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Digital Literacy for School Administrators: Essential Skills

Nyiramukama Diana Kashaka

Faculty of Education, Kampala International University, Uganda

ABSTRACT

Digital literacy is a critical competency for modern school administrators, encompassing the ability to leverage digital tools, evaluate information critically, and foster a culture of innovation. This paper examines the essential digital skills school administrators require to lead effectively in an increasingly virtual educational landscape. It explores the integration of digital tools for communication, data management, and professional development, highlighting strategies to address challenges such as cybersecurity and staff training. By equipping school leaders with digital proficiencies, institutions can better adapt to evolving educational demands, enhance teacher and student engagement, and safeguard organizational resources. This work provides a framework for implementing digital literacy initiatives in schools, ensuring administrators are prepared to support 21st-century learning environments.

Keywords: Digital literacy, Educational leadership, School administration, Information literacy, Cybersecurity in education, Digital tools for schools.

INTRODUCTION

The ability to lead digital literacy efforts is already considered an essential component of educational leadership. As a profession, library and information science emphasizes the core value of facilitating individuals' access to and use of information in multiple formats and across media. Administrators play a critical role in shaping organizational values, resource allocation, and policy and procedure development. In educational contexts, school library personnel and school administrators foster information literacy learning and access to technology in facilities and virtual platforms for teachers, staff, and students. School administrators are in a unique position as leaders to establish a school culture that values information literacy and provides students with the resources they need to make a positive difference in the world. To achieve this, they need to be information-literate role models who actively employ multiple literacies in real-world scenarios, including digital literacy [1, 2]. School administrators' traditional emphasis on instructional leadership has evolved into an emphasis on innovation and mentorship, providing effective solutions to institutional challenges. Information literacy and digital skills must become second nature to school administrators. Yet, the dynamic space of digital tools is overwhelming and, for many, presents challenges. The rapid advancement and increasing complexity in technology emerge daily, leaving those in the role of decision-making time-starved in their selection of what digital skills to use. While many educators focus on literacy for students, attention to digital literacy for administrators is often overlooked. Integrating skills and methods used to identify, retrieve, evaluate, apply, create, communicate, and use information effectively is a necessary administrative competency to foster personnel growth, implement results-driven changes, foster collaboration among staff and students, and maximize resources. Educational institutions may see benefits in preparing learners, both inside and outside of the classroom, with the necessary digital skills to lead, work, and communicate in an increasingly virtual global community [3, 4].

The Importance of Digital Literacy in Education

In contemporary education systems, digital literacy has become a skill of paramount importance. School administrators need to not only be skilled in using various digital tools but also be equipped to lead their staff toward ongoing improvement in this area. As a result, mastery of these skills will equip administrators with necessary technological proficiencies, particularly in communication, automation, and distributed information. These insights can be used in the digital administrative practices discussed [5, 6]. Teaching in educational institutions is changing and modernizing to adapt to today's society. This new teaching relies on digital tools that promote active methodologies and reaffirm the idea that learning is shared. The integration of digital tools into educational practice is intended to ease the work of teachers and students by providing new resources that are appealing and reinforcing for achieving objectives. The use of digital tools and the Internet in education helps to foster a spirit of creativity, critical thinking, and resourcefulness among students, qualities that today's labor market requires to achieve collaboration and networking among young people. One of the benefits that emerge with the use of digital tools and the Internet in education is increased student participation, with a positive effect on academic performance as well as on motivation and self-esteem. By using blended and digital education with an individual support approach, new educational strategies can be integrated into all types of schools in an inclusive, cooperative teaching and learning framework [7, 8]. A "synergetic" analysis of the framework of digital assets or skills concerning educational practice reveals that it goes beyond mere access to work with tools and software for teachers and students and establishes an invaluable understanding of utilizing the digital environment to improve learning and teaching while addressing school needs and demands; in this way, this approach becomes a strategic direction for schools' development. Today, the literacy that schools need to deal with includes not only the way the students and teachers use the "digital language" in school and their studies but also how they achieve "digital behavior." These features include the means and values that are gained from dealing with digital tools for argumentation, communication, and knowledge management in school science and learning, especially early in science education careers in higher education. Cyber methods facilitate the accumulation and use of web-based knowledge, on one hand, and, on the other, they facilitate the development of digital pedagogical tools designed to deepen the student's knowledge and understanding [9, 10].

Key Concepts in Digital Literacy

Having clarity about terms and concepts is helpful when we learn about digital literacy. Here are some key concepts. - Information literacy: The knowledge, skills, and critical thinking skills for effective searching, analysis, and use of information. Information literacy is central to lifelong learning. Commonly, digital technologies are used to get information or conduct research. - 21st-century learning: Some key terms in 21st-century learning are the 4 Cs: creativity, collaboration, communication, and critical thinking; also known as meta-cognitive strategies for learning and student-centered learning that emphasizes the skills and knowledge learners need to survive and flourish in the 21st century. Many stakeholders in education believe it is part of the mission, educational philosophy, and objectives of schools to promote digital literacy for all students. - Source evaluation and decision making: The ability to decide which information or data to keep and use, based on the main criteria of accuracy, relevance, and reliability of the information itself. Digital technologies have created new and more complex problems, such as misinformation. When many "facts" are really opinions, when misinformation is presented as truth or important, and when even more extreme statements make it difficult to draw the line between truth and opinion, critical thinking is particularly needed. - A reasonable, evidence-based decision: Must be based on the use of information that is evaluated critically. This can be particularly important for school administrators in formal settings. Decision-making: Many systems capitalize on evidence-based budgeting or teaching quality rounds where decisions must be made about the amount of money to be allocated to a particular program or the quality of teaching to a particular criterion. Furthermore, there is also evidence that linking digital literacy has made teachers more effective in the classroom. Above all, information has value. It is meaningful and makes sense: it is not worth separating digital literacy and information literacy; each needs the other. Furthermore, we also believe that thinking about digital technologies as tools that can help all students learn. If administrators have digital technology tools to guide them, they can at least move forward to ensure that those who stay in the room and teach students can direct their actions effectively [11, 12].

Understanding Cybersecurity

Threats to an institution's security within digital spaces have risen. More institutions are experiencing ransomware, phishing, and malware attacks, requiring an understanding of these issues to respond appropriately. Artificial intelligence, or AI, can help as a burdensome tool, but other policies, procedures, and best practices must be in place to mitigate or eliminate threats. The entire community is responsible for safeguarding an institution's systems and data. Given their role, school district administrators and instructional leaders should possess a good grounding in cybersecurity [13, 14]. School leaders must have a basic understanding of terms associated with securing individual information against breaches of security. Broader concepts include understanding data protection or the effort to secure digital information as well as user privacy. Most systems protect data by ensuring that only authorized individuals are allowed entry. Two-factor authentication is one way that access is limited to only approved parties. Physical structures and digital ones feature varying methods to restrict access. Access logs should be kept that show who and when data or a building or office is accessed. Encrypting sensitive information as it is transmitted between locations prevents unauthorized individuals from effectively obtaining sensitive information, as the data appears as odd gibberish unless or until decrypted. Some of the options for best practices in the protection of an information system include policy, procedures, and training. Safeguards can include access logs to demonstrate who accessed the data, encrypting the information from unauthorized eyes, etc. Due to continued threats such as malware and ransomware, training to be aware is becoming increasingly important for users of technology. This can be students and staff, who are emailed and presented with various pop-ups as they work in a digital environment that may have dangerous content. Leadership and the entire school community should be oriented to ensuring security [15, 16]. Impact: Phenomenon: "The compromise of a district's network, data servers, or websites." "The disruption of managerial and technical communication systems." Result: "School operations may be delayed, postponed, or rescheduled." "The reputation of the district as a safe place for learning and privacy could be tarnished." Minimally, security incidents may delay or disrupt important business by days, months, or indefinitely, in some cases. Important, too, is the tarnishing of an institution's reputation due to unsuccessful prevention. An institution prides itself on providing a quality education at a cost-effective rate. The likes of an attack on a high-profile university or university system, leaks of sensitive data, or even social engineering by a threat actor can discourage good-quality students, as well as staff, from applying for employment. Few people wish to be affiliated with an institution that is vulnerable to the prying eyes of or technical exploitations by a cybercriminal. The result can be a school community that nurtures an environment of security. It is the responsibility of everyone to ensure that the institution secures data in digital spaces. Management empowers community members with the knowledge needed to do so. The result of continuously practiced, everyday safeguarding habits protects the reputation of the institution [17, 18].

Digital Tools for School Administrators

School administrators can use many digital tools to increase productivity and be more efficient. These tools typically have one of the following primary functions: communication, organization, data management, teacher learning development, and media creation. While there are thousands of apps and platforms, it is important to choose tools based on what you need and/or what aligns with your district or school goals. Some tools are designed to work alongside an SIS or LMS system. In some cases, the number of digital tools can add to the stress of teachers or staff who may be cautious about using technology, thus slowing down the adoption and use of devices and applications [19, 1]. The software has been developed to manage the workflow explicitly for schools and make it easier to create reports. Schools use administrative software specific to the SIS and LMS system for the school district. There have been quite a few online programs developed to assist staff in keeping documents and teacher evaluations for administrators. However, present-day administrators use cloud-based solutions. Collaborative platforms and an extensive collection of applications for administrators, including professional development resources, spreadsheets, word processing, presentation tools, video meeting platforms, and district information system management. More districts and schools are using data analytics tools to access and analyze data to improve and make curriculum decisions. The point in the future is to enable—if not help—create even more demand for these types of tools. If schools and school districts use new tools as a solution, they need to engage their staff with opportunities to learn and manage the digital tool for their educational environment [20, 21].

Administrative Software and Platforms

There are several internal and external software systems that, once properly set up, can make life easier for a school leader. While technical competencies are important for transactional systems that are easy to set up, no technical experience is necessarily needed. Look for software that is user-friendly and has a low barrier so that it is easy for large numbers of people to learn and use it. While the system must be easy to use, it is also important that it can be set up to meet the specific workflows in our systems. However, leaders have to balance the setup with the fact that school leaders change at a frequency that makes maintaining administrative systems difficult. One of the most challenging portions of the integration is data security, and quite a few of these platforms offer single sign-on support. The service the platform offers is only available to members of a valid organization. This is a decision I would recommend be handled on a case-by-case basis as it is relevant to establishing significant trust in the platform being used. Any software you want to standardize with your staff needs to have training and support resources. A great tool can be wasted if no one knows how to use it. When it comes to tools that everyone must use, like a vision and mission plan or a data warehouse, it is important to devote resources to training staff through regular requirements and also onboarding new staff. Administrative software and platforms are common in educational settings. Administrators who understand the potential integration features in a system and can do a cost-benefit analysis of such integration are essential. It is important to note that even the best tools can become obsolete, and administrators may need to shift their can-do philosophy to work around this limitation [22, 23].

Strategies for Implementing Digital Literacy in Schools

Developing a comprehensive plan for teaching and advancing digital literacy is an essential task. Embrace the research that finds that digital competency is necessary to access new information, adopt innovative practices, and apply higher-order thinking skills. In a school environment, start by collecting data through surveys or focus groups to determine what the current level of knowledge and comfort is with staff. Plans to advance digital literacy need to include the needs of administrators, faculty, and staff. Let everyone know that this plan is designed for all members of the school community. Comprehensive digital literacy plans need to include training for faculty, staff, and students. This training should be ongoing and regularly updated to keep everyone current on new digital tools or modifications made to existing tools [24, 25]. Establish a culture where innovation involves the comfort of taking risks. Teachers, more than most, realize what it is like when something doesn't work as it was designed to, so there needs to be an opportunity for growth as teachers experiment with new learning opportunities for students. Finally, all faculty need to understand the importance of sharing best practices with other faculty throughout the school environment. Support for student needs can always be examined through the data generated from strategic research processes such as surveys, interviews, or focus groups. If digital literacy is a concern, develop a plan or some educational program that is flexible and generative in support of individual needs. In the complexities of an educational environment, the only viable educators are the ones firmly connected with a constantly seeking learning process. The reality that new tools and new ways of learning are occurring should not be a surprise. Educational settings can either adapt or experience diminishing returns and negative financial burdens associated with trying to engage a digitally literate stakeholder without comparable expertise in-house [26, 27]. Find ways to communicate with parents about digital literacy initiatives in school. Your local community likely has technology groups or resources that you can tap into for computer classes, technology fairs, or other educational experiences for parents and the community. They may also provide grants or donations for equipment that the school needs. Experiments in the digital classroom of the 21st century include partnerships with businesses and industries to train the next generation of workers. Some of this training extends into the digital realm. Working with digital equipment manufacturers can lead to donations of current equipment and possibly in-service training for your faculty, staff, and students [28, 29].

CONCLUSION

Digital literacy is no longer an optional skill but an essential competency for school administrators in the 21st century. As leaders, administrators play a pivotal role in shaping the digital landscape of their institutions by fostering a culture of innovation and equipping their staff and students with the tools and knowledge needed for success. However, the rapid evolution of technology presents unique challenges, including the need for continuous learning, effective tool integration, and robust cybersecurity measures. By prioritizing professional development, promoting a collaborative approach to digital innovation, and engaging stakeholders, school administrators can lead transformative changes that enhance learning

outcomes and operational efficiency. Ultimately, embracing digital literacy empowers schools to navigate the complexities of modern education while preparing students to thrive in an increasingly digital world.

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