

## **The need to include Personal Data Protection, Management and awareness in the school curriculum of India.**

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### **Abstract**

In the swiftly evolving digital milieu of the 21st century, the future prospects of students hinge upon their adeptness in navigating and excelling in an increasingly data-centric environment. The New Education Policy (NEP) of India underscores the significance of comprehensive development, analytical reasoning, and digital literacy, embodying the fundamental proficiencies requisite for students to flourish in their forthcoming pursuits. However, within this digital epoch, the imperative to incorporate education on personal data safeguarding, administration, and awareness into the educational syllabus becomes paramount.

As students progress through their academic trajectory, they must be furnished with the knowledge and competencies to effectively safeguard their personal data. Integration of data protection education into the curriculum not only augments their digital literacy but also empowers them to preserve their privacy and forestall cyber transgressions. Nurturing collaboration with experts in data protection and cybersecurity ensures that students receive thorough and current guidance.

The professional landscape of the future necessitates individuals who are proficient not only in their respective disciplines but also adept at securely navigating digital platforms. Through the inclusion of data protection in the curriculum, schools equip students to confront these demands directly, ensuring their readiness for the occupational and practical milieu. Furthermore, parental involvement plays a pivotal role in reinforcing data protection tenets at home, fostering seamless synergy between scholastic learning and personal life. This comprehensive approach guarantees that students cultivate a robust comprehension of data protection from an early stage, establishing the groundwork for responsible digital citizenship.

The integration of personal data protection, administration, and awareness into the educational curriculum is not merely a requirement but a prerequisite for shaping the future of students who must navigate a digitally-oriented world with assurance and proficiency. This paper focuses on the lines of these aspects and proposes the solutions that the Indian education system can adopt for its rounded progress.

## I. The Imperative of Digital Literacy in the 21st Century

In the contemporary global landscape characterized by interconnectivity, proficiency in digital literacy emerges as an essential competence for individuals across the globe, influencing numerous aspects of modern existence. Whether for communication, accessing employment prospects, acquiring comprehensive education, or participating in social interactions, adeptness in digital skills holds significant importance. Beyond its pragmatic utility, the mastery of digital literacy serves to cultivate more accessible, inclusive, and secure societies, facilitating connectivity and facilitating engagement in the digital era.

In 1450, Johannes Gutenberg's invention of the printing press initiated a significant epoch in book production, facilitating the mass replication of texts and instigating intellectual movements such as the Renaissance and the Scientific Revolution. While this advancement expedited the dissemination and portability of knowledge, it also marked a deviation from the tradition of manuscript marginalia, constraining the capacity to engage with texts. Fast forward to the 21st century, and we encounter yet another cultural transformation as the digital age revolutionizes the dissemination of knowledge. With the emergence of digital technologies, individuals now possess unparalleled opportunities to engage with and annotate text in manners evocative of the pre-printing press era. Scholars such as Richard Lanham regard the computer as a potent rhetorical and collaborative instrument, bridging individual ingenuity with digitally shared knowledge. Within this digital milieu, marginalia transcends the confines of a solitary book, evolving into a communal asset, at times even rivaling the significance of the original text itself.

Acknowledging the criticality of digital literacy, it becomes imperative to embed it within educational frameworks, commencing from the foundational stages of schooling. Nonetheless, notwithstanding its significance, numerous education systems encounter substantial challenges in this domain. Challenges such as inadequate infrastructure, restricted access to technological resources, insufficient teacher training, and the absence of standardized learning benchmarks pose formidable obstacles to the effective integration of digital literacy into curricula. Consequently, numerous students find themselves devoid of the requisite skills essential for proficient navigation of the digital realm, thereby impeding their capacity to excel in an increasingly digital-centric milieu. Tackling these impediments and prioritizing the establishment of robust digital literacy initiatives within educational institutions are pivotal endeavors aimed at equipping forthcoming generations with the necessary tools to prosper in the contemporary era. With the evolution of the internet from web 2.0 to web 3.0, forthcoming generations will face a notable transformation in the digital terrain. It is imperative for them to grasp their privacy entitlements and fundamental legal frameworks regarding technology. This comprehension will

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<sup>1</sup> Clark, J.E. (2009) *The Digital Imperative: Making the Case for a 21st-Century Pedagogy*(Accessed: 08 February 2024).

equip them to remain abreast of developments, advocate for awareness, and nurture a more profound understanding of these critical facets.

The five epochs of communication encompass the pre-verbal, oral, literate, electric, and electronic eras, with the electronic age already underway. It is imperative that we adequately equip the future generation, both physically and mentally, to confront the challenges inherent in this era.<sup>2</sup>

## II. Holistic Development: A Pillar of the New Education Policy (NEP)

Education constitutes the process wherein each individual acquires knowledge and skills commensurate with their abilities and interests, as every child possesses unique attributes such as strengths, personality traits, innate talents, and capacities. To accommodate these distinctive qualities, it is imperative to devise an activity-based curriculum tailored to the students. The syllabus plays a pivotal role in fostering child development and facilitating the teaching-learning process. Child development stands as a paramount facet of education. In light of escalating competition, there is a heightened emphasis on refining both the curriculum and co-curricular activities within and beyond educational institutions.

A primary objective of the syllabus is to streamline essential components within subjects while creating ample space for critical thinking in pedagogical content. It is essential for the curriculum to adopt a holistic approach, emphasizing discovery-based learning and collaborative discussions. These curriculum parameters and facets encapsulate the essence of holistic development. Holistic development encompasses the comprehensive growth of a child, encompassing social, emotional, physical, mental, and intellectual dimensions. In educational contexts, holistic development entails nurturing a child's growth across various domains. This approach fosters self-confidence, self-awareness, and a heightened sense of responsibility in undertaking tasks. Moreover, the holistic development process facilitates the cultivation of robust critical thinking skills and problem-solving acumen among students.

Holistic development represents a comprehensive methodology in education aimed at fostering a multitude of abilities within the human psyche, thereby striving toward the attainment of multifaceted objectives. It encompasses the advancement of students' physical, emotional, intellectual, and social capacities, while also enhancing learning methodologies to promote the refinement of higher-order skills. Holistic development amalgamates various educational models aimed at empowering student performance and refining teaching strategies across diverse domains. Its advantages contribute significantly to elevating educational standards, thereby fortifying the nation-building endeavor by fostering achievement.<sup>3</sup>

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<sup>2</sup> Logan and K, R. (2002b) *The five ages of Communication - OCAD University Open ...* Available at: [https://openresearch.ocadu.ca/id/eprint/891/1/Logan\\_Five\\_2002.pdf](https://openresearch.ocadu.ca/id/eprint/891/1/Logan_Five_2002.pdf) (Accessed: 08 February 2024).

<sup>3</sup> Channawar, S. (2022) *Conceptual Framework for Holistic Development :NEP 2020*, Research Gate. Available at: [https://www.researchgate.net/publication/368662624\\_Conceptual\\_Framework\\_for\\_Holistic\\_Development\\_NEP\\_2020](https://www.researchgate.net/publication/368662624_Conceptual_Framework_for_Holistic_Development_NEP_2020) (Accessed: 15 February 2024).

Incorporating strategic planning to enact deliberate transformations and prioritizing data protection management and awareness are indispensable components that should be integrated into the curriculum of school students. Emphasizing the cultivation of high-order skills constitutes another essential aspect of school education. India's NEP-2020 underscores the crucial necessity of transitioning towards a multidisciplinary approach to education, aligning with the contemporary demands of the era. This educational paradigm facilitates the cultivation of essential skills such as critical thinking, problem-solving, adaptability, and flexibility, which are imperative in navigating the swiftly changing landscape. Multidisciplinary education is indispensable for preparing individuals to confront the accelerated pace of change that lies ahead.

NEP-2020 is poised to enable Indian educational institutions to foster critical thinkers capable of innovatively addressing challenges by leveraging the breadth and depth of their educational experiences. It places significant emphasis on value-based education and the promotion of Global Citizen Education (GCED), thereby cultivating students who possess an awareness of global issues and enhanced employability prospects for Indian graduates. Furthermore, it nurtures independent thinkers and ethical citizens, poised to harness the nation's demographic dividend and propel its comprehensive growth in the 21st century.<sup>4</sup>

In the contemporary era dominated by technology, incorporating digital platforms can yield significant advantages. Empowering students to create content, whether through blogs, videos, or podcasts, elucidates diverse concepts and resonates with the digitally adept generation, simultaneously broadening their skill repertoire — bolstering confidence and fostering enhanced leadership skills.

Shifting from traditional teaching methods to more interactive sessions, wherein students actively participate in discussions and assume teaching roles, can further enrich the educational experience.<sup>5</sup>

### III. Nurturing Critical Thinkers for Tomorrow's Challenges

A large majority of students, when surveyed, expressed the need for training on understanding the risks related to using social media and utilizing security settings to address these risks. Additionally, most respondents preferred to receive this training during their schooling years. While many students chose to use privacy settings on social media to make their accounts private, some preferred to keep their accounts public, especially for business promotion and

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<sup>4</sup> DR. RAKESH YADAV, HOLISTIC APPROACHES IN NATIONAL EDUCATION POLICY-2020 TO MAKE INDIA AS GLOBAL KNOWLEDGE SUPERPOWER (2022), <https://ijcrt.org/papers/IJCRT2210223.pdf> (last visited Jan 31, 2024).

<sup>5</sup> Coschool, NURTURING CRITICAL THINKERS IN A DIGITAL WORLD- THE PROTEGE EFFECT MEDIUM (2023), <https://medium.com/innerscorelearningskillstest/nurturing-critical-thinkers-in-a-digital-world-the-protege-effect-3f28699f6570> (last visited Feb 29, 2024).

social media influencer career, as they believed that security measures could limit their marketing reach.

It was also observed that some students resorted to adopting pseudonyms or creating fake accounts to maintain anonymity in their social media activities, effectively managing their online presence. The survey findings indicated that students demonstrated an understanding of the risks associated with unsafe behaviors compromising privacy on social media platforms and were aware of appropriate actions to mitigate them. Concerning the necessity for formalized instruction and its implications for digital literacy within a university context, the researchers held a bias towards the requirement for structured instruction. They underscored the importance of increasing awareness regarding privacy risks in social media usage and the configuration of security settings.<sup>6</sup>In the realm of digital literacy and cybersecurity education, studies delve into various aspects, ranging from students' awareness of social media risks to their preferences in platform usage and their perceived need for cybersecurity training.

Firstly, it indicates that students demonstrate a commendable level of awareness regarding the risks associated with social media, including the potential for account compromise and identity theft. This awareness underscores their understanding of the inherent dangers of online interactions. This can be because the new generation is being born into the digital age.

A discernible shift in social media platform preferences among Generation Z students is observed, with platforms such as Snapchat and Instagram gaining traction over traditional platforms like Twitter and Facebook. This shift reflects the dynamic nature of digital trends and the evolving preferences of contemporary users. However, despite their familiarity with social media platforms, students express challenges in understanding and effectively utilizing security settings. This difficulty serves as a barrier to the adoption of robust security measures, compounded by concerns over potentially limiting their online reach. Early exposure to digital safety concepts is deemed essential in equipping students with the necessary skills to navigate the online landscape securely.

To address these needs, it is proposed that the development of a maturity model based on students' proficiency in social media privacy and security behaviors be considered. This model, aligned with principles outlined in the NIST Cybersecurity Framework, aims to guide students through key stages of cybersecurity awareness, from basic password management to intentional personal branding. Despite efforts to promote security features, a notable portion of students appear willing to compromise privacy for the sake of social media usage. This discrepancy underscores the importance of comprehensive education on the broader social risks associated with online activity.

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<sup>6</sup> Neelima Bhatnagar & Michael Pry, STUDENT ATTITUDES, AWARENESS, AND PERCEPTIONS OF PERSONAL PRIVACY AND CYBERSECURITY IN THE USE OF SOCIAL MEDIA: AN INITIAL STUDY (2020), [https://www.researchgate.net/publication/255708134\\_Students'\\_attitude\\_toward\\_digital\\_security](https://www.researchgate.net/publication/255708134_Students'_attitude_toward_digital_security) (last visited Jan 28, 2024).

The proposed curriculum seeks to bridge this gap by initially focusing on establishing fundamental cybersecurity principles and subsequently expanding to include social risk management and personal brand development. By addressing these areas, the curriculum aims to empower students to actively manage their online identities and mitigate potential risks effectively.

#### **IV. Safeguarding Personal Data: A Core Component of Digital Literacy**

In the realm of online activity, the landscape of risks is intricate and continuously evolving, with malicious individuals or entities persistently devising novel methods to exploit others. While digital literacy cannot entirely shield students from encountering safety challenges online, it equips them with vital knowledge, tools, processes, and resources to mitigate risks to their safety and privacy to the greatest extent possible.

In addition to addressing online safety concerns, digital literacy also instills principles of digital responsibility, encompassing the ethical consumption and communication of information in the online sphere. The escalating reliance on technology exposes students to various challenges, including issues related to copyright infringement, plagiarism, cyberbullying, vetting of informational sources, and responsible online interactions. Digital literacy skills empower students to comprehend and adeptly navigate these challenges, fostering their development as responsible digital citizens. Amidst the ever-evolving technological landscape, foundational digital literacy skills provide students with essential knowledge and competencies that transcend specific technologies, enabling them to adapt to various technological advancements both presently and in the future. For example, acquiring fundamental concepts such as input/output operations, application functionalities, identification and utilization of hardware devices, etc., furnishes students with transferable knowledge that can be applied across diverse technological platforms.

Within the framework of the Indian education system, the protection of personal data has emerged as a pivotal component intricately interwoven with numerous educational initiatives, including India's new education policy. This policy prioritizes the holistic development of learners, emphasizing critical thinking, fostering digital literacy, and preparing students for career readiness. It underscores the significance of combating cybercrimes, necessitating collaborative efforts with experts and active parental involvement to ensure a comprehensive approach to data protection. The new education policy of India, reflecting a commitment to the comprehensive development of learners, prioritizes not only academic excellence but also their overall well-being. Within this holistic framework, the safeguarding of personal data assumes a pivotal role, ensuring that learners possess the necessary skills to navigate the digital landscape securely and responsibly. At the core of holistic development lies the cultivation of critical thinking skills among students, essential for their engagement with digital platforms and information online. Educating students about the importance of safeguarding personal data becomes imperative to mitigate risks associated with cybercrimes.

Digital literacy stands as another cornerstone of the new education policy, aimed at empowering students with the requisite skills to excel in the digital age. As part of digital literacy education, students must grasp the significance of protecting their personal data and the potential consequences of its misuse.

In the Indian context, preventing cyber crimes emerges as a primary objective given the escalating prevalence of online threats and vulnerabilities. Integrating data protection principles into the curriculum enhances students' awareness and equips them with strategies to effectively safeguard their personal information. Career readiness remains a fundamental aspect of education, particularly in today's digital-centric world where proficiency in data protection is paramount for professional success. By instilling a culture of data security from an early age, students are better prepared to navigate the complexities of the digital workplace.

Collaboration with experts in cybersecurity and data protection is crucial for the development of comprehensive educational programs. Leveraging the expertise of professionals ensures that educational institutions maintain relevance and stay abreast of the latest advancements in data security as well as in its related curriculum. Parental involvement holds equal significance in reinforcing data protection principles at home and complementing school efforts. Parents play a pivotal role in guiding their children's online behavior and instilling responsible digital habits from a young age. Through collaborative efforts with cybersecurity experts, educational institutions can develop robust curriculum materials and training programs to educate students about data protection and cybersecurity best practices. Parental involvement is crucial in supporting students' learning journey and reinforcing the importance of data protection both at home and in school. By fostering cooperation among educators, experts, and parents, students can navigate the digital world safely and responsibly while safeguarding their personal data.

## **V. Building Resilience Against Cybercrimes Through Education**

In the contemporary digital realm marked by proliferating cyber threats, prioritizing cyber wellness, adopting a shared responsibility model, and emphasizing secure school level software or computer education emerge as pivotal imperatives. As stewards of cybersecurity and educators, it is imperative for us to instill a culture of vigilance, continuous learning, and transparent communication regarding cybersecurity matters. Equipping students and their stakeholders with requisite knowledge and skills lays the foundation for a safer and more resilient digital future. Digital literacy and the advocacy for cybercrime awareness constitute essential pillars in fostering a safer digital environment. Whether individuals, business entities, or policymakers, investing in digital education and awareness initiatives represents an investment in the security and well-being of our interconnected society, by empowering individuals with the knowledge and competencies to safeguard themselves and their communities, we can confidently traverse the digital landscape, ensuring that the benefits of the digital age outweigh its risks.

Promoting cyber wellness involves cultivating a mindset of vigilance and awareness amid the contemporary era's sophisticated cyber threats. It entails arming individuals with the knowledge

and tools to ensure their online safety consistently. For instance, students should possess the capability to differentiate genuine communication from potential phishing attempts, employing measures such as verifying email addresses and scrutinizing requests for sensitive information. Establishing an environment conducive to open discussions on cybersecurity issues and experiences sharing fosters a collective endeavor towards cyber wellness. Educating staff, students, and families on cyber hygiene practices collectively mitigates risks and fortifies online safety.

Transitioning towards a shared responsibility model in cybersecurity acknowledges the evolving technological landscape, especially with the burgeoning adoption of cloud-based solutions. This model underscores the collaborative efforts between cloud service providers and users in mitigating security risks. Leveraging the robust security capabilities of cloud service providers not only fortifies organizational security but also enables educational institutions to optimize resources efficiently. Embracing a shared responsibility model equips institutions to remain abreast of the latest cybersecurity advancements while enhancing agility and resilience in the face of emerging threats.

## **VI. Collaboration with Experts: Ensuring Comprehensive Learning**

In the contemporary digital milieu, where data permeates extensively and personal privacy is under constant threat, comprehensive education on digital privacy assumes critical significance. To ensure students possess the requisite knowledge and competencies to maneuver through this intricate terrain, collaborative efforts with experts from diverse fields become imperative. This exploration delves into the imperative of collaborative approaches to digital privacy education, drawing insights from interdisciplinary experts to enhance the educational journey.

Digital privacy transcends singular disciplinary boundaries, intersecting with fields such as computer science, law, ethics, psychology, and sociology. Collaboration with experts from these varied domains enables educators to furnish students with a holistic comprehension of digital privacy matters. For instance, computer scientists can elucidate encryption methodologies and cybersecurity protocols, while legal scholars can expound upon the legal frameworks governing data protection. Synthesizing insights from multiple disciplines enriches educational content and equips students with a nuanced understanding of digital privacy issues. Incorporating real-world case studies into the curriculum serves as a pivotal tool in deepening students' grasp of digital privacy. Analysis of past incidents and their ramifications enables students to discern the practical repercussions of privacy breaches and inadequate protection measures. Collaboration with practitioners who have firsthand experience in managing such incidents aids students in comprehending the intricacies involved in safeguarding digital privacy. Dissecting case studies nurtures critical thinking abilities and encourages students to contemplate the ethical and societal dimensions of privacy challenges.

Engaging experts to deliver guest lectures or conduct workshops enriches the educational experience by providing students with exposure to cutting-edge research and industry best



practices. Guest speakers, including cybersecurity specialists, privacy advocates, and industry professionals, offer invaluable insights into prevailing trends and dilemmas in digital privacy. These sessions also foster interactive learning, enabling students to directly interact with practitioners. By fostering dialogue and collaboration between academia and industry, guest lectures and workshops bridge the gap between theory and practice, empowering students to apply their knowledge effectively.

Involving students in collaborative research projects under expert guidance facilitates experiential learning and independent inquiry. By tackling real-world problems alongside professionals, students cultivate practical skills and gain firsthand experience in addressing digital privacy challenges. Collaborative research endeavors contribute to advancing knowledge in the field, as students may unearth novel insights or propose innovative solutions. These projects offer students networking opportunities and may lead to internships or employment prospects.

Collaboration with experts grants access to valuable resources, including research papers, datasets, and professional networks, enriching the learning environment, especially for the high school level students. Experts often possess proprietary data or industry contacts that offer students unique learning prospects. Partnerships with industry bodies, research institutes, and governmental agencies provide students access to internships, mentorship programs, and networking avenues. By leveraging these resources and networks, educators create a comprehensive learning milieu that prepares students for success in their future endeavors.

Collaborative approaches to digital privacy education are indispensable for equipping students with the requisite knowledge and competencies to navigate the intricacies of the digital realm. Through integration of multidisciplinary expertise, application of real-world case studies, engagement via guest lectures and workshops, participation in collaborative research projects, and access to resources and networks, educators foster an environment conducive to cultivating responsible digital citizens. Collaboration with experts ensures that digital privacy education remains relevant, impactful, and comprehensive in an ever-evolving digital landscape.

## **VII. The Crucial Role of Parental Involvement in Data Protection Education**

In the swiftly evolving digital realm, where personal data holds significant value, educating individuals, particularly minors, about data protection is imperative. While educational institutions play a crucial role in imparting knowledge on digital privacy, parental involvement is equally vital. Parental engagement reinforces lessons learned in educational settings and offers practical guidance in navigating online privacy complexities. It is necessary to delve into the importance of parental engagement in data protection education and its influence on cultivating responsible digital citizenship.

Effective data protection education commences at home, where parents cultivate trust and open communication with their children. By fostering an environment conducive to discussing online activities, concerns, and experiences, parents facilitate conversations about privacy and

online safety. These dialogues lay the groundwork for raising awareness and understanding the significance of safeguarding personal information online. Parents serve as primary role models for their children, shaping their attitudes towards responsible digital citizenship. By exemplifying privacy-conscious behaviors, such as employing robust passwords and managing privacy settings on digital platforms, parents impart valuable lessons. Children often imitate behaviors observed at home, highlighting the influential role of parental modeling in shaping attitudes towards data protection.

Parental involvement extends beyond the household, encompassing collaboration with schools and educators. Parents can actively engage in school initiatives promoting data protection education, participating in parent-teacher associations, workshops, and information sessions. Collaboration with educators enables parents to comprehend curriculum objectives related to digital privacy, facilitating effective reinforcement of these concepts at home. Supervision is pivotal in mitigating risks associated with children's online activities. Parents can utilize monitoring tools and parental control software to oversee their children's digital interactions, restrict access to inappropriate content, and shield against online threats. Regular discussions about online experiences enable parents to promptly address concerns, ensuring their children navigate the digital landscape safely. Parental involvement empowers children to develop critical thinking and decision-making competencies crucial for navigating online environments. By discussing privacy risks, data breaches, and online scams, parents encourage children to question, evaluate, and analyze digital content critically. Teaching children to scrutinize privacy policies, identify credible sources, and make informed decisions empowers them to manage their online privacy effectively.

It is also necessary to promote 'Privacy-Conscious Technology Utilization'. Parents should guide their children's technology usage, emphasizing habits that prioritize privacy and security. This includes educating children about software updates, cautioning against suspicious links and downloads, and advising on safe sharing practices. Imparting knowledge about privacy-enhancing tools and practices equips children with resources to protect their digital identities. Children must understand the importance of respecting others' privacy rights in addition to safeguarding their own. Parental involvement instills values of empathy, respect, and digital etiquette in children. By highlighting the impact of online actions on others and fostering empathy towards privacy preferences, parents contribute to a more respectful online community.

Parental engagement plays a pivotal role in data protection education, complementing efforts by educational institutions. Through trust-building, modeling responsible conduct, collaboration with schools, monitoring, critical thinking empowerment, technology guidance, and empathy cultivation, parents aid in shaping informed and responsible digital citizens. The partnership between parents, schools, and educators is indispensable in equipping children with the knowledge, skills, and values to navigate the digital world safely and responsibly.

