Digital Dynamics: The Changing Landscape of Secondary School Education

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Abstract: *Digitalization is the buzzword in the concurrent teaching learning paradigm. Remaining oblivious of the Gen-Z trend might bring harm to the teaching learning paradigm. Among epistemological competencies, technological competencies are the current trend since the inception of digital devices. In present dynamic context, it becomes a mandatory skill to equip learners with the exposure to use and utilize technology at an instance for various educational experiences. The present study mainly focuses to know the familiarity of the secondary school students towards digital technology. On one hand, where school students are facing academic problems, how these technologies help them to find the solution to their academic needs. If you are looking for the answers to the potential questions like what knowledge do student have and how often do they make use of the digital technology in their learning endeavor. The present research supplies the insights on the dynamics of digital technology among the secondary education students. For finding the answer to specific questions, researcher interviewed 30 numbers of secondary school students and collected information through a self-constructed questionnaire related to the use of digital technology. Secondary school students are the case in present study. Researcher studied the case and found disentanglement information for future use of technology in learning. In the concluding part of the research, the researcher drew-out that secondary school students are knowledgeable in the digital technology and are able to use these facilities in a dynamic manner.*

Key Words: Digitalization, Technological Devices, Utilization of Technology, Secondary School Student, Learning Endeavor.

1. INTRODUCTION :

Digitalization has provided us with numerous options for integrating digital technology into pedagogy. However, the challenge lies in selecting the most effective resource to achieve educational goals. Gen-Z students are quite familiar with digital devices and their daily use, but it is crucial to evaluate whether they utilize digital technology to meet their educational needs and tasks. The focus should not be on the number of digital options available, but rather on how students use these devices for academic progress. While students are adept at using technology to solve everyday problems, certain fundamental issues regarding its academic application still exist. The researcher aimed to address these unresolved questions, such as whether students are aware of digital technology and how it assists them academically. To assess students' aptitude for digital technology, the researcher personally interacted with many secondary school students, discussing in detail their use of digital technology to find answers to these questions.

The review of related literature clearly highlights the importance of digital technology among students and anticipates a certain level of engagement with it (Popovici & Mironov, 2015). Students' positive attitudes towards digital technology make it a valuable tool that can enhance their learning experience (Henderson et al., 2017). Digital technology has diverse impacts on education, significantly aiding students in understanding the processes and progress necessary for their future (Mondal, 2022). While these findings are already established, the current study aims to personally interact with students to examine the case directly, allowing the researcher to delve deeper into detailed findings for the future. This study stands out due to its unique discussion and the valuable insights it offers to researchers. Its focus on the use of digital technology sets it apart in the current digital landscape.

2. DIGITAL TECHNOLOGY :

Recently, it has been witnessed that interest has been increasing in how communities adopt and interact with digital technologies.

- Digital technology is clearly an integral part of students' daily lives, accessible anytime and anywhere (Danby et al., 2018).
- Digital technologies encompass video sharing sites, learning management systems, digital games, blogs, machine translation, student-response systems, and the internet (Moorhouse, 2023).
- The term digital technology refers to a variety of technological devices and services (Dienlin & Johannes, 2020).

In the current context, digital technology encompasses available digital devices like smart-phones, computers, laptops, and tablets. Additionally, it includes digital services such as online searches, internet usage, software, and educational blogs and apps.

3. SECONDARY SCHOOL STUDENTS :

In this research, secondary school students are those who are enrolled in secondary schools after completing primary education. Therefore, the term refers specifically to students currently attending secondary schools. For this study, a random sampling method was used to select 30 secondary school students from various schools in Anand district, Gujarat. The sample includes 15 girls and 15 boys.

4. AIM & OBJECTIVE :

The primary objective of this study is to gather descriptive data on how secondary school students use digital technology to complete learning-related tasks. It aims to identify the trends in digital technology usage among secondary school students in Gujarat.

5. DATA COLLECTION :

To collect descriptive data, a self-constructed questionnaire was prepared and subsequently validated by experts in the field of education in Anand district, Gujarat. Therefore, the study's limitation lies in the data collection tool, which relies on the questionnaire's face validity.

To develop the questionnaire, the researcher concentrated on specific issues affecting students' digital knowledge. Various aspects were included, such as digital literacy, available digital facilities, socio-economic conditions, basic information and knowledge, daily usage, school infrastructure, family environment, educational needs, types of educational queries, and gaps in aptitude and skills.

Based on the factors mentioned earlier, the researcher formulated a total of 25 questions for review by experts. From these, 15 questions were chosen to be included in the questionnaire, listed as follows….

1. What do you know about digital technology?
2. How you can use digital technology?
3. Which digital device you prefer to use?
4. Which educational software you used?
5. Which educational apps you know about?
6. Do you follow any blogs of your teachers?
7. What is the different between hardware and software?
8. Are you using MS Office on digital devices?
9. What types of information you search online?
10. Do you have Google account?
11. Are you using Social network sites?
12. Which social network sites you prefer for interacting?
13. How many times you will be online on digital devices?
14. Have you used digital technology for solving problems?
15. What is the negative view of digital technology?

All the collected responses from the participants were thoroughly examined to gain insights. It was noted that while the answers varied among the 30 students, the overall nature and content of the responses were similar and consistent.

6. DATA ANALYSIS :

The data in this study was assessed as qualitative data, and the researcher employed descriptive techniques to analyze the responses. During the analysis, it was ensured that ethical standards and necessary codes of conduct were maintained throughout the research process. The table below illustrates the descriptive analysis conducted by the researcher for each question.

1. What do you know about digital technology?
   - Among all the 30 participants each student responded positively that they are aware of the available technologies and can utilize them for educational tasks.

- This finding indicates a high level of digital literacy among the sampled students. It suggests that digital technology is integrated into their learning processes, reflecting its significance in contemporary education. However, without specific details on how they use digital technology or their proficiency levels, the scope of their engagement and effectiveness in using these tools for learning remains unclear. Future studies could delve deeper into the specific types of digital tools and their impact on learning outcomes to provide a more comprehensive understanding.

2. How you can use digital technology?
   - Students utilize digital technology not only for entertainment but also for educational purposes, specifically to clarify challenging topics and reinforce their learning.
   - This statement underscores the dual role of digital technology in students' lives—beyond entertainment, it serves as a tool for educational enhancement and academic support. By using digital technology to clarify difficult topics and supplement their learning, students demonstrate proactive engagement with their education. This aligns with the broader trend of technology integration in education, where digital tools are increasingly seen as essential aids in facilitating learning processes. However, while it highlights the positive use of digital technology, the effectiveness of these tools in improving academic outcomes or addressing specific learning challenges would benefit from further exploration. Future research could investigate the specific types of digital resources students find most beneficial and how these tools impact their overall educational experience and achievement.

3. Which digital device you prefer to use?
   - The majority of students favor using digital devices like smart-phones and computers. Most students were already acquainted with laptops and other digital tools.
   - This observation indicates a prevalent preference among students for popular digital devices like smart phones and computers, suggesting these devices are integral to their daily lives and educational practices. The familiarity with laptops and other digital tools further highlights the students' comfort and competence with technology. However, without specific data on the extent of usage, the purposes for which these devices are predominantly used, or the impact on their learning outcomes, the statement provides a broad overview rather than detailed insights. Future studies could explore how students leverage these devices for educational tasks, their proficiency in using different types of technology, and any potential implications for educational strategies and policies.

4. Which educational software you used?
   - Some students are familiar with educational software and use them to solve their academic challenges.
   - This statement highlights a mixed level of awareness and utilization of educational software among students. While some students actively use these tools to address their educational needs, it suggests that others may not be as familiar or reliant on such software. This variation could stem from differences in access to technology, exposure to educational resources, or individual preferences in learning methods. Further exploration could delve into the specific types of educational software students find beneficial, how they integrate these tools into their learning routines, and whether there are disparities in usage based on factors like socioeconomic background or school resources. Understanding these dynamics can inform efforts to enhance digital literacy and educational support for all students.

5. Which educational apps you know about?
   - Some students possess knowledge about various educational apps and effectively utilize them to achieve their academic goals.
   - This statement indicates a varied level of awareness and proficiency among students regarding educational apps. It suggests that while some students are knowledgeable about these apps and uses them effectively to meet their academic objectives, not all students may have the same level of familiarity or success in utilizing them. This variability could be influenced by factors such as access to technology, digital literacy skills, or personal preferences for learning methods. Further investigation could explore which specific educational apps are most commonly used by students, how they integrate these apps into their study routines, and the impact of app usage on their academic performance and engagement. Such insights could inform educators and policymakers about the potential benefits of incorporating educational apps into teaching practices and supporting students in enhancing their digital learning skills.

6. Do you follow any blogs of your teachers?
   - Most students demonstrated understanding of information shared by their teachers on educational blogs, including blogs created by their teachers and other inspiring educational blogs.

- This statement suggests that a significant number of students engage with educational content shared on blogs, both those created by their teachers and other educational sources. It indicates that students not only access information directly from their teachers but also seek out additional educational resources that inspire them. This behavior reflects proactive learning habits and a willingness to explore beyond traditional classroom materials. However, without specific details on how students interact with these blogs, the extent of their engagement, or the impact on their learning outcomes, the statement provides a general overview rather than in-depth insights. Future research could investigate the specific types of educational blogs students find most valuable, how they integrate blog content into their studies, and whether exposure to educational blogs correlates with improved academic performance or increased motivation.

7. What is the different between hardware and software?
   - All 30 students demonstrated a deep understanding of the hardware and software components of the digital devices they used, with many providing detailed examples.
   - This finding highlights a high level of technical literacy among the students regarding the digital devices they utilize. Their ability to articulate examples indicates not only familiarity but also a practical understanding of how hardware and software components function together. This proficiency is essential in today's digital age, where technological literacy is increasingly important for academic and professional success. However, while the statement indicates comprehensive knowledge among the sampled students, the extent to which this knowledge translates into effective use of digital devices for learning purposes could be further explored. Future studies could investigate how students apply their understanding of hardware and software components to enhance their educational experiences and whether this knowledge influences their preferences for specific types of digital tools or platforms.

8. Are you using MS Office on digital devices?
   - Students were acquainted with using MS Office, and some of them utilized it for completing school assignments and homework tasks.
   - This statement indicates that students have a level of familiarity with MS Office applications, which they actively employ for academic purposes such as completing assignments and homework. MS Office, comprising software like Word, Excel, and PowerPoint, is widely used in educational settings due to its versatility in creating documents, spreadsheets, and presentations. The ability of students to use these tools for school-related tasks suggests practical application of digital skills that are beneficial for their academic progress. However, the extent of proficiency and the range of MS Office applications used by students could vary, influencing their overall effectiveness in utilizing these tools for educational purposes. Further exploration could examine how students integrate MS Office into their study routines, their preferences for specific applications within the suite, and whether proficiency in MS Office correlates with academic performance or efficiency in completing assignments.

9. For what types of information you search online?
   - Students heavily rely on search engines to find useful information on the internet. Many students from remote areas encounter challenges with network coverage, which also makes it difficult for them to select appropriate information online.
   - This statement underscores the widespread use of search engines among students as a primary tool for accessing information online. It reflects the importance of digital literacy in utilizing search engines effectively for educational purposes. The challenges faced by students from remote areas with network coverage highlight digital divide issues, where access to reliable internet connectivity impacts their ability to engage fully in online research and learning. Additionally, difficulties in selecting appropriate information online suggest a need for students to develop critical thinking and digital literacy skills to navigate and evaluate online content effectively. Future studies could explore strategies to improve internet access in remote areas and enhance students' skills in evaluating and utilizing online information responsibly. These efforts could help mitigate digital divide challenges and empower students to leverage digital resources more effectively for their educational goals.

10. Do you have Google account?
    - Some students had Google accounts and demonstrated knowledge of email and its usage. A few students frequently use email for communication.
    - This statement highlights varying levels of familiarity and usage among students regarding email and Google accounts. Having a Google account and understanding how to use email are fundamental digital literacy skills that facilitate communication and access to various online services. The observation that some students

communicate through email indicates their proficiency in utilizing digital communication tools for interpersonal interactions, which is beneficial for both educational and personal purposes. However, the extent of students' proficiency in managing emails, their understanding of email etiquette, and the frequency of use could vary. Further investigation could explore how students integrate email into their communication practices, their comfort level with using email for academic and social purposes, and whether proficiency in digital communication correlates with overall digital literacy and academic success. Understanding these dynamics can inform efforts to enhance students' digital skills and facilitate effective communication in educational settings.

11. Are you using Social network sites?
   - Most students confirmed that they use social networking sites not just for entertainment but also to watch motivational speeches by experts.
   - This statement indicates that a significant number of students utilize social networking sites as a platform for accessing motivational content, alongside their entertainment purposes. It suggests that students are leveraging digital platforms for personal development and inspiration, beyond traditional forms of entertainment. This use of social networking sites reflects a broader trend where digital media serves dual roles in both entertainment and educational enrichment. However, while the statement highlights positive engagement with motivational content, it also raises considerations about the balance between productive use and potential distractions on social media. Future studies could explore how students navigate and filter motivational content on social networking sites, their preferences for specific types of motivational speeches or experts, and whether exposure to such content influences their academic motivation or personal growth. Understanding these dynamics can inform strategies for integrating digital media effectively into educational environments while promoting positive digital citizenship and responsible media consumption habits.

12. Which social network sites you prefer for interacting?
   - Most students were utilizing Facebook, Instagram, and WhatsApp for social interactions.
   - This statement indicates that a large proportion of students are active on popular social media platforms such as Facebook, Instagram, and WhatsApp for communication and social interaction purposes. These platforms are widely used for connecting with friends, sharing updates, and engaging in conversations. The widespread adoption of these social media tools among students highlights their role in facilitating interpersonal relationships and social networking in today's digital age. However, while social media offers opportunities for connectivity and communication, it also raises concerns about privacy, online safety, and potential distractions. Future research could explore how students manage their use of social media platforms, the impact of social media on their social relationships and academic performance, and strategies to promote responsible use of digital communication tools among young users. Understanding these dynamics can inform educational strategies and policies aimed at fostering positive digital citizenship and enhancing students' digital literacy skills.

13. How many times you will be online on digital devices?
   - According to the students' responses, they frequently use digital devices and are online throughout the day. Their answers were qualitative, indicating that they are online numerous times daily.
   - This statement suggests that students have high levels of digital engagement, with frequent use of digital devices and extended periods spent online each day. The qualitative nature of their responses indicates that while specific quantitative data (exact number of hours or instances) was not provided, their online presence is significant and consistent throughout the day. This behavior reflects the pervasive influence of digital technology in students' lives, where they utilize online resources for various purposes, including education, communication, entertainment, and information gathering. However, without quantitative specifics, it is challenging to determine the exact extent or frequency of their online activities. Future studies could employ quantitative methods to quantify students' digital usage patterns more precisely and investigate how these patterns impact their academic performance, well-being, and overall digital literacy. Understanding these trends can inform educators and policymakers in effectively supporting students' digital habits and promoting responsible and balanced technology use.

14. Have you used digital technology for solving problems?
   - Students utilized technology to find solutions for a variety of purposes, including educational, social, medical, and informational needs.
   - This statement highlights the versatile use of technology among students, indicating that they rely on digital tools to address diverse needs across different aspects of their lives. The use of technology for educational

purposes underscores its role in supporting learning and academic achievement. Additionally, leveraging technology for social interactions, medical information, and general information retrieval reflects its broader utility in enhancing communication, accessing healthcare resources, and acquiring knowledge. However, while the statement emphasizes the positive impact of technology in facilitating solutions, it also raises considerations about the reliability of online information and the need for students to develop critical thinking skills to evaluate digital content effectively. Future research could explore how students navigate and utilize technology for various purposes, their preferences for specific digital tools or platforms, and the effectiveness of technology use in meeting their diverse needs. Understanding these dynamics can inform efforts to promote digital literacy and responsible use of technology among students in educational contexts.

15. What is the negative view of digital technology?
   - According to students' perspectives, technology offers multiple solutions to a single problem, causing them to face dilemmas in choosing which solution to use.
   - This statement reflects a critical viewpoint from students regarding the use of technology in problem-solving. It highlights a common challenge where the abundance of technological solutions available can lead to confusion and uncertainty about the most appropriate option to employ. This dilemma underscores the importance of not only having access to technological resources but also developing critical thinking and decision-making skills to effectively navigate and evaluate digital solutions. It also suggests a need for educators to support students in developing strategies for discerning between various technological options based on relevance, reliability, and appropriateness to the task at hand. Future research could delve deeper into how students perceive and manage these dilemmas, the strategies they employ to select and utilize technology effectively, and the impact of decision-making processes on their learning outcomes and digital literacy development. Understanding these dynamics can inform educational practices aimed at fostering responsible and informed technology use among students.

7. CONCLUSION :

The study explores the importance of digital technology for secondary school students, likening it to having personal tutors at their disposal. Detailed analysis reveals that students effectively use digital tools to tackle everyday challenges, showcasing their adeptness with various devices. Interactions with students indicate a generally positive view of digital technology, despite occasional criticisms. Insights from experts and data discussions confirm that students extensively rely on digital technology for educational tasks such as calculations, assignments, presentations, and note-taking. This underscores secondary school students' thorough understanding of digital technology and emphasizes the joint responsibility of parents and educators in providing necessary support and resources for enriching e-learning experiences. Furthermore, the study underscores the researcher's commitment to ethical practices in assessing students' proficiency with digital technology.

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