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# Inclusive Education and Digital Literacy: Developing Essential Skills in the Digital Age in Selected Public Secondary Schools in Bayelsa State.

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## Abstract

*The necessity of incorporating inclusive educational practices alongside digital literacy initiatives to foster a more equitable and skilled society is crucial, as both ensure that all learners, regardless of their backgrounds and abilities, have access to quality education tailored to their needs and are equipped with the competencies required to navigate and thrive in a technology-driven world. This paper considers the concepts of inclusive education, the impact of inclusive education, digital literacy in the digital age, the impact of digital literacy, the integration of inclusive education and digital literacy, and the digital literacy skills needed for inclusive education. While inclusive education policies are widely adopted, there is a significant gap in the practical implementation of these policies, particularly in developing regions where infrastructure and teacher preparedness are limited. Similarly, digital literacy is essential not only for technical proficiency but also for fostering critical thinking, collaboration, and responsible digital engagement. However, the digital divide continues to pose challenges, with marginalized and under-resourced students facing barriers to accessing digital literacy tools and training. This shows that the integration of inclusive education and digital literacy is vital for equipping students with the necessary skills to succeed in the digital era. It was recommended that institutions and administrators incorporate digital literacy skills across subjects and grade levels to ensure that all students develop these competencies.*

**Keywords:** Inclusive Education, Digital Literacy, Skills, Digital Age

## Introduction

In the modern educational landscape, the concepts of inclusive education and digital literacy are becoming increasingly critical as society navigates the challenges and opportunities presented by the digital age. Inclusive education is considered an approach where all students, regardless of their physical, intellectual, social, emotional, linguistic, or other conditions, are welcomed and supported in mainstream education settings. This framework seeks to ensure that every student can participate fully and achieve their potential without discrimination or exclusion (UNESCO, 2020). The practice of inclusive education emphasizes the importance of creating learning environments that accommodate diverse learning needs, fostering a sense of belonging, and promoting equal access to educational opportunities. However, despite significant policy advancements, there remains a critical gap in the practical implementation of inclusive education, particularly in low-resource settings where access to appropriate

materials and teacher training is limited (Santos & Serpa, 2020). This shortfall is part of a larger challenge faced by educational systems in many developing nations, where limited resources and infrastructure inhibit the realization of inclusive education ideals.

Digital literacy, on the other hand, encompasses the skills required to effectively and critically navigate, evaluate, and create information using a range of digital technologies. This includes not only the ability to use digital tools and platforms but also the competence to understand and utilize digital information in a meaningful way (UNESCO, 2018). In today's interconnected world, digital literacy goes beyond basic computer skills and extends into critical thinking, the ethical use of information, and the ability to collaborate effectively in online spaces (Ng, 2020). However, many educational institutions, particularly in developing nations, face significant barriers to integrating digital literacy into their curricula, including limited infrastructure, insufficient teacher training, and unequal access to technology (Hollands & Tirthali, 2020). This gap in access to technology and digital literacy training exacerbates educational inequalities, creating a digital divide that disproportionately impacts students from marginalized communities.

The integration of inclusive education and digital literacy is essential for preparing students for the demands of the digital age. This combination promotes not only equitable access to educational resources but also equips students with the necessary skills to thrive in a technologically-driven world. Inclusive education ensures that no learner is left behind, while digital literacy prepares them to actively participate in the digital economy and society. Nevertheless, a significant problem remains in the form of infrastructural limitations and inadequate teacher preparedness, particularly in regions like Nigeria, where access to digital tools and inclusive practices is unevenly distributed. Without addressing these systemic issues, students from marginalized or under-resourced backgrounds are at risk of being left further behind, both in terms of academic success and digital competence (Iwu, 2021). This widening gap underscores the urgent need for strategic interventions that not only promote inclusivity but also ensure the development of critical digital skills across diverse educational settings (Cruz-Jesus, Oliveira, & Bacao, 2020).

As the world advances further into the 21st century, the need for developing essential skills for the digital age has become increasingly urgent. The digital era demands more than just basic technical proficiency; it requires a comprehensive set of skills that enable individuals to

effectively navigate, interpret, and contribute to the digital landscape. These essential skills include digital problem-solving, online collaboration, and the ability to adapt to new technologies and platforms as they emerge (Martin, Grudziecki & Punyasavatsut 2019). Fostering these competencies is vital not only for individual success but also for creating an informed, collaborative, and innovative society that can meet the demands of a rapidly changing digital environment. However, the challenge lies in ensuring that these skills are accessible to all students, regardless of their socio-economic background or physical abilities. Without deliberate efforts to address these challenges, the growing digital divide will continue to pose significant barriers to achieving truly inclusive and equitable educational systems.

Despite the increasing recognition of the importance of both inclusive education and digital literacy, their full integration into educational systems remains limited, particularly in low- and middle-income countries. In Nigeria, for instance, the lack of sufficient digital infrastructure, inadequate teacher training, and inequitable access to digital devices pose significant barriers to the effective implementation of these concepts (Iwu, 2021). Without addressing these systemic issues, students from marginalized backgrounds are at risk of falling further behind, both in terms of their academic achievements and their ability to navigate the digital world.

## Theoretical Foundations

**Constructivist Theory:** Constructivism, championed by theorist Piaget in the 1920s and 1930s posits that learning is an active process where individuals construct their own understanding and knowledge through experiences and reflections. In the context of inclusive education, this theory emphasizes the importance of engaging all students, including those with diverse needs, in meaningful learning experiences. Technology, including digital tools, facilitates this process by providing diverse modalities for students to access and interact with information, enabling them to build their own knowledge frameworks (Coiro & Dobler, 2019).

**Social Justice Theory:** Social justice theory, as articulated by Rawls in (1979) underlines the need for equitable access to educational resources and opportunities for all students, regardless of their background or abilities. In the digital age, this theory aligns with the concept of digital literacy, which advocates for equal access to digital technologies and the skills to use them effectively. Inclusive education seeks to remove barriers and promote participation, ensuring that all students have the necessary digital literacy skills to thrive in an increasingly technology-driven world (Hollands & Tirthali, 2020).

## Conceptual Foundations

**Inclusive Education**: Inclusive education refers to an educational philosophy that values diversity and promotes the participation of all students in mainstream classrooms. It challenges traditional paradigms that separate students based on perceived abilities and instead advocates for a cohesive learning environment where all learners, including those with disabilities, can thrive. The United Nations Educational, Scientific and Cultural Organization (UNESCO) emphasizes that inclusive education is not only about physical presence in classrooms but also about providing the necessary supports and resources to ensure meaningful participation (UNESCO, 2017).

**Digital Literacy** Digital literacy encompasses a set of competencies required to effectively navigate, evaluate, and create information using digital technologies. It goes beyond mere technical skills to include critical thinking, creativity, and the ability to communicate and collaborate in online environments. In the context of inclusive education, digital literacy equips students with essential skills needed to engage with digital content, thereby enhancing their learning experiences and fostering participation in society (Ng, 2020).

**Essential Skills for the Digital Age:** Essential skills in the digital age include critical thinking, problem-solving, communication, and collaboration. These skills are necessary for students to thrive in a technology-driven world and are closely linked to both inclusive education and digital literacy. Integrating these skills into educational curricula ensures that all students, regardless of their background or abilities, are prepared for future challenges (Martin, Grudziecki, & Punyasavatsut, 2019).

## Concept of Inclusive Education

Inclusive education is a philosophy and approach that emphasizes the participation and learning of all students, including those with disabilities, within regular mainstream classrooms. It aims to dismantle barriers to access and ensure that every student, irrespective of their background, abilities, or differences, receives a high-quality education in an inclusive and supportive environment (UNESCO, 2009). This approach fosters diversity, equity, and social inclusion within the educational system by affirming that all students have the right to engage with and benefit from the general education curriculum. It is an education that seeks to ensure that all students are educated in a manner that respects their individual needs and contributions. It focuses on fostering an inclusive school culture where all student, including those with diverse

needs, are active participants in the educational community. Thus, benefitting from shared learning experiences (Mitchell, 2014).

As UNESCO (2017) highlights, inclusive education ensures that all students are welcomed into their neighborhood schools, attending age-appropriate classes and being supported to learn, contribute, and participate fully in school life. This philosophy embraces the diversity of students, including those with disabilities, diverse cultural backgrounds, and varied learning styles, recognizing that such diversity enhances the learning experience.

## Impact of Inclusive Education

Stigma, accessibility issues in the workplace, lower rates of high school and college completion can negatively impact employment outcomes for adults with learning issues. Inclusive education can have a profound positive impact on employability of graduates with disabilities. Inclusive education can impact on special needs graduate in the following aspects as noted by Carter, Asmus, Moss & Horne (2012):

**Improved academic achievement**: Inclusive classrooms often lead to improved academic outcomes for students with disabilities, as they benefit from access to the general education curriculum and effective instructional strategies. In inclusive classrooms, students with disabilities interact with each other. This interaction can lead to improved academic achievement because it fosters positive peer relationships and cooperative learning. When students with disabilities are included in regular classrooms, there is less stigmatization and labeling. This leads to improved self-esteem and reduced anxiety among students, which can positively impact their ability to learn and achieve academically.

**Enhanced social skills and peer relationships***:* Carter, et al (2012) emphasized that students with disabilities in inclusive settings have opportunities to develop social skills and build meaningful relationships with their peers. Inclusive education brings students with diverse abilities and backgrounds into regular classrooms. This environment promotes increased social interaction among students. Students with disabilities have more opportunities to interact with their peers without disabilities, which can lead to the development of social skills and the formation of positive peer relationships.

**Increased tolerance and empathy**: generally developing peers in inclusive settings often develop greater tolerance, empathy, and understanding of individual differences. Inclusive classrooms promote a sense of belonging and community among all students. When students feel like they are part of a supportive community, they are more likely to exhibit tolerance,

empathy, and acceptance towards their peers. In inclusive settings, students learn to work together and resolve conflicts collaboratively.

**Preparation for a diverse society**: Inclusive education equips all students with the skills and attitudes needed to live and work in a diverse society, promoting inclusivity beyond the classroom. Inclusive education promotes active citizenship and civic engagement by teaching individuals with special needs about their rights and responsibilities in a diverse society.

**Reduced stigmatization***:* Inclusive education emphasizes providing equal opportunities for all students to access a high-quality education. When students with special needs succeed academically and socially, it challenges stigmatizing beliefs and attitudes. It normalizes the presence of students with special needs in general education settings. When these students are integrated into regular classrooms, their differences become less stigmatized as they are seen as a natural part of the diverse student population.

## Literacy in the Digital Age

Literacy is the ability to read and write (UNESCO, 2017). It involves understanding how written symbols relate to sounds, so you can read, speak, and comprehend written words. Essentially, literacy means knowing how to connect sounds with written letters to make sense of written text (Vlieghe, 2015). It is a skill that people, both children and adults, spend years developing. Over time, literacy has become much more common. Today, about 81% to 90% of people around the world can read and write, depending on their age and gender (UNESCO, 2016). What was once a skill for a small, elite group is now widespread. Literacy allows us to record, preserve, and share information easily and helps us keep track of details over time. In the digital age, literacy has evolved beyond traditional reading and writing to encompass a broader set of skills essential for navigating, interpreting, and creating information using digital technologies. This expanded concept of literacy, often referred to as digital literacy, integrates traditional literacy skills with new competencies required to function effectively in a digital environment.

## Digital Literacy

More broadly, digital literacy is defined as the capacity to interpret and understand information from digital sources and to produce contents in various digital formats (Bawden, 2008). Digital literacy involves more than the ability to operate digital devices. It encompasses a range of skills, including the ability to critically evaluate digital contents, create and communicate information through various digital formats, and understand the ethical implications of digital interactions (Eshet-Alkalai, 2012). As digital technologies continue to permeate all aspects of life, literacy in the digital age requires individuals to adapt and acquire skills that will enable

them to manage and make sense of the vast amounts of information available online. Acquiring digital skills enables learners to manage an ever-expanding array of information which are crucial for both academic success and professional competence in a continuously evolving digital environment (Mohammadyari & Singh, 2015).

## Impact of Digital Literacy

**Enhanced access to information**: Digital literacy empowers individuals to effectively search for, access, and utilize a vast array of information available online. This capability supports informed decision-making and allows users to acquire knowledge on diverse topics quickly. With digital skills, people can engage with a wealth of resources, including academic journals, online courses, and databases that were previously less accessible (Bawden, 2008).

**Improved educational outcomes**: In educational settings, digital literacy enhances learning by enabling students to engage with interactive tools, access educational resources, and collaborate with peers online. Students who are digitally literate can better navigate educational technologies, participate in virtual classrooms, and complete assignments using digital tools, contributing to a more engaging and effective learning experience (Hobbs, 2017).

**Increased employability and career development**: Digital literacy is crucial for career development in today's job market. Proficiency with digital tools and platforms are often a prerequisite for many jobs, making digital skills a key factor in employability. Employees who are digitally literate can adapt to new technologies, communicate effectively through digital channels, and leverage digital tools to enhance productivity and innovation (Ng, 2012).

**Enhanced communication and collaboration**: Digital literacy facilitates effective communication and collaboration across various digital platforms. Skills in using email, social media, and collaboration tools enable individuals to connect with others, share information, and work together on projects regardless of geographical distances. This capability is vital for both personal interactions and professional teamwork (Eshet-Alkalai, 2012).

**Empowerment and participation**: Digital literacy promotes active participation in the digital society by enabling individuals to engage with online communities, contribute to discussions, and access services and opportunities. It empowers people to be informed digital citizens, exercise their rights online, and participate in civic activities and social movements (Dede, 2010).

## Integration of Inclusive Education and Digital Literacy in the Digital age

The intersection of inclusive education and digital literacy forms a robust conceptual framework that aims to create equitable, accessible, and effective learning environments for all students. This integration is pivotal in ensuring that every learner, regardless of their abilities or background, can fully participate in and benefit from educational opportunities in the digital age. Ng (2012) describes this integration necessary due to:

***Accessibility***: The framework emphasizes the need for accessible digital tools and resources that cater for diverse learners. This includes designing digital content that are compatible with assistive technologies, ensuring that students with disabilities can access and engage with educational materials.

***Equity***: Digital literacy can help bridge gaps in educational opportunities by providing equal access to information and learning resources. This principle aligns with inclusive education's goal of ensuring that all students, regardless of their socioeconomic background, have the tools they need to succeed.

***Personalized learning***: Digital tools can facilitate personalized learning experiences by adapting to individual student's needs and learning styles. This is particularly beneficial in inclusive education, where students may require different levels of support and intervention.

***Collaboration and communication***: The framework encourages the use of digital platforms that promote collaboration and communication among students. These tools can help build inclusive communities where students learn to work together, share ideas, and support each other's learning journeys.

***Curriculum design***: Integrate digital literacy into the curriculum in ways that support inclusive education goals. This involves creating lesson plans that use digital tools to enhance learning while accommodating the diverse needs of students.

***Assistive technologies***: Utilize assistive technologies to support students with disabilities. These technologies can range from screen readers and speech-to-text software to more advanced tools that offer personalized learning experiences.

## Digital Literacy Skills Needed for Inclusive Education

Incorporating digital literacy into inclusive education requires specific competencies that ensure all students can engage with and benefit from digital tools and resources. These competencies help create equitable learning opportunities and support diverse educational

needs. The following digital literacy competencies are essential for effective inclusive education:

- **Basic Digital Literacy**

Basic digital literacy refers to the foundational skills and knowledge needed to use digital devices, navigate digital environments, and interact with digital contents effectively. It is an essential competency in the modern world, enabling individuals to perform everyday tasks, communicate, and access information using technology (Hobbs 2017). Koltay (2011) considers it as the gateway to more advanced digital skills and is essential for participating fully in modern society. By mastering device operation, navigating software applications, browsing the internet safely, communicating digitally, managing files, and troubleshooting issues, individuals can effectively engage with digital tools and resources. As technology continues to evolve, maintaining and updating these basic skills will be crucial for keeping pace with new digital developments. Ng (2012) highlights the basis component of basic digital literacy as device operation, navigating software applications, internet browsing and online safety, file management, basic trouble shooting, information literacy, digital content creation and cyber security:

- **Device operation**: **Device operation** involves the skills and knowledge required to use digital devices effectively. Understanding hardware is the first step in device operation. This includes knowing how to power devices such as computers, tablets, and smartphones on and off safely. Familiarity with basic hardware components, like keyboards, mice, touchpads, touchscreens, and peripherals such as printers and external drives, is essential. Additionally, understanding connectivity options, such as Wi-Fi, Ethernet, Bluetooth, and USB, is vital for integrating devices into various digital environments. Proficiency in device operation is fundamental for effectively engaging with digital technology.
- **Navigating software applications**: Navigating software applications is a fundamental component of basic digital literacy, encompassing the skills required to use various software tools and applications effectively. Proficiency in this area enables individuals to perform a wide range of tasks, from word processing to data analysis, and to utilize technology efficiently in both personal and professional contexts. Understanding how to use common software applications is essential. This includes word processors such as Microsoft Word, which are used for creating and editing documents. Word processors enable users to produce text documents with various formatting options, incorporating elements such as images, tables, and hyperlinks. Spreadsheets, like Microsoft Excel, are another critical application.

- **Internet Browsing and Online Safety**

Proficiency in using web browsers is fundamental to internet browsing. Web browsers like Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge are tools that allow users to access the internet. Knowing how to use these browsers includes understanding how to open and close tabs, bookmark favorite websites, and manage browser settings for an optimized experience (Bawden 2008). Effective use of search engines is also crucial. Search engines like Google, Bing, and Yahoo help users find information on the internet. Understanding how to use keywords and search operators (like quotation marks for exact phrases or minus signs to exclude terms) can significantly enhance search efficiency and accuracy.

Online safety encompasses practices and behaviours that protect users from digital threats such as viruses, malware, phishing, and identity theft. One fundamental aspect is recognizing secure websites. Secure websites typically use HTTPS rather than HT]TP, indicating that the connection is encrypted. Looking for a padlock icon in the browser's address bar is a simple way to identify secure sites. Creating and managing strong passwords is another critical online safety practice. Strong passwords should be unique, complex, and include a mix of letters, numbers, and symbols. Using password managers can help in generating and storing strong passwords securely.

- **File Management**

File management is a critical digital literacy skill that underpins successful inclusive education in the digital age. It involves organizing, storing, and retrieving digital files efficiently, ensuring that learners can manage their educational resources effectively (Zheng, Warschauer, & Farkas, 2013). This involves creating, saving, retrieving, and managing files, understanding different file formats, and using cloud storage solutions. According to Livingstone (2011) file management contributes to inclusive education in the following ways: organization, accessibility, collaboration, independence, efficiency.

**Organization**: Effective file management involves creating, naming, and organizing files and folders systematically. This skill helps students keep their digital workspace tidy, making it easier to find and manage educational materials. Studies have shown that organized digital environments reduce cognitive load and enhance learning efficiency.

**Accessibility**: Proper file management ensures that educational resources are readily available and accessible to all students, including those with disabilities. Organized files can be easily located and converted into accessible formats (e.g., Braille, large print, audio) to accommodate different learning needs.

**Collaboration**: Inclusive education often involves group work and collaborative projects. Efficient file management allows students to share and collaborate on documents seamlessly, regardless of their physical location or individual needs. Cloud storage solutions like Google Drive and Microsoft One Drive facilitate real-time collaboration, ensuring equitable participation.

**Independence**: Teaching students file management skills fosters independence, allowing them to navigate digital environments confidently. This is particularly important for students with special educational needs, as it empowers them to take control of their learning and reduces reliance on educators and support staff.

**Efficiency**: Efficient file management minimizes the time spent searching for documents, maximizing learning time. Students learn to use folders, labels, and search functions to keep their work organized, which is especially beneficial for those who may struggle with organization due to cognitive or developmental challenges.

- **Basic Troubleshooting**

Basic troubleshooting is a critical digital literacy skill essential for inclusive education. It involves diagnosing and resolving common technical issues that may arise with digital devices and software (Pfleeger & Atlee, 2010). By equipping students and educators with troubleshooting skills, educational environments become more adaptive to the diverse needs of all learners. The ability to solve common technical problems, may include skills such as restarting devices, updating software, and seeking help for technical issues. Furthermore, Pfleeger & Atlee (2010) highlight them as: identifying common problems, systematic problem solving, preventive maintenance, empowerment and independence;

**Identifying common problems**: Understanding the most frequent technical issues that can occur with hardware (e.g., computers, tablets, and printers) and software (e.g., operating systems, applications, and online platforms). This includes recognizing issues like frozen screens, unresponsive applications, connectivity problems, and error messages.

**Systematic problem-solving**: Developing a systematic approach to problem-solving, which includes steps such as:

i. Diagnosis: Identifying the symptoms and possible causes of the issue.

ii. Testing: Performing basic tests to isolate the problem, such as restarting the device, checking connections, or running diagnostic tools.

iii. Resolution: Implementing solutions based on the diagnosis, such as updating software, adjusting settings, or reinstalling applications

iv. Resource utilization: Knowing how to use available resources effectively to troubleshoot issues, including:

v. Help menus and documentation: Accessing and using built-in help menus and user manuals.

vi. Technical support services: Knowing when and how to seek assistance from technical support services or IT professionals.

**Preventive maintenance**: Understanding and performing regular preventive maintenance tasks to minimize the likelihood of technical issues. This includes keeping software updated, regularly scanning for viruses and malware, and managing system resources efficiently.

**Empowerment and independence**: Teaching students and educators basic troubleshooting skills empowers them to solve minor technical issues independently, reducing downtime and increasing productivity. This is particularly important in inclusive education settings, where timely resolution of technical issues can significantly impact learning outcomes for students with special needs.

- **Information Literacy**

Information literacy is a crucial digital literacy skill that enables individuals to effectively find, evaluate, and use information. Information literacy ensures that all learners can navigate the vast amount of information available digitally, making informed decisions and contributing meaningfully to their educational experiences (Ribble, 2015). Information literacy involves the ability to locate, evaluate, and use information from various digital sources. Hobbs (2010) noted that information literacy skills such as effective search techniques, critical assessment of information credibility, and proper citation practices is crucial for making informed decisions and conducting research. Ribble (2015) noted the following important aspects of information literacy that are essential to the students:

**Critical evaluation**: Teaching students to assess the credibility of information sources, including authorship, publication date, and the reputation of the publisher. This skill helps prevent the spread of misinformation and ensures that students rely on accurate and reliable information

**Bias detection**: Understanding how to identify bias in information sources and recognizing how perspective agenda can influence contents. This is crucial for developing critical thinking and ensuring a balanced understanding of topics.

**Effective searching**: Knowing how to choose and use effective keywords and phrases to find relevant information quickly. This involves understanding how search engines work and how to refine search queries for better results.

**Advanced search techniques**: Utilizing advanced search techniques, such as Boolean operators (AND, OR, NOT), filters, and specialized search engines, to narrow down search results and find specific information.

**Ethical use of information**: Understanding the importance of citing sources correctly to give credit to original authors and avoid plagiarism. This includes knowledge of different citation styles and the ethical use of information. Recognizing intellectual property rights and respecting them by not unlawfully copying or distributing copyrighted material.

**Digital Content Creation**

Digital content creation is a vital digital literacy skill that enables learners to express themselves,

share knowledge, engage with their peers and educators in meaningful ways. This skill empowers students with diverse needs and abilities to participate actively in the learning process and contribute creatively to their educational communities (Green & Young, 2020). The ability to create and manage digital content is an important skill in the digital age. This includes producing various forms of media such as text, images, videos, and presentations (Hrastinski, 2019). Digital content creation allows individuals to express themselves creatively and communicate ideas effectively through,

**Multimodal expression**: Students should be proficient in creating content using different formats, such as text, audio, and visual media. This enables them to communicate their ideas effectively and cater for diverse learning preferences and needs (Coiro et al., 2019). Creating videos helps students develop storytelling skills and allows for a richer presentation of ideas. Video content can be particularly engaging and accessible for students with different learning styles (Green & Young, 2020).

**Online collaboration platforms**: Using tools like Google Docs, Microsoft Teams, and other collaborative software allows students to work together on projects, share ideas, and provide feedback in real-time. These tools foster collaboration and ensure that all students, including those with disabilities, can contribute equally (Hrastinski, 2019).

**Social media and digital publishing**: Understanding how to use social media and digital publishing platforms responsibly enables students to share their work with a broader audience and engage in digital communities (Greenhow & Askari, 2017).

**Graphic design**: Proficiency in graphic design software, such as Adobe Photoshop or Canva, allows students to create visually appealing and informative content. This skill is important for making learning materials more engaging and accessible (Fleischmann & Daniel, 2020).

**Coding and programming**: Basic knowledge of coding and programming can empower students to create interactive contents, such as websites and apps, enhancing their problem-solving skills and preparing them for future technological advancements (Kafai & Burke, 2015).

**Narrative techniques**: Digital storytelling involves using digital tools to tell stories, which can be a powerful way for students to connect with the material and with each other. This technique supports the development of empathy and creativity (Robin, 2016).

**Interactive media**: Creating interactive contents, such as games and simulations, allows students to engage deeply with the material and explore complex concepts in an immersive way (Gee, 2013).

- **Cybersecurity Awareness**

Cybersecurity awareness is a crucial digital literacy skill that involves understanding the principles and practices necessary to protect digital information and systems from various cyber threats. Cybersecurity awareness ensures that all students and educators are equipped with the knowledge and tools to protect themselves and their digital environments from potential risks, thereby creating a safe and secured learning environment (Solove, 2021). Cybersecurity awareness is crucial for protecting personal and professional information from digital threats. This includes understanding basic principles of online security, such as using strong passwords, recognizing phishing attempts, and safeguarding sensitive data. Solove (2021) identified the aspects in cyber security as;

**Understanding types of threats**: Students and educators need to be aware of different types of cyber threats, such as phishing, malware, ransomware, and social engineering. Understanding these threats helps in recognizing potential risks and implementing protective. For example, phishing involves fraudulent attempts to obtain sensitive information by disguising as a trustworthy entity, while malware refers to malicious software designed to damage or disrupt systems.

**Recognizing red flags**: Identifying common indicators of cyber threats, such as suspicious emails, unusual pop-ups, or unexpected system behavior and essential for early detection and prevention of security incidents.

**Password management**: This entails educating students and educators about the importance of using strong, unique passwords and employing password management tools to securely store and manage credentials. This includes the use of multi-factor authentication (MFA) to add an extra layer of security.

**Secure browsing**: Promoting safe browsing practices, such as avoiding clicking on unknown links, verifying website security (e.g., checking for HTTPS), and using reputable security software to protect against threats.

**Personal information**: This identifies teaching the importance of protecting personal information online and understanding how to manage privacy settings on social media and other digital platforms. This includes being cautious about sharing personal details and recognizing the implications of oversharing.

**Recognizing and reporting incidents**: Training on how to respond to and report cybersecurity incidents, such as data breaches or suspicious activities. This includes knowing whom to contact (e.g., IT support or cybersecurity professionals) and what steps to take to mitigate damage.

## Conclusion

Incorporating inclusive education and digital literacy into educational frameworks is vital for equipping students with the essential skills needed in the digital age. As the world becomes increasingly digital, the ability to navigate, evaluate, and create digital content, while ensuring cybersecurity and understanding privacy, becomes fundamental to academic and personal success. **Inclusive education** focuses on creating a learning environment where all students, regardless of their abilities or backgrounds, can thrive. By integrating **digital literacy skills** such as information literacy, digital content creation and cybersecurity awareness, educators can ensure that student have the opportunity to engage meaningfully with educational content. This approach not only supports diverse learning needs but also prepares students for a world where digital skills are critical.

## Recommendations

The following recommendations are proffered for institutional managers and educators to implement:

1. Incorporate digital literacy skills across subjects and grade levels to ensure that all students develop these competencies. This includes teaching information literacy, digital content creation, and cybersecurity awareness as integral parts of the curriculum
2. Invest in and integrate assistive technologies that support various learning needs, such as text-to-speech software, screen readers, and adaptive keyboards. This helps ensure that digital contents are accessible to students with disabilities.

3. Encourage the use of digital collaboration tools to facilitate group work and peer interaction. These tools support diverse learning needs and help build essential skills for working in digital environments.
4. Offer ongoing professional development opportunities for educators to enhance their digital literacy and teaching strategies. This includes training on digital tools, UDL principles, and effective ways to integrate digital literacy into the classroom.
5. Continuously assess the effectiveness of digital literacy programmes and inclusive practices. Use feedback from students and educators to make necessary adjustments and improvements, ensuring that the educational environment remains responsive to evolving needs and technological advancements.

## References

Bawden, D. (2008). *Digital literacy in higher education: A review of the literature*. Journal of Information Literacy, 2(1), 1-15.

Carter, E. W., Asmus, J., Moss, C. K., & Horne, K. (2012). *The effects of inclusive education on the academic and social outcomes of students with disabilities*. *Inclusion*.

Coiro, J., & Dobler, E. (2019). Exploring literacy on the internet: Reading comprehension in a digital world. The Reading Teacher, 72(4), 421-429.

Cruz-Jesus, F., Oliveira, T., & Bacao, F. (2020). Digital divide across the European Union. Information & Management, 57(1), 103-124. https://doi.org/10.1016/j.im.2019.103124

Dede, C. (2010). *Immersive interfaces for engagement and learning*. Science, 328(5983), 324-326.

Eshet-Alkalai, Y. (2012). *Digital literacy: A holistic concept for a digital age*. *The Handbook of Digital and Media Literacy*.

Fleischmann, K. R., & Daniel, A. (2020). The role of graphic design in learning and education. Journal of Educational Technology & Society, 23(1), 45-58.

Gee, J. P. (2013). *The anti-education era: Creating smarter students through digital learning*. Teachers College Press.

Green, L., & Young, A. (2020). Digital content creation and its impact on learning outcomes. Computers & Education, 159, 104012.

Greenhow, C., & Askari, E. (2017). Learning, teaching, and social media: The role of social media in education. Educational Technology Research and Development, 65(3), 835-844.

Hollands, F. M., & Tirthali, D. (2020). Barriers to technology integration in education: A global perspective. Educational Technology Research and Development, 68(3), 1001-1022. https://doi.org/10.1007/s11423-020-09840-1

Hrastinski, S. (2019). Asynchronous and synchronous e-learning. Educause Review, 54(2), 36-48.

Iwu, C. (2021). Challenges and prospects of digital literacy in Nigerian schools. Journal of Educational Technology Systems, 50(2), 192-205. https://doi.org/10.1177/00472395211024629

Kafai, Y. B., & Burke, Q. (2015). Connected coding: A digital age curriculum for young learners. The International Society for Technology in Education.

Livingstone, S. (2011). *Internet use and safety: A report on the experiences of children and young people in the UK*. London School of Economics and Political Science.

Martin, A., Grudziecki, J., & Punyasavatsut, C. (2019). Digital literacy in the digital age. Journal of Technology and Education, 31(4), 110-123. https://doi.org/10.1007/s11528-019-00437-w

Mitchell, D. (2014). *What really works in special and inclusive education: Using evidence-based teaching strategies*. Routledge.

Mohammadyari, S., & Singh, D. (2015). *Digital literacy and its impact on the academic performance of students in the digital age*. *Education and Information Technologies*, 20(2), 321-334.

Ng, W. (2012). *Can we teach digital natives digital literacy?* Computers & Education, 59(3), 1065-1078.

Ng, W. (2020). Digital literacy: An essential skill for the 21st century. *Australian Journal of Educational Technology, 36(2), 77-93.* https://doi.org/10.14742/ajet.4676

Robin, B. R. (2016). Digital storytelling: A powerful technology tool for the 21st century classroom. Theory into Practice, 50(3), 220-228.

Santos, G., & Serpa, S. (2020). Inclusive education in the 21st century. *Journal of Educational Research, 108(3), 250-263*. https://doi.org/10.1080/00220671.2020.1780324

Solove, D. J. (2021). The future of reputation: Gossip, rumor, and privacy on the internet. Yale University Press.

UNESCO. (2009). *Policy Guidelines on Inclusive Education*. United Nations Educational, Scientific and Cultural Organization.

UNESCO. (2016). *Education for people and planet: Creating sustainable futures for all*. Global Education Monitoring Report 2016.

UNESCO. (2017). *A guide for ensuring inclusion and equity in education*. United Nations Educational, Scientific and Cultural Organization.

UNESCO. (2018). Global Framework for Digital Literacy. United Nations Educational, Scientific and Cultural Organization.

UNESCO. (2020). Inclusion and Education: All Means All. United Nations Educational, Scientific and Cultural Organization.

Vlieghe, J. (2015). *The need for digital literacy in the 21st century: A global perspective*. *Journal of Media Literacy Education, 7(2), 1-10.*

Zheng, B., Warschauer, M., & Farkas, G. (2013). *Digital literacy in the 21st century: A new conceptual framework. Journal of Technology, Learning, and Assessment*, 11(3), 1-28