to help the class develop empathy and understanding of the CYP's health experience, become accustomed to the physical appearance of the CYP and reduce the occurrence of bullying (Ellis et al., 2013). Given the concerns raised in the literature regarding the safety of internet access, disclosure and data protection, as well as the social and emotional challenges but also benefits of connectedness, it is essential to establish mechanisms to ensure the optimal utilization of technologies while minimising any negative consequences.

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Overcoming Loneliness and Isolation

Our pupils, especially those in the oncology units and isolation wards, often endure a profound sense of loneliness and seclusion. Separated from their peers, friends and family, sometimes even from their parents, they face a challenging and lonely journey to recovery. Confinement within the hospital walls can deprive these children of normal social interactions and familiar support systems, causing feelings of loneliness, sadness and disconnection. It is crucial to recognise the emotional toll that hospitalisation takes on these children and to prioritise measures that alleviate their sense of seclusion through compassionate care, creative learning activities, and meaningful connections with loved ones and peers. Towards this end, at our hospital school, we often use video-conferencing systems like Face-Time, Zoom and Skype to connect to the mainstream school and promote a supportive and inclusive environment that nurtures our pupils' well-being and helps them feel connected and included in their regular school community.

Theodora Armenkova – has been working in hospital education in Bulgaria since 2016. She is currently working as a hospital teacher in the paediatric oncology department at the University Hospital 'Queen Joanna – ISUL' in Sofia.

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Social-Emotional Wellbeing

Technology can offer many opportunities to support children's psychosocial wellbeing when in confined healthcare spaces and help them establish a healthier personal identity that focuses on being a regular young person rather than simply a patient confined in a bed and defined by their illness (Lambert et al., 2014; Tomberli & Ciucci, 2021; Weibel et al., 2020).

Mobile and social technology is reported to help the CYP and their parents remain connected, share the journey they have travelled with significant others and access the social support necessary to keep them afloat during this turbulent and challenging time in their lives (Maor & Mitchem, 2020). Maintaining contact with the outside world and accessing social support is considered a key predictor of positive adjustment for a CYP with chronic illness and their families (Ellis et al., 2013; Lambert et al., 2014).

Specifically, the use of videophones with friends and family is reported to increase smiling and laughing and help maintain a sense of normalcy and connectedness (Maor & Mitchem, 2015). Also, on-line peer groups operating through technologies like Facebook, Instagram, Snapchat and websites with discussion forums seem to function as a safe space where CYP and their families can collectively share their experiences and feelings and receive support on managing specific therapies and services or ways to maintain a healthy and normal life (Kirk & Milnes, 2016). On-line peer-support groups seem to also have a positive impact on quality of life, help reduce stress, anxiety and depression levels and increase retention in healthcare (Berkanish et al., 2022).

Web-based virtual communities designed to bring together paediatric patients like Zora and Starbright World in the US and Canada (Battles & Wiener, 2002; Bers et al., 2010; Nicholas & Ba, 2007) and Solas in Ireland (Lambert et al., 2014) have been successfully used to support CYP's education, entertainment, socialisation and treatment. Such networks have been reported to decrease withdrawal behaviour, help the CYP feel significantly less lonely, and increase medical adherence and willingness to return to the hospital (Maor & Mitchem, 2020). The gaming element incorporated into such and other technologies also seems to offer significant psychological therapeutic benefits as it may function as a mental escape and a playful distraction from the stressful medical treatments and hospitalisation (Maor & Mitchem, 2020).

Health Management

On-line health platforms for CYP with medical needs are becoming increasingly available (e.g. the paediatric platform 'MyGosh', at Great Ormond Street Hospital, London). These platforms may allow CYP and their families to digitally access medical records and letters, manage medical appointments and communication with the medical team and access health-related information and support remotely (Kirk & Milnes, 2016).

The use of on-line health record systems and platforms is reported to increase CYP's knowledge and understanding of their health condition or disease process (King et al., 2017; Mörelius et al., 2021), to increase adherence to therapy and improve control over the management of their condition

(Byczkowski et al., 2014; Piras & Zanutto, 2014), as well as patient – health-care provider relationships and communication (Carini et al., 2021; Kruse et al., 2015). This in turn may lead to improved self-advocacy skills and more active CYP engagement in the form of asking questions and initiating conversations about their care. It may also lead to a greater likelihood of multidisciplinary shared decision-making and the long-term improvement of health outcomes for these CYP (Diffin et al., 2019).



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3 Recommendations

Given the above risks and opportunities, some key recommendations for educators working with children with chronic illnesses can be formulated as follows:

- **Restoring social connectedness as soon as possible:** Hospitalisation enforces abrupt separation from friends and family with a direct impact on a CYP's social relations and emotional well-being (Hall et al., 2019). Using CMC as early as possible to link to the outside world and restore connectedness with significant others, including the home-school community, should be a priority in helping to normalise life in the hospital and promote social and emotional wellness.
- **Bringing CYP together as part of on-line paediatric communities:** It is also important to help link CYP with similar conditions and experiences together and establish supportive on-line paediatric communities that would function as a safe network to help these CYP and their families stay afloat during their most challenging times (Kirk & Milnes, 2016).
- **Promoting active engagement and school inclusion:** Digital communication offers many opportunities to support continuity in education and peer connectedness (Maor & Mitchem, 2020). However, technology alone is not sufficient. Research suggests that hospitalised CYP feel

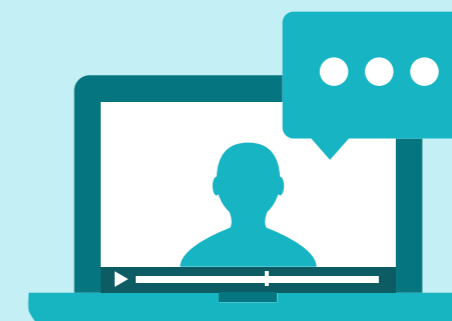
more socially connected and perform better academically when they are supported and helped to actively engage in school activities rather than when they simply use technology to observe school lessons and events remotely (Tomberli & Ciucci, 2021). Particular attention should be given to support the CYP to engage actively in the school activities and to encourage peers to include their friend in group work and make them feel active and valued members of the school community.

- **Preparing adequately for video-conferencing:** Video conferencing and robotic telepresence can provide an invaluable means of connecting the CYP with their regular community of learners and help maintain a sense of belonging (Ahumada-Newhart & Olson, 2019). However, there can also be resistance or emotional difficulty (a) on the part of the mainstream school with observing visually confronting images of children in pain or with debilitating illnesses and (b) on the part of the hospitalised CYP to being visible on video, conscious of treatment-related changes in their appearance and the distracting hospital environment (e.g. noises, machines or other children crying) (Maor & Mitchem, 2015). Photo sharing has been suggested as a good starting point to inform the class about treatment-related changes in appearance and increase understanding and empathy before videoconferencing without disrupting the child's privacy in the hospital (Maor

- & Mitchem, 2015; Wadley et al., 2014). Similarly, the CYP should be adequately prepared to meet their peers and well-supported to avoid disappointment and frustration about not being able to be with their friends and for missing out on important school events.
- The need for **parental consent** may pose additional challenges to video-conferencing with some parents agreeing and others disagreeing to video-connectedness (Ellis et al., 2013). Parental concerns should be taken into consideration seriously and every effort should be made to help them develop their understanding of the importance of social-connectedness initiatives, taking into account the needs, readiness and feelings of everyone involved.
 - **Coordinating learning between the hospital-school and the main-school:** The increasing use of portal systems in mainstream schools means that pupils are progressively more able to access information and assessment tasks through their school's website (Maor et al., 2016). At the same time, there seems to be a lack of co-ordination between hospital schools and mainstream schools to support continuity in education and a scarcity of 'best-practice' educational resources available to these CYP whenever they are able to study (Maor & Mitchem, 2015). It would be helpful to promote better collaboration between hospital-schools and main schools to support learning and explore which strategies, technologies and resources and with which children and under what conditions it would be supportive to use Information and Communication Technologies (ICT) to promote continuity in education and independent learning.
 - **Teacher training on ICT and mobile technologies:** The use of ICT and mobile technologies in the hospital can play an important role in providing continuity in education and connectivity with the home school and make Hospital Education meaningful, enjoyable and practical (Mccarthy et al., 2019). Despite its importance, there seems to be a lack of teacher training in the use of ICT in the paediatric sector with many hospital teachers reporting a need for relevant training to advance their knowledge and understanding of the educational use of multimedia technologies (Maor et al., 2016). Future endeavours could focus on developing a professional development model on the use of ICT grounded in active and reflective teaching practices and exemplary paedagogies from the Hospital Education field, as well as a reservoir of best practice resources including educational, rehabilitative and recreational applications that would make learning more enjoyable, could offer a mental escape and minimise children's suffering.
 - **Using technology creatively:** Chronic childhood illness is linked to increased dependency on others and feelings of inadequacy and perhaps failure as CYP often miss out on regular childhood experiences that may lead to a feeling of personal accomplishment and achievement (Pinquart, 2013; Taylor et al., 2008). The use of technology and creative applications (e.g. animation software, movie maker, podcasts and digital storytelling) to produce something they are really proud of, something more than they are typically used to achieving, may help develop a positive self-image and restore the CYP's perceptions about their overall competences and abilities (Maor & Mitchem, 2020).

Over the years, various Massive Open Online Courses (MOOCs) such as 'Coursera', 'Udemy', 'Khan Academy', and 'Skillshare' have been developed. However, these platforms primarily offer courses in English and cater to academic or professional levels, often requiring payment. Another widely known resource is gamified algorithmically orchestrated modern language courses like 'Duolingo', 'Busuu', 'Memrise' and 'Drops', each with its own pros and cons. The popular TED talks in the forms of mini-lectures often attract teachers seeking to expand their knowledge on a subject rather than school-age pupils. A great example is the 'Brilliant' portal, which offers short interactive lessons on reasoning in science and maths. However, similar to other resources, it is only available in English, though not for a fee.


Overall, while there are several online platforms and resources available for learning, there is still a need for diverse, accessible and free educational material in different languages and for different proficiency levels. Hospital Schools would greatly benefit from the development of a database or a curated list of freely available online multimedia resources and educational material in the children's native language. These resources such as podcasts, quizzes or short educational videos should be tailored to the children's ability and age, allowing them to access and engage with the content at their own pace and time. It would be ideal if each



electronic resource, whether a podcast or a video, covers a specific topic within a particular subject area. This would provide teachers with a valuable tool to enhance their teaching methods and support their pupils' learning in a more enjoyable, easily accessible and targeted manner.

What would also help in our day-to-day practice would be digital solutions that would facilitate the coordination of learning between the mainstream school and the hospital – a space to exchange information, assignments and tests between schools and teachers from the two schools. At present this contact is usually by phone or e-mail.

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- **Developing web-content:** CYP with medical needs should also be provided with opportunities to be more involved and actively contribute to the development of web-content, for example with personal stories and experiences of the impact of the illness on the self, advice on health management, school life and peer relations. Therefore, these CYP should be supported to become more active users of the internet through blogging, tagging and social networking.
- **Promoting on-line safety:** Concerns around confidentiality and safe internet use in the hospital setting have often been raised in the literature, which considers CYP with medical needs a vulnerable pupil population (Maor & Mitchem, 2020). Hospitalised CYP need to be supported on how to stay safe on-line by thinking, for example, carefully about what they post on the internet, being aware of fake on-line identities and how to protect their own identity and personal information, and letting adults know about on-line choices and contacts. Establishing regular discussions with the CYP about their on-line experiences and ways to stay safe is considered particularly important as CYP with medical needs may spend more time on-line, often unsupervised, when in hospital (Maor & Mitchem, 2020).
- **Dealing with cyberbullying:** CYP with chronic illnesses are three times more likely to experience bullying compared to their healthy counterparts mainly due to treatment-related changes in appearance (Pinquart, 2017). Applying psychoeducational interventions like [CancerEd](#)  to raise awareness in mainstream schools about the impact of illness and medical treatments on the CYP has been reported to substantially increase peer empathy and reduce bullying (Collins et al., 2019). More research is needed to understand how social connectedness can be facilitated in the hospital setting for these CYP without exposing them to harm or danger and without undermining their opportunities to communicate with other children, enjoy a social life and express themselves fully while in hospital (Lambert et al., 2014; Maor & Mitchem, 2020).

Dealing with Cyberbullying – Some Useful Tips

Advise the CYP:

- to speak to someone they trust,
- to keep a record of what is happening,
- not to retaliate but to ignore the bully, block access or ask them to stop,
- surround themselves with people who are understanding and supportive,
- be proud of who they are and not blame themselves or take the bullying behaviour personally for this is a wider social problem that affects many CYP.

For more information and support on how to deal with bullying, visit: anti-bullyingalliance.org.uk or kidscape.org.uk.

- **Digital health-records and safeguarding:** Research highlights the importance for professionals to use digital health systems to empower the CYP to be at the centre of the decision-making process, communicate their preferences for care and be active in the management of their health condition (Diffin et al., 2019; Moqbel et al., 2021). Such an approach requires CYP to be supported in the management and use of their health e-records and be informed about privacy, disclosure and consent issues. It also renders it necessary to screen medical information and records and present this in a way that the CYP will be able to understand and manage. Information that is sensitive and not appropriate to share, or even harmful if the CYP is not able to keep their record secure should be identified and support and guidance should be provided to the CYP on how to keep their medical records safe. The CYP should also be informed and guided around disclosure decisions concerning why, when, how and with whom to share sensitive information. Organisational support to promote use, sustain motivation and increase understanding of the purpose and potential benefits and risks of digital health-systems is also considered crucial. (Diffin et al., 2019; Moqbel et al., 2021).



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4 Emerging Issues – New Trends

Increasing Participation of CYP with Medical Needs in School Through Robotic Telepresence

Telepresence robots (TRs) controlled by an app on a mobile device (e.g. smartphone, laptop or tablet) allow the CYP with medical needs to be virtually present in their class, 'raise' their hand and participate in group work. TRs usually consist of a videoconferencing system with a one- or two-way camera on a robot base that, when mobile, allows the CYP to move remotely and attend different classes, walk in the hallways with their classmates, go to lunch and breaktime or even attend school fieldtrips (Ahumada-Newhart & Olson, 2019; Soares et al., 2017).

Besides the affordability of the software and hardware, the level of positive and inclusive experience, as with all technologies, seems to depend on the ability and willingness of the teachers and peers to include the CYP as a full member of the class community, as well as on personal preferences on how a CYP feels about being represented in class by a telepresence robot (Weibel et al., 2020).

Some CYP may prefer to personalise the robot and dress them in different clothes. Other CYP concerned about



AVI-1



VGo



Double

Three commercially available telepresence robots: AVI-1, VGo and Double.

Source: AVI-1, Noisolation.com (Weibel, 2020), Vgo, Vgocom.com, Double, Doublrobotics.com

medical changes in appearance may prefer not to have a visual image of themselves or to have a static picture on the screen, or perhaps to communicate with the class via different videoconferencing platforms (e.g. BETNET) (Ahumada-Newhart & Olson, 2019). One should always take into consideration the needs of the CYP, as well as the level of readiness and preparedness of the class when introducing such technologies in school.

5 Lessons from Emergency Remote Education

Only two studies were located that explored how Hospital Education (HE) has been affected by the COVID-19 pandemic: one from Italy (Benigno et al., 2020) and one from Poland (Gajda et al., 2021). Both studies described that during the pandemic, a hybrid model of HE operation was employed, with some lessons taking place on-site and other lessons on-line.

In Poland, the COVID-19 pandemic seemed to have an impact on the hospital teachers' sense of employment stability with hospitalised CYP numbers dropping significantly (Gajda et al., 2021). The hospital teachers (HTs) from Italy reported challenges in establishing contact with new students and their families and felt that maintaining on-line communication with older and long-stay students was easier. The socio-economic divide also seemed to have affected access to education, with reports that students from lower socio-economic or immigrant backgrounds were struggling to accessing on-line education. Communication with the multidisciplinary team, including medical doctors and nurses, seemed to have also been hindered, with the hospital teachers feeling left out of the healthcare team (Benigno et al., 2020). Both studies highlighted the impact that remote teaching seemed to have on the teacher-student relationship and well-being with HTs feeling that spending too much time in front of a screen was not healthy and that on-site teaching is quite important for

the development of a strong and secure student-teacher relationship (Benigno et al., 2020; Gajda et al., 2021).

The studies emphasised several positive aspects of the impact of the pandemic as well. Although the teacher workload seems to have increased, with hospital teachers reporting having to develop new approaches to teaching and learning, the hospital teachers also felt that this new challenge gave them the opportunity to develop alternative ways of working and incorporate more technology and innovative methodologies into their everyday practice (e.g. the introduction of teleconferencing tools like Skype and Google Meet and on-line learning content depositories/organising tools like Padlet). At the same time, both studies highlighted the need for relevant training and institutional support in this field (Benigno et al., 2020; Gajda et al., 2021).

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Organisational aspects like more flexible and easy access to their students and spending more time supporting remedial or catch-up studies were also mentioned as a constructive change (Gajda et al., 2021). Finally, a significant positive impact highlighted in the Italian study was that distance education provided an invaluable opportunity for a number of pupils with medical needs to re-join their mainstream schools and reconnect with their teachers and classmates (Benigno et al., 2020). This finding underlines the importance of applying technology in everyday HE practice to support mainstream ownership and connectedness.

Based on the more general research on health, the COVID-19 pandemic seems to have had significant psychosocial consequences for CYP with chronic conditions (physical or mental) and their families with stress-levels, anxiety and depression being significantly higher in this group compared to healthy peers and their parents (Correale et al., 2022; Martinson & Tzivian, 2021; van Tilburg et al., 2020; Wauters et al., 2022). This seems to be linked to various parameters including reduced access and delays to medical care, increased stress when receiving face to face care because of infection concerns and further reduced social interaction and psychosocial support for a group that was already more isolated compared to the general population (van Tilburg et al., 2020).

At the same time, the pandemic rapidly increased the use of telemedicine and other digital interventions in paediatric care (Berkanish et al., 2022). It is interesting to note that the CYP who had the opportunity to access medical care and meet with the medical staff were reported to present less emotional distress compared to CYP whose medical care was suspended (Correale et al., 2022). This finding highlights the importance of continuity in care, whether at an educational, social or health care level, and the protective role this plays in the lives of CYP with chronic conditions and their families.

Synopsis

This chapter discusses the role of the internet in supporting children and young people with medical needs in areas such as education, psychosocial well-being, and health management. It explores the specific risks and challenges related to access to digital and tele-health services, technological and psychosocial difficulties in educational use of ICT in the paediatric setting, and concerns about safeguarding and data protection. It also highlights the opportunities provided by the internet, such as continuity in education through on-line videoconferencing, access to on-line lessons and web-based school platforms, improved psychosocial well-being through social connections, on-line peer support groups and virtual paediatric communities and active engagement in their health-management through online health platforms for accessing medical records, managing appointments, and communicating with healthcare staff. Recommendations when working with CYP with medical needs include: restoring social connectedness and support through early use of communication technologies, promoting active engagement and school inclusion, adequately preparing the educational communities and the CYP when video-conferencing is involved, addressing parental concerns and obtaining consent, coordinating learning between hospital and mainstream schools, and providing teacher training on ICT and mobile technologies in the paediatric sector.

The importance of telecommunications and face-to-face interactions

INSIGHTS FROM PRACTICE

During the COVID-19 pandemic, all classes shifted to remote formats using platforms like Google Classrooms and Videoconferencing platforms like Microsoft Teams. Even now some meetings and educational seminars continue to be held remotely.

The pandemic taught us valuable lessons about maintaining connectivity and communication through alternative means when face-to-face interaction is not possible. It emphasized the significance of technology in enabling us to stay connected and forced us to adapt and explore new ways of utilizing technology for educational purposes, ensuring that learning and social support could continue despite physical barriers. For children in hospitals or those unable to attend school due to health issues, leveraging technology can play a crucial role in keeping them engaged and connected with learning communities. It offers opportunities for remote learning, access to educational resources, and the ability to interact with teachers and peers even when physical presence is not feasible.

By recognising the lessons learned from the pandemic, we can continue to harness the power of technology to overcome isolation, bridge gaps in education and create inclusive learning environments that cater to the needs of all learners, regardless of their circumstances.

Theodora Armenkova – has been working in hospital education in Bulgaria since 2016. She is currently working as a hospital teacher in the paediatric oncology department at the University Hospital 'Queen Joanna – ISUL' in Sofia.



Having experienced online learning, I have come to appreciate the potential of telecommunications in education but also the importance of the here-and-now contact, the co-presence in one place at one time, and the live interactions with people far more.

Justyna Stańczak-Szenajch – has been working in hospital schools in Poland since 2013. Currently, at the Special Primary School No. 287 at the Children's Clinical Hospital.

6 Further Reading

[Home and Hospital Education: A Guide to International Innovative Practices](#)

The LeHo (Learning at Home and in Hospital) project is an interesting multi-foundation initiative funded by the European Commission, Lifelong Learning Programme. This guide contains a collection of ICT tools and materials that can be used with children with medical needs and presents international innovative and good practices in the use of ICT within the Hospital Education sector from a range of partner countries including: the United Kingdom, Hungary, Germany, Belgium, Italy, Egypt and Spain. The project:

- **Outlines key educational factors & good practices** in the realm of Hospital and Home Education (HHE);
- **Explores ICT-based solutions** enabling children in hospital, home therapy, or who attend school part-time, **to access education.**
- **Highlights how technology can impact the methodology and pedagogy** in HHE.

[Mobile Technologies in Hospital Schools Report](#)

This is a Young and Well Cooperative Research Centre project in collaboration with the Murdoch University in Australia. The report presents the results of an innovative professional training intervention and research exploring the use of mobile technologies in Hospital Education. Nine broad areas of need emerged from the study:

1. Personal use, confidence, and time;
2. Coaching and personal support;
3. Integration of mobile technology into teaching;
4. Communication;
5. Hospital environment;
6. Access and IT;
7. Peer Collaboration;
8. Student engagement;
9. Tricks and tips;

The guide highlights the need for in-service teacher training and assistance with ICT use in the hospital setting, tailored to the personal circumstances of the hospital teachers (Maor et al., 2016).

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