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**Children Behind Screens: Human Rights
Challenges in an Increasingly Digital World**

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Children Behind Screens: Human Rights Challenges in an Increasingly Digital World

ABSTRACT

This paper focuses on the fast-paced, ever-growing digital world and its effects on children who are most heavily dependent on it. Digitalisation in this economy is necessary for a better and steadier future. The rapid advancement of ICTs and the widespread use of social media have significantly influenced children's human rights in the digital age. These technologies offer benefits such as improved access to education, social connectivity, and freedom of expression, but also pose serious risks, including cyberbullying, privacy violations, online exploitation, and digital inequality. This paper highlights the dual impact of ICTs and social media on children's rights, emphasising the need for a balanced legal approach that maximises benefits while mitigating risks. The study underscores the importance of strong legal frameworks, responsible online behaviour, and robust digital child protection laws to safeguard and empower children in the digital era. As digital platforms become increasingly integrated into children's daily lives, understanding the complexities of their online experiences is essential for effective policy-making. The research draws attention to the evolving nature of digital threats and the need for continuous adaptation of legal and regulatory measures. It also considers the role of parents, educators, and technology providers in fostering a safe and supportive online environment. Ultimately, the findings advocate for collaborative efforts among stakeholders to ensure that children can fully enjoy the opportunities of the digital world while being protected from its inherent dangers.

KEYWORDS

Children's Rights, Digital Technologies, Information and Communication Technologies (ICTs), Social Media, Cyberbullying, Online Privacy, Digital Child Protection, Human Rights in the Digital Age

1. INTRODUCTION

1.1 Background and Concept of Digital Childhood

Today's children are brought up in a world where digital technologies influence their social life in various ways. Interactions, access to education, and means of self-expression. However, it provides various. There are also risks that arise when utilising this online opportunity, such as cyberbullying, privacy issues, and the dissemination of inappropriate

content. Online exploitation, digital inequality and violations. We have a United Nations Convention. There is a United Nations Convention on the Rights of the Child (UNCRC) that gives a strong basis for protecting children's rights; it had not yet been drafted before, which can directly relate to the children's rights protection in the digital era, which requires reconsideration of the rights' application in the digital world increasingly digitised world¹.

ICTs have made levels of information and communication platform access previously unimaginable, and provide opportunities for children to participate in civic conversation, to learn digital literacy, and to exercise their rights to freedom of expression and participation. But the very same technologies also hold the potential to pose challenges in ensuring children's safety, especially to commercial exploitation.

The exploitation and privacy violations on the Internet. The lack of a thorough global framework for the management of human settlements. Consistent protections for children's rights to digital access have been inconsistent due to the presence of policies explicitly addressing children's digital rights,

There are considerable differences between the various countries' laws². This paper critically examines the dual effects of ICTs and social media on children's rights through the analysis of the pros and cons of being digitally involved. It seeks to be a research into how digital technologies impact children's rights to education, participation, and expression. technologies impact children's rights to education, participation, and expression, assessing new risks including cyber risks, online abuse, and data privacy. Moreover, the research will investigate international legal standards, policies and best practices. To provide a safe and empowering online environment for children

1.2 Statement of the Research Problem

Digital technologies have significantly impacted children's learning, communication, socialisation, and access to information. The digital world provides a great deal of opportunities for children to learn, create and engage, but it also presents a range of risks to them, such as the risk of cyber-bullying, online sexual exploitation, privacy issues, data appropriation, algorithmic manipulation, and the presence of harmful content.

An increasing reliance on digital platforms has led to concerns about

¹ Convention on the Rights of the Child, 1989

² John Palfrey & Urs Gasser, *Born Digital: Understanding the First Generation of Digital Natives*.

children's mental health, independence and security. Regulatory action is frequently inadequate to respond to the new technological issues, despite the presence of international human rights instruments and domestic legal action. In addition, the interests of the technology companies are often in conflict with the welfare of children, resulting in inadequate protection in digital environments. This highlights the urgent need to review the effectiveness of current laws and policies in securing children's rights in the digital age and what needs to change to make the digital world safe, inclusive and respectful of children's rights.

1.3 Research Questions

1. What are the principal human rights issues affecting children in the digital world?
2. What impact does the use of digital technologies have on children's rights to privacy, safety, dignity, education and participation?
3. How do international human rights instruments ensure the protection of children's rights in the internet world?
4. What are the strengths and weaknesses of the current legal and regulatory frameworks in India for the protection of children in the digital space?
5. How can governments, parents, schools and tech companies help in safeguarding children's digital rights?
6. What adjustments in the law and policy are required to establish a digital ecosystem that is child-centred and rights-based?

1.4 Research Objectives

1. To explore how digital technologies affect the fulfilment of children's human rights.
2. To identify and analyse key threats to children through the digital world, such as cyberbullying, online exploitation, privacy issues and harmful content.
3. To assess how effective international legal tools are in regulating children's rights in digital environments.
4. To critically evaluate the Indian legal framework in respect of the protection of children in the cyber world.
5. To evaluate the role of different stakeholders (including governments, parents, education and technology firms) in protecting children online. Identify existing gaps in laws and policies on children's digital rights.
6. To make legal, regulatory and policy recommendations to enhance the protection of children's rights in the digital age.

1.5 Research Methodology

The methodology used in this research is doctrinal and analytical, used to analyse the rights of children in the digital environment. The study has been based on secondary sources of information – the national and international legal instruments, judicial decisions, government reports, policy documents, scholarly articles, books and reports of international organisations like UNICEF, UN, etc. The analysis of legal principles and the application of children's rights in the digital context is done in a qualitative manner. The research also features a comparative study of certain international practices and regulations to determine effective ways to protect children online. The constitutional amendments, various laws and the newer policy directions in India are analysed for their effectiveness in meeting the current-day challenges in the digital world. The study aims to identify gaps in the legal and academic literature and to suggest insightful recommendations for improvement of the protection of children's rights in cyberspace through a systematic review of the literature.

1.6 Scope and Limitations of the Study

This study will focus on the study of children's human rights in relation to the digital environment, specifically including privacy, online safety, cyberbullying, digital participation, mental health and protection from exploitation. The research examines the applicable international human rights instruments, the Indian law and policy and makes a comparative study with selected foreign jurisdictions. It addresses the duties of governments, parents, education and technology providers for a safe and inclusive digital environment for children. There are some limitations in the study. It is a doctrinally based research with a focus on secondary sources, and does not utilise empirical surveys or interviews with children, parents or stakeholders. Changes in technology may also lead to changes in the law or policy after the conclusion of the study. Thus, the conclusions are restricted

2. CONCEPTUAL FRAMEWORK OF CHILDREN'S RIGHTS IN THE DIGITAL ERA

2.1 Understanding Children's Human Rights

Children's human rights are the rights and freedoms that every child is entitled to and has within the human family, up to the age of 18. These rights are based on the principles of human dignity and equality, non-discrimination and the best interests of the child. Children are especially vulnerable because of their age and needs, and have been given special protection by international human rights law to ensure their survival, development, participation and well-being.

The modern concept of children's rights is largely influenced by the United Nations Convention on the Rights of the Child (UNCRC), which considers children to be not only beneficiaries of care, but rights-holders as well³. The Convention recognises rights to a wide range of civil, political, economic, social and cultural rights, such as to education, health, privacy, protection from exploitation, freedom of expression, and participation in decision making on issues which impact their lives.

Today, these rights have come into the digital world from physical space. Children are part of an online world that is a critical component of their learning, communication and social interaction. It has also, however, put them at risk of new forms of bullying, exploitation of their data, abuse and violations of their privacy online. Therefore, a rights-based and dynamic perspective is needed to grasp the current status of children's rights, in which children have opportunities to enjoy digital spaces, while also receiving effective protections against online harms, so that children can grow and flourish safely and meaningfully in the digital age⁴.

2.2 Evolution of Digital Childhood

Research carried out over the past few decades has recorded the universal changes that take place in childhood, such as walking, talking and learning about the world in an adult manner. Research into children has been applied to inform the education, policy and parenting practices of at least one generation. Recent studies have shown, for instance, that a young person's brain continues to grow and develop until their mid-twenties. This trend has translated to ongoing education of youth in their early 20s⁵. Most of the work in the field of child development is not related to the digital revolution. With digital development occurring at a quicker pace than research, it is difficult to get an accurate picture of the impact. Digital technology is only 25 years old, and has only been ubiquitously in the hands of children over the last five years. Its portability, personalisation, profiling and speed of amplification make it possible for a child to be a public performer, with a lot of independence, from a tender age. More longitudinal and detailed cross-sectional studies are urgently needed.

This is necessary so that children can continue to enjoy good health in a digital world and can develop their autonomy as digital citizens (digital agency)⁶. Research needs to be expanded from a focus on harms identified by adults to a focus on all of the experiences and anxieties of

³ UN Committee on the Rights of the Child, General Comment No. 25 (2021).

⁴ John Palfrey & Urs Gasser, *Born Digital: Understanding the First Generation of Digital Natives*.

⁵ UNICEF, *The State of the World's Children 2017: Children in a Digital World*.

⁶ UNICEF, *The State of the World's Children 2017: Children in a Digital World*.

children and young people. They are early adopters of the latest technological advancements; their voices should be the front runners in research.

This discover the needs of vulnerable children, The vulnerabilities of all children as shaped by their age and how they are shaped by their age. Influenced in the context of digital.

2.3 International Human Rights Channel for Children

The Convention on the Rights of the Child is the most important international human rights convention for children, which guarantees their civil, political, economic, social and cultural rights. It is the most widely ratified human rights treaty in history, with 196 countries having ratified it as of July 2022⁷. The Convention is legally binding and provides the basic rights that all children deserve, no matter what their abilities, religion or race are. It is at the heart of all UNICEF activities and is the most comprehensive statement of children's rights ever drafted. In addition, there are optional protocols to the Convention on certain topics that can be adopted, including the sale of children, child prostitution and child participation in armed conflict.

The official UNICEF website or the page dedicated to children's rights of the OHCHR provides more information on the Convention and its implementation⁸. These resources offer useful information on reporting human rights violations, children's rights and the continued work of ensuring all children have access to all their rights.

2.4 Emerging Digital Rights of Children

Digital technologies have created an unprecedented way for children to access information, communicate with others, learn and take part in society. With the increased integration of children's lives with digital platforms, the concept of rights has undergone a significant transformation, resulting in a new and unique group of rights for the digital domain. The new digital rights aim to enable children to take full advantage of technological progress while safeguarding them from harm caused by technology. Judicial developments and legislative efforts have contributed to the recognition of digital rights in India, especially the Digital Personal Data Protection Act, 2023 (DPDP Act)⁹, which provides dedicated protection for children online.

The right to internet access and digital inclusion is one of the most

⁷ Convention on the Rights of the Child, 1989

⁸ OECD Recommendation on Artificial Intelligence, 2019

⁹ Digital Personal Data Protection Act, 2023

important emerging rights. Internet access has become one of the key ingredients in a person's education, socialisation, and access to opportunities in today's society. Access to digital resources is thus an essential factor to keep children from being excluded from educational and developmental opportunities. This is closely related to the right to digital literacy, which allows children to develop the skills needed to interact safely with online environments, to critically evaluate information, and to make informed decisions in digital environments.

The right to privacy and data protection has become a fundamental element of children's digital rights. Children are particularly vulnerable to privacy breaches and data exploitation through digital platforms, which often amass huge amounts of personal data. Aware of these concerns, the DPDP Act, 2023 requires the processing of children's personal data to be based on a verifiable consent from the parent, and strengthens the duties of data fiduciaries processing children's data. These safeguards are in response to the increasing awareness that children need more protection from the unauthorised collection, storage and use of their private information¹⁰.

One of the interesting things about the Indian law is the incorporation of the right against behavioural tracking and targeted advertising. Algorithmic influence and commercial manipulation are especially potent for kids. In response to this concern, the DPDP Act bans any action of behavioural monitoring and targeting advertising at children for the purpose. This statutory protection aims to protect children's autonomous behaviour online from being exploited for commercial purposes, and is a major step towards their protection of children's autonomy and best interests online.

It has also become more crucial that the individual has the right to online safety and protection in the digital era. There are many threats on the internet that children encounter, such as cyberbullying, online grooming, sexual exploitation, online harassment and exposure to harmful content. Children's dignity, security and well-being must be protected against such threats. There are existing legal mechanisms in place, such as child protection laws and cybercrime laws, that seek to address these risks, but these laws need to continuously evolve to reflect the changing landscape of digital threats and be enforced¹¹.

The right to be forgotten is another developing principle in the field of digital rights, which gives the right to ask for personal data to be deleted

¹⁰ Julie E. Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism*.

¹¹ Julie E. Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism*.

or limited when it has been used in a way that could damage someone's future development and reputation. This right, while still emerging in India, is backed by the constitutional right to privacy that the Supreme Court affirmed and has special significance for children, who may still have a digital footprint in their early years of life.

In addition, there is a growing awareness of the right to algorithmic fairness and transparency. AI and recommendation systems play a major role in moulding children's online journeys, and their impact is not limited to the content often shown to them; it extends to the choice of content as well. This has led to increasing demand for transparency, accountability and fairness in algorithmic systems to avoid discrimination, manipulation and harmful profiling of children. The right to participation in the digital environment also acknowledges children's right to access information, voice their opinions and participate meaningfully in digital communities based on their developmental abilities¹².

Together, these new digital rights illustrate the need to rethink the standard concepts of child rights in the age of new technologies. They are not only intended to prevent children from being exposed to online dangers, but also to enable them to effectively and safely engage in the increasingly connected world. The recognition and respect of these rights, along with their enforcement, will continue to play a crucial role in promoting the best interests of the child in the 21st century.

3. LEGAL FRAMEWORK GOVERNING CHILDREN'S RIGHTS ONLINE

3.1 The United Nations Convention on the Rights of the Child (UNCRC)

The UNCRC, adopted in 1989, is the international standard document that currently regulates children's rights, and has had a strong impact on the protection of children in digital environments. Written prior to the advent of the Internet, it's still relevant to online settings. Children as independent rights-holders are recognised in the Convention and include a range of rights, including access to information (Article 17), freedom of expression (Article 13), privacy (Article 16), education (Articles 28 and 29), protection from exploitation (Article 34) and protection from all forms of abuse (Article 19)¹³.

These rights apply to digital spaces where children are increasingly spending time, learning and participating. The UNCRC is based on four main principles of non-discrimination, the best interests of the child, the

¹² Sonia Livingstone & Mariya Stoilova, *The 4Cs: Classifying Online Risk to Children*

¹³ UN Committee on the Rights of the Child, General Comment No. 25 (2021).

right to life, survival and development and respect for the views of the child. As a result, states have a duty to ensure that the use of digital technologies is a driver of children's development and safeguards them from harmful and harmful content online and their exploitation.

3.2 Children's Rights in Relation to the Digital Environment.

In 2021, the UN Committee on the Rights of the Child issued a General Comment on the impact of digital technologies on childhood. A groundbreaking document for the application of UNCRC in digital spaces. It recognises that digital technologies have new and unique possibilities for learning, social involvement, creativity and information access. At the same time, it identifies threats like cyberbullying, online exploitation, harmful content, data collection, and algorithmic manipulation¹⁴.

The General Comment draws attention to the importance of children's rights in online contexts being respected, protected and fulfilled on par with offline contexts. It also urges states to implement child-centred digital policies; enhance privacy safeguards and digital literacy; and regulate technology companies, as well as include the meaningful involvement of children in decisions made regarding their digital lives. The document has become an important blueprint for thinking about children's digital rights in the world.

3.3 International human rights instruments and digital protection

In addition to the UNCRC, several international human rights instruments help to safeguard children in digital environments. Universal Declaration of Human Rights (UDHR): basic rights include privacy, freedom of expression, and access to information, and these are applicable in cyberspace. Likewise, the International Covenant on Civil and Political Rights (ICCPR) affords protection to privacy, dignity and freedom of expression, and the International Covenant on Economic, Social and Cultural Rights (ICESCR) contains rights and freedoms concerning education and development.¹⁵

Digital inclusion and child protection are also emphasised by international initiatives, such as the Sustainable Development Goals (SDGs), under Goal 4 on quality education and Goal 16 on inclusive institutions. Together, they create a rights-based approach that mandates that states maintain the child's right to digital opportunities and ensure strong protection from online threats, discrimination and exploitation.

¹⁴ Universal Declaration of Human Rights, 1948.

¹⁵ International Covenant on Economic, Social and Cultural Rights, 1966

3.4 Safeguards through the Indian Constitution

The constitution of India has laid emphasis on the rights of children in a strong way, where many of the rights have a direct connection to the digital world. Article 14 guarantees equality before the law, and Article 15(3)¹⁶ provides for special provisions for children by the State. The Supreme Court has interpreted the fundamental right to life and personal liberty under Article 21 in an extremely broad manner to encompass the right to dignity, the right to privacy, the right to education and/or the right to development.

In the landmark case of Justice K.S. Puttaswamy v. Union of India¹⁷, privacy was declared as a fundamental right, thus adding constitutional protection to the personal information and online activities of children.¹⁸ Article 21A ensures the right to education, and this now includes access to digital educational resources. Further, the State also has to protect the children from exploitation and promote their healthy development as per the principles laid down in Article 39(e) and 39(f) of the Constitution of India. Put together, these constitutional provisions can all serve as a foundation to protect children's rights in the digital age.

3.5 Statutory Framework – Information Technology Act, POCSO Act, and Digital Personal Data Protection Act, 2023

The statutory provisions about children's online rights in India include the Information Technology Act, 2000, the Protection of Children from Sexual Offences (POCSO) Act, 2012, and the Digital Personal Data Protection Act, 2023. The Information Technology Act provides a legal framework for dealing with cybercrime issues such as identity theft, hacking and obscene and pornographic publications or transmission of such content. It offers a valuable basis on which to tackle online crimes towards children. Given the changing landscape of online crimes, the POCSO Act makes a commendable step towards addressing online child sexual abuse, grooming, exploitation, and distribution of child sexual abuse material.

The Digital Personal Data Protection Act, 2023, is a huge step towards the digital protection of children. The Act mandates a tangible form of parental consent for the processing of personal data relating to children and bans the use of tracking, monitoring and targeted advertising based on children's personal data. These laws together show India's current efforts towards a safer digital environment, safeguarding children's

¹⁶ INDIA CONST. art. 15.

¹⁷ Justice K.S. Puttaswamy v. Union of India, (2017) 10 SCC 1.

¹⁸ Protection of Children from Sexual Offences Act, 2012.

privacy, dignity, and security while allowing for their meaningful engagement within the digital realm.

4. CHILDREN'S HUMAN RIGHTS ISSUES IN THE DIGITAL WORLD

4.1 The Right to Privacy and Data Protection of the Child

The right to privacy is a basic human right that is now of greater importance in the age of technology. Kids spend more and more time on the internet - in fact, for many, they are primarily learning, enjoying, and socially interacting online, but not always realising that they are revealing their personal information. Children regularly use technology that is used for collecting, storing and analysing their data in the form of cookies, geolocation, behavioural monitoring and profiling. These activities can result in the unauthorised use of children's personal information, their exposure to commercial exploitation, identity theft, or privacy invasion and the exposure of children to unauthorised surveillance¹⁹.

Children have less awareness than adults regarding how data is processed and thus are more susceptible to manipulation and misuse of personal data. In view of these concerns, the DPDP Act, 2023, provides for specific protections for children's data, such as the obligation to obtain parental consent and limits on behavioural tracking. But maintaining viable privacy protection is becoming difficult with respect to the fast pace of technological changes and the commercialisation of personal data. It is therefore crucial that children's privacy and their autonomy, dignity and freedom in digital environments are safeguarded.

4.2 Cyberbullying and Online Harassment

Cyberbullying is one of the greatest problems facing children in the virtual world. Cyberbullying can happen 24 hours a day via electronic communications such as social networking sites, texting, online gaming forums and other online methods. It is defined as including harassment, intimidation, humiliation, threats, spreading of false information and exclusion from online groups. The nature of online communications, and who they are usually directed at, often aggravates the psychological impact of such behaviour, making it hard for victims to get out of abusive situations²⁰.

The victims of cyberbullying often feel anxious, depressed, low in self-esteem, isolated from others, and experience difficulties in school. In extreme instances, constant harassment online has been associated with

¹⁹ Shoshana Zuboff, *The Age of Surveillance Capitalism*.

²⁰ Sonia Livingstone, *Children: A Special Case for Privacy?*

self-destructive and suicidal behaviour in teens. The situation is further complicated by the transnationality of digital communication and the difficulty in determining who the perpetrator is. To achieve safer online spaces for children, a multi-faceted approach involving legal measures, digital literacy programs, parental monitoring, school policies and practices, and responsible platform management is essential to combat cyberbullying.

4.3 Online Sexual Exploitation and Abuse

As part of the digital revolution, new opportunities have emerged to sexually exploit and abuse children. Some of the most severe forms of abuse that children encounter online are online grooming, sextortion, live-streamed abuse and the dissemination of child sexual abuse material. Manipulative or abusive actions often take place in digital environments where the perpetrator can build trust with the child first, before proceeding. The availability of tools for encrypted communications, as well as social networking sites, has also made it more difficult to detect and enforce²¹.

This is not only a violation of children's rights to dignity and privacy and their body integrity, but also could have long-term psychological and emotional effects. While there are laws like the POCSO Act and Cybercrime Regulations, which give law enforcement steps to take, technology continues to evolve, making enforcement difficult. The responses need to be improved through greater international collaboration, better reporting systems, technological protection measures and comprehensive awareness programs to safeguard children against the threat of online predators and exploitation.

4.4 Exposure to Harmful Content

Students will be exposed to harmful and inappropriate content at an inappropriate time. While the Internet offers children access to more information than they've ever had before, it is also a source of some potentially harmful information for kids. Violent, sexually explicit, hateful, discriminatory or misleading material is often found on social media sites, video-sharing websites, and online forums by kids. Uncontrolled access to such material can hurt children's emotional, psychological and social growth. Misinformation and extremist information can also influence negative attitudes and behaviours.

It is especially important to consider the risks of information to younger children, who often may be cognitively immature to critically assess

²¹ Neil Selwyn, *Education and Technology: Key Issues and Debates*.

digital information. Content moderation platforms and parental controls aim to minimise contact with toxic content, but they are only effective when dealing with a vast amount of information on the internet and constantly evolving digital platforms. For this reason, balancing the rights of children to access information and the rights of individuals and companies to shield children from harmful information is a tricky issue for policymakers, educators, parents and technology providers.

4.5 Digital Addiction and Mental Health Concerns

As children embrace digital technology more and more, there is growing concern about excessive screen time and digital addiction. Social network sites, online game apps, and streaming programs are frequently made to maximise the time that the user spends on the site, via features such as “grow longer” buttons. Streets, online games apps, and streaming programs are often built to produce the customer to utilise them for longer. Too much screen time can lead to poor sleep, less time for physical activity, attention problems and negatively impact academic functioning²².

Many studies link high levels of digital engagement with feelings of anxiety, depression, loneliness, low self-esteem and other mental health issues in children and youth. Social media can exacerbate mental health issues for some because they feel the constant need to be seen or validated by others on the internet, and that this is directly linked to the number of likes, comments, and followers they have. Digital technologies have some valuable educational and social value, but can also have detrimental effects on children's overall well-being if they are used in excess. Thus, fostering healthy digital habits and encouraging balanced technology use and bolstering mental health care systems are crucial to ensuring the rights and development of children in the digital era are protected.

4.6 Algorithmic Manipulation and the Attention Economy

Modern digital platforms are a part of what is referred to as the “attention economy” – a commercial system that uses attention as a valuable asset and sells it as such. The social media companies, search engines and content-sharing platforms are using advanced algorithms to get maximum engagement and advertisement revenue from the users. Such algorithms constantly gather behavioural information and suggest content to pull in and keep kids' interest²³.

²² Neil Selwyn, *Education and Technology: Key Issues and Debates*.

²³ Julie E. Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism*.

Children may thus be presented with content that affects their choices, actions, and beliefs that they may not have been aware of. Algorithmic systems can perpetuate negative stereotypes, foster addictive usage habits, disseminate misinformation and foster echo chambers that restrict people's access to a range of viewpoints. Children are especially vulnerable to such influence because they lack the cognitive abilities to determine persuasive design, and they lack the ability to exercise control and judgment.

The explosion of use of AI and behavioural analytics has thus sparked serious questions of autonomy, informed consent and digital well-being. Children's rights must be safeguarded in a data-driven digital world by making algorithmic systems transparent, accountable and fair.

5. TECHNOLOGY, ARTIFICIAL INTELLIGENCE, AND CHILDREN'S RIGHTS

5.1 AI-Driven Content Recommendation Systems

AI-driven content recommendation systems utilize machine learning, data analytics, and user behaviour tracking to deliver personalized content, products, and services. These systems collect both explicit feedback, such as ratings and likes, and implicit data, including viewing history, clicks, browsing patterns, and time spent on content. By analysing this information, they create user profiles and predict preferences to recommend relevant content in real time. Recommendation systems generally operate through content-based filtering, collaborative filtering, hybrid models, and knowledge-based approaches. Modern platforms increasingly employ advanced technologies such as deep learning, natural language processing, and computer vision to enhance personalization and user experience.²⁴

These systems play a significant role in digital platforms, including social media, video streaming services, and e-commerce websites, by increasing user engagement, retention, and satisfaction. Personalized recommendations encourage users to spend more time on platforms and interact with a wider range of content. However, the extensive collection and analysis of personal data raise concerns regarding privacy, surveillance, and algorithmic influence, particularly for children. Continuous exposure to personalized content may shape preferences, behaviours, and decision-making processes without users fully understanding the underlying mechanisms. Consequently, while recommendation systems offer considerable benefits, their

²⁴ John Palfrey & Urs Gasser, *Born Digital: Understanding the First Generation of Digital Nati*

implementation must balance innovation with transparency, accountability, and the protection of users' rights in digital environments.

5.2 The use of technology for surveillance

The use of technology for surveillance is a relatively new development, and little research has been conducted on the longterm effects of surveillance technology on children. The studies that do exist are more likely to be about the monitoring of children online, and the connection to parenting style characterised²⁵ by the restriction and control of the child's environment. The other extreme of parenting. The emphasis on our parents is on independence and freedom of choice. Most parents are somewhere in between the extremes of helicopter parenting and neglecting to show their children that they care. Parental choice of whether to monitor children and how to do this is a common dilemma. This 2012 Globe and Mail article presented arguments both pro and con webcams in daycares.

The majority of the research directly related to the subject of surveillance concerns the extent to which children are given independence from their parents, and its impact on children. This research also addresses the process of generating children's perception and relationship to the world through surveillance over time rather than a specific snapshot of a given time. Finally, there seems to be a lack of research regarding age differences in the impact of surveillance, and age differences in children's attitudes towards surveillance.

5.3 Facial Recognition and Biometric in Child Rights

Alternatively, this could be a way to monitor people's access to various locations. This could also be used to track people's movements to different areas.

Facial recognition and biometrics are technologies used in identifying people based on unique facial characteristics or biometrics. The technologies have been employed in different fields such as security, law enforcement, and even in daily life, but they are accompanied with many privacy and rights issues, especially for children.

- **Data can't be changed easily:** Privacy concerns, biometric data is permanent and can't be easily changed. Gathering and storing information on children's biometric data presents significant issues of long-term privacy and control.

²⁵ UNICEF & ITU, *Guidelines for Industry on Child Online Protection*.

- **Biometric Data and Children's Rights:** Balancing Innovation with Ethical Responsibility. The intersection of biometric data and children's rights must be addressed.
- **Legal Framework:** In the current era of biometric technology advances, institutional spaces (schools, health-care facilities) are being reimagined, but they are intended to be more secure and efficient, yet they should be examined more closely.

Facial recognition and biometrics systems in child rights need a legal and regulatory system grounded in the rule of law and constitutional values. This should ensure children's rights are respected when collecting biometric data, safeguarding their dignity and personal privacy.

5.4 Profiling and Automated Decision-Making Risks

Automated decision-making and profiling have the potential to impact children's opportunities, behaviour and development, and therefore they need protection from this. Organisations must refrain from profiling children as far as possible and put in place an effective system of safeguards when they are used. Service providers need to take into account children's age and maturity, as well as their developing abilities, when designing digital platforms to ensure data protection by design. To prevent unfair outcomes and to ensure that children's rights, privacy and best interests are upheld in digital environments, it is vital that practices are transparent, that there are effective risk assessments and that there are child-centred safeguards in place.

5.5 Ethics in Child Centred Technologies

As applications of artificial intelligence become more prevalent in technologies affecting children, it is important to consider the ethical implications. To prevent the misuse, surveillance and unauthorized access of children's personal data, its protection and handling is crucial. It is equally important that AI systems are designed to reduce algorithmic bias, since adverse consequences of algorithmic bias can have an impact on children's opportunities and development.

Moreover, technologies should not be manipulative in the design of the technological practice where the patterns of children's behavior are exploited in order to better engage children or longer screen time. A child-centred approach calls for the emphasis to be on the best interests, developmental needs and welfare of the child through the use of digital platforms. In such a digital world, the safe, transparent, and accountable use of AI-driven technologies while ensuring their benefits for children relies on effective governance, regulatory oversight, and

intergovernmental cooperation.

6. RESPONSIBILITIES AND SUGGESTIONS

The right to freedom of expression online is guaranteed to children. Children are entitled to freedom of expression online.

The digital world has greatly increased the opportunities for children to enjoy their right to freedom of expression. Children can voice their views, exchange opinions and ideas, contribute to public debates, and connect with global communities via social media platforms, blogs, online forums and digital tools for content creation. This right is guaranteed in the United Nations Convention on the Rights of the Child (UNCRC), Article 13 of which establishes that children are free to seek, receive and provide information in all media. The Internet offers great means of creativity, civic engagement and self-expression. But children's freedom of expression is not limitless and is dependent on the rights and safety of others.

Children can lose confidence, and their meaningful participation is hampered by challenges, including online harassment, hate speech, misinformation and cyberbullying. Government, school, or digital platform policies that excessively restrict might also affect children's voices. Children's voices can also be restricted if governments, schools, or digital platforms implement too many restrictions. Thus, a balance is needed that safeguards children from harm, but also allows them to freely express themselves, engage in digital environments and contribute to social and cultural debates in a more and more interconnected world.

6.1 Access to Information and Digital Inclusion

Information is a basic right that helps children learn, build skills and engage in society. The digital technologies have transformed access to learning opportunities, knowledge platforms, news and educational resources. Children can use the internet to access a variety of information sources which support their intellectual, social and personal growth. However, there are still considerable gaps between the availability of the internet, digital infrastructure and technological resources.

Children from rural areas, low-income families and marginalised communities may be at a disadvantage in accessing the digital world. These disparities may limit education opportunities and impede future socio-economic progress. Digital inclusion aims to close these gaps and to make sure that every child has access to digital technologies, cheap internet and education materials. The digital divide can only be bridged, and inclusive digital participation can only be encouraged if the actions of governments, educational institutions and private stakeholders are

aligned. Access to information is a key to the empowerment of children, and for them to exercise their rights in the digital age, access to information must be equal.

6.2 Digital Literacy and Responsible Internet Use

Children living in today's technologically advanced world need digital literacy. It includes the skills to access, analyse, manipulate and share information effectively using digital technologies. Digital literacy also involves critical thinking, media awareness, knowledge of cybersecurity, awareness of online rights and responsibilities, in addition to technical competence. Digital literacy helps children recognise misinformation, safeguard their personal data, and respond properly to online risks as they interact more and more with digital platforms, communities, and educational websites. Good use of the internet is about knowing what's ethical online, respecting the rights of others and having a healthy balance between online and offline activities. Possessing good digital literacy skills will enable children to identify cyber threats, steer clear of harmful content and to make appropriate choices in digital environments. Educational institutions have a pivotal role to play in the promotion of digital literacy by offering a structured curriculum and awareness programmes. These skills can be developed when children are young, which is crucial to their safe, responsible, and meaningful involvement in the increasingly digitalised world.

6.3 Role of Parents, Schools, and Communities

This protection and empowerment of children in digital environments needs to be supported by parents, schools and communities. Parents are the first place of guidance, assisting children with making good online choices, knowing the risks of technology and using it responsibly. There are ways to help children safely navigate online environments while maintaining their independence and self-esteem: Open communication and age-appropriate supervision. Schools also have a significant role in teaching digital literacy, cyber safety and responsible technology use as part of the educational programme.

Educators can support their students in learning how to think critically and be aware of online risks like cyberbullying, misinformation, and privacy issues. Communities are supported by raising awareness campaigns, support groups and child protection programs, including civil society organisations and local institutions. When these stakeholders engage in collaboration, children's resilience to digital threats is strengthened. Through collaboration between parents, school, and community, it is possible to change the culture of responsible digital engagement in order to focus on children's rights, well-being, and

holistic development.

6.4 Responsibilities of Technology Companies

In the world of technology, these organisations have a pivotal role to play in influencing children's online journeys and have a great deal of accountability to safeguard their rights in the digital world. Digital platforms, social media companies, gaming providers and application developers need to take child-centred approaches to the design and operation of these services. This includes implementing strong privacy protections, age-appropriate safeguards, content moderation mechanisms, and transparent data processing practices.

Businesses must take steps to protect children from harmful material, cyber-bullying, exploitation or manipulative advertising on their platforms. Algorithms and AI should be transparent, fair and be used to meet the best interests of the child and not just for the purposes of increasing engagement or commercial profit. There are also legal responsibilities for technology companies concerning child protection, data privacy and online safety. In addition, they should ensure that they make investments in reporting systems, parental control, and educational materials to help with safe digital engagement. Technology firms can play a role in developing a safer, more inclusive, and rights-respecting digital environment by integrating children's rights into product design and governance processes.

7. COMPARISONS WITH OTHER NATIONS AND BEST PRACTICES AROUND THE WORLD.

Increasingly, children's rights in a digital context have become a priority throughout the world, leading to the development of child-specific laws and regimes in a number of jurisdictions. The analysis compares the countries' concerns and interests on privacy, online safety and digital well-being and presents similarities and differences in how the issues are addressed in terms of regulatory design and enforcement mechanisms.

The Age-Appropriate Design Code (Children's Code) 2020, published by the Information Commissioner's Office (ICO) would give the United Kingdom one of the most robust child-centric regulatory frameworks. To ensure that digital service providers keep the best interests of children foremost, the Code mandates that high privacy settings are used by default, that data collection is minimised and that manipulative design practices that may encourage excessive engagement are avoided. Whereas in the UK, the system has a proactive requirement on the technology companies and does not just depend on parental oversight.

The European Union has created a solid framework for child protection,

outlined in the General Data Protection Regulation (GDPR) and the recently enacted Digital Services Act (DSA). Children are entitled special protection under the GDPR when it comes to processing of their personal data and for some online services, consent of parents is required. The DSA also boosts online safety for children by mandating that big digital platforms conduct risk assessments and risk reduction efforts to ensure that minors are exposed to no risks, including algorithmic risk and exposure to illegal content. The European approach focuses on privacy, accountability, transparency, and enables children to participate and access information.

In the United States, child protection is mainly governed by COPPA, 1998 – the Children's Online Privacy Protection Act, which regulates the collection of personal information from children under the age of 13. Although COPPA offers significant privacy protections, it has been criticized for its narrow scope, as it only covers data collection and doesn't offer sufficient protection against algorithmic manipulation, addictive platform design, and online harms. As a result, the American model is still relatively piecemeal.

The framework in India is developing with the Information Technology Act, 2000; Protection of Children from Sexual Offences (POCSO) Act, 2012 and Digital Personal Data Protection Act, 2023. The DPDP Act places specific safeguards on children, including the requirement for verifiable parental consent, and prohibiting behavioural tracking and targeted advertising on children. India, however, has no single digital governance approach to address issues of algorithmic transparency, age appropriateness, platform accountability, and more, which focuses on the child. However, the Indian context lacks a single child-centric digital governance model that tackles issues of algorithmic transparency, age appropriateness, platform accountability, and more.

The comparative analysis shows that protection of children's digital rights cannot be achieved without a comprehensive strategy, which encompasses privacy protection, online safety measures, digital literacy programs, platform accountability and children's participation. The UK and EU systems offer a range of insights into building a well-developed, rights-based approach to regulatory frameworks which supports innovation and protects children.

8. RECOMMENDATIONS

- *Adopt a comprehensive Children's Digital Rights Framework*

Inspired by the UK's Age Appropriate Design Code and the EU's Digital Services Act, India needs to have dedicated laws to protect children's rights in the digital space.

- ***Enhance Data Protection Measures***

Implementing the DPDP Act must involve the strengthening of safeguards for children's personal data, increase parental control and make the enforcement more stringent.

- ***Regulate Algorithmic Systems***

Digital platforms must be obliged to undertake child impact assessments and to make AI-based recommender systems transparent which impact children's behaviour and decision-making.

- ***Promote Digital Literacy Education***

Digital literacy, cyber safety, and media literacy and responsible internet usage should be introduced at a young age within a school's curriculum.

- ***Improve Online Safety procedures***

Better reporting systems, content moderation systems, and quick response should be developed that will deal with cyberbullying, online grooming and harmful content.

- ***Support the design of the platforms in a child-centred way.***

The principles of privacy-by-design and safety-by-design that align with the best interests of children should be used by technology companies.

- ***Increase Multi-Stakeholder Collaboration***

Governments, educators, parents and civil society organizations and technology companies should work together to develop effective child protection strategies.

- ***Recognize Emerging Digital Rights***

India must take a formal step towards establishing rights of digital privacy, protection from behavioural tracking, algorithmic transparency and active digital participation.

- ***Strengthen International Cooperation***

There is a need for further cooperation across borders to tackle online child exploitation, cybercrime and transnational online harms.

- *Set up Independent Oversight Mechanisms*

There should be specific regulatory institutions that monitor compliance and investigate violations of the child protection standards, in relation to the child's rights in the digital sphere.

9. CONCLUSION

Childhood has been transformed by the digital revolution, offering opportunities for education, communication, creativity and involvement that are unprecedented. Meanwhile, it has also presented kids with complex issues such as privacy violations, cyberbullying, online exploitation, algorithmic manipulation and negative mental health effects. The protection of the human rights of children needs to be extended beyond physical environments to digital environments if children are to spend more and more of their lives in a digital space. If children are spending more and more of their lives in a digital space, then the protection of their human rights cannot remain in the physical world. International measures like the UNCRC and General Comment No. 25 are useful and supportive in terms of providing a strong normative base, while domestic measures such as the DPDP Act, 2023 are also steps towards protecting children's interests in the digital world.

But that's not enough – legal protection is not enough. A comprehensive and child-centred approach to protection involves strong regulation, responsible technological innovation, digital literacy, parental awareness and supervision, educating children and young people about protection and accountability by businesses. The UK and the EU have modelled the process of proactive regulation and platform responsibility to improve children's online safety without compromising their rights to participation and access to information, and the lessons learned from this experience are relevant to the current situation. Finally, children are not just consumers of technology, but also active and valid rights-holders, and their dignity, autonomy and well-being must be in the heart of digital governance. With the continued evolution of technology, it is a legal responsibility and a social need that all children will be able to safely enjoy the opportunities technology provides, whilst also being safeguarded from the potential harms it presents.