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Teachers Digital Literacy Skills and Teaching Practices among Government Degree College Teachers in Davanagere District

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Abstract

This study examines the digital literacy skills and teaching practices of Govt. Degree College teachers in the Davanagere District during the College Year 2023-2024. As digital integration in education becomes increasingly important, it is essential to understand teachers' proficiency with digital tools and how these skills influence their teaching. The study focuses on assessing the level of digital literacy among teachers and its impact on classroom effectiveness and student engagement.

A descriptive correlation research design was used, involving 11 Government degree College teachers from the Davanagere District, selected through a complete enumeration survey. The study utilized researcher made instrument for moderating variables exploring respondents' characteristics, patterned and modified based on the SEAMEO GURO 21 Module 1 Course 1 instrument for independent variables examining teachers' digital literacy skills, and researcher-made instrument for dependent variables assessing teaching practices. Data analysis involved descriptive statistics through mean and standard deviation and inferential statistics, including Pearson correlation, t-tests, and ANOVA, to identify significant relationships and differences among the variables.

Key findings indicate that teachers with higher digital literacy skills demonstrate significantly better teaching practices. A strong correlation was found between digital literacy and teaching practices, with significant differences observed based on teachers' positions, training, and attitudes toward digital literacy. The study concludes that improving digital literacy through targeted professional development and fostering positive attitudes are essential for enhancing teaching practices. Recommendations include developing policies for career advancement, investing in professional development, creating supportive environments for technology integration, encouraging teachers to pursue growth opportunities, and conducting further research on the impacts of digital literacy training.

Keywords: Teacher's digital literacy skills, teaching practices

1. Introduction

1.1. Background of the Study

As the world becomes increasingly digitalized, the education sector faces the challenge of integrating technology into teaching practices to enhance learning outcomes. Digital literacy skills among teachers are critical in this transition, enabling them to effectively use digital tools and resources in their classrooms. This study aims to assess the digital literacy skills of Govt. Degree College teachers in the Davanagere District and explore how these skills impact their teaching practices. By understanding the current state of digital literacy among these teachers, the study seeks to identify gaps and propose strategies for improvement.

Digital literacy skills encompass the ability to effectively use digital tools and technologies for various tasks, including teaching. These skills involve proficiency with hardware such as computers and tablets, software applications, online platforms, and multimedia resources. Beyond technical know-how, digital literacy includes the capacity to integrate these tools into pedagogical practices to enhance learner engagement and learning outcomes. Recent studies emphasize the importance of digital literacy for teachers, highlighting its role in fostering critical thinking, collaboration, and effective communication among learners (Hobbs, 2021).

Globally, there is a significant disparity in teachers' digital literacy skills, posing challenges to the effective integration of technology in education. Studies indicate that many teachers lack sufficient training and support to leverage digital tools effectively, leading to underutilization of available technologies. The gap between teachers' self-perceived digital competencies and their actual proficiency often results in missed opportunities for enhancing learning through technology. For instance, studies by the Organization for Economic Cooperation and Development (OECD, 2021) and Rodriguez *et al*. (2021) reveal that numerous teachers feel inadequately prepared to integrate digital tools into their teaching, which can limit the potential advantages of technology in education. Additionally, factors such as limited access to technological resources and infrastructural challenges exacerbate these issues, especially in developing countries where digital divides are more pronounced (Area-Moreira, Bonilla, & Mesa, 2020; Quaicoe & Pata, 2020).

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In the Philippines, the Department of Education (DepEd) acknowledges the importance of digital literacy and has launched various initiatives to promote ICT integration in schools. Despite these efforts, significant challenges remain in achieving comprehensive digital literacy among teachers. The Philippine education system faces issues such as uneven distribution of resources, varying levels of access to technology, and the need for continuous professional development for educators. Cervantes (2020) notes that these challenges are compounded by infrastructural constraints and the need for more targeted training programs to fully develop teachers' digital literacy skills.

1.2. Literature and Related Studies

The literature review thoroughly investigates the digital literacy skills in Govt. Degree College teachers in the Davanagere District. Digital literacy encompasses a wide array of competencies, including technical, information literacy, communication, media literacy, and cyber security awareness. These skills are crucial for effectively navigating and understanding the digital landscape. Incorporating digital tools into teaching practices involves integrating digital content, facilitating interactive learning, providing assessment and feedback, and preparing instructional aids. These elements are essential for modernizing education and enhancing student engagement and learning outcomes.

Various moderating variables add complexity to the dynamics within the digital educational environment. Factors such as teachers' positions, teaching experience, grade levels taught, participation in digital literacy training and seminars, and attitudes towards digital literacy significantly influence the success of digital integration in teaching practices. Understanding these interconnected factors offers a comprehensive perspective on how digital literacy skills impact teaching practices among Govt. Degree College teachers in the Davanagere District. This review aims to shed light on the multifaceted nature of digital literacy in education, highlighting the need for targeted professional development and supportive educational policies to foster effective digital integration in schools.

1.3. Position

Career advancement for teachers is often hindered by strict requirements and a lack of available higher positions. The OECD (2020) reports that many education systems face challenges with teacher promotion, leading to a bottleneck where many educators remain in entry-level positions for long periods. This situation can diminish motivation and job satisfaction, ultimately affecting the quality of education. Day *et al*. (2019) also emphasize that the lack of clear and attainable career pathways can lead to a high turnover rate among teachers, further destabilizing the education system. Addressing these challenges requires a reevaluation of promotion criteria and the creation of more accessible career pathways.

1.4. Teaching Experience

Teaching experience plays a crucial role in shaping a teacher's ability to integrate new technologies into their practice. Johnson (2021) highlights that mid-career teachers typically combine significant classroom experience with adaptability, making them particularly effective at integrating digital tools into their teaching practices. This matches the finding that teachers with 6-10 years of experience are proficient in their pedagogical roles but are still advancing their digital skills. Similarly, Wang and Wang (2022) found that mid-career teachers are adept at incorporating technology due to their extensive teaching background, which provides a strong foundation for integrating new tools. Such teachers can effectively utilize their established methods while progressively adopting new technologies, leveraging their deep understanding of educational practices to enhance their use of digital tools.

Miller *et al*. (2020) emphasize the crucial role of teaching experience in mastering digital platforms, noting that those with substantial classroom experience are better positioned to integrate these technologies into their teaching strategies. This is supported by the research of Smith and Davis (2021), who found that experienced educators, through their years of practice, can adapt digital tools to fit their teaching methods more seamlessly. Continuous professional development plays a key role in this process, as it helps mid-career teachers refine their digital literacy and apply new technologies effectively.

Lee (2021) highlights the importance of continuous professional development for both mid-career and novice teachers. For mid-career teachers, continuous training is essential to maintain and enhance their digital skills, ensuring they stay current with technological advancements. For novice teachers, professional development offers the essential knowledge required to effectively incorporate technology into their teaching practices. Brown and Green (2023) also emphasize that targeted professional development programs can significantly enhance teachers' ability to use digital tools, supporting the overall evolution of teaching practices across all levels of experience.

1.5. Attitude towards Digital Literacy Skills

Teachers' attitudes toward digital literacy skills are crucial for effective technology integration in education. Chen and Liu (2020) found that educators with positive attitudes toward technology are more likely to engage in professional development. This positive attitude is essential for fostering a culture of continuous learning and technological adoption. Alghamdi and Bayaga (2020) [3] emphasize that administrative support is vital in nurturing such positive attitudes. This institutional backing can significantly influence teachers' enthusiasm and engagement with digital tools.

The impact of teachers' beliefs and attitudes on their readiness to adopt digital tools is also significant. Hamalainen *et al*. (2021) found that educators' perceptions directly affect their willingness to incorporate technology into their teaching practices. Johnson and Smith (2022) argue that a supportive school environment and positive attitudes enhance the effectiveness of digital literacy training. When teachers believe in the value of technology, they are more likely to implement it effectively. This highlights the importance of continuous professional development and a supportive administrative framework.

Additionally, Patel and Green (2023) discovered that teachers' attitudes towards digital literacy are influenced by their experiences with past technology training. Their study shows that past experiences, whether positive or negative, shape current attitudes and can either encourage or deter engagement with new digital tools. Effective professional development programs must address past challenges and build confidence in using technology. This comprehensive approach is key to fostering positive attitudes and successful technology integration in education.

1.6. Teachers' Digital Literacy Skills

Teachers' digital literacy skills are essential for effectively integrating technology into education and enhancing teaching and learning outcomes. These skills are crucial for teachers to navigate the digital landscape and integrate technology into their teaching practices. Digital literacy involves more than just technical proficiency; it encompasses the ability to locate, assess, create, and share information using digital technologies. Hargittai (2020) defines digital literacy as the ability to utilize digital tools for managing information, highlighting the importance of grasping the social and cultural contexts in which these tools operate. This comprehensive approach highlights the multifaceted nature of digital literacy, incorporating technical, cognitive, and social dimensions.

Incorporating digital literacy into education is vital for equipping students to navigate the demands of the digital age. Research by Gudmundsdottir and Hatlevik (2022) underscores the significance of digital literacy skills for teachers, noting that these skills are vital for facilitating effective teaching and learning processes in the classroom. Digitally literate teachers can utilize technology to design interactive and engaging learning experiences, thereby improving student outcomes. Professional development is crucial in improving these skills. Canals *et al*. (2019) found that teachers who participate in frequent and high quality training sessions are more likely to demonstrate increased confidence and proficiency in using technology in their teaching practices, suggesting that continuous professional growth is key to improving the digital literacy environment among Govt. Degree College teachers in the Davanagere District.

Moreover, teachers' attitudes towards digital literacy significantly impact their engagement with digital technologies. Chen and Liu (2020) contend that teachers who have a positive attitude towards technology integration are more inclined to pursue professional development opportunities in digital literacy. Cultivating a supportive organizational culture and providing incentives for skill development are essential strategies for fostering positive attitudes towards digital literacy among teachers. By understanding and addressing these factors, educational institutions can better support teachers in developing the digital literacy skills necessary for modern education, ultimately enhancing teaching practices and student outcomes.

1.7. Communication

Effective communication skills are crucial for fostering meaningful interactions in educational settings. Gómez-Trigueros *et al*. (2019) emphasize the importance of these skills in creating engaging and impactful teacher-student relationships. Their research highlights how strong communication practices contribute to more effective teaching and learning environments. Choi and Lee (2020) further support this by demonstrating that proficient use of digital communication tools can significantly boost student participation and comprehension. This suggests that integrating advanced communication skills into digital literacy training can enhance teaching effectiveness and student outcomes.

The dynamic nature of digital communication tools requires a responsive and adaptive approach to teaching. Koehler and Mishra (2021) stress the necessity for a flexible learning environment that leverages these tools to respond to students' needs effectively. Their work underscores the role of robust communication skills in utilizing digital tools to foster a responsive teaching environment. Anderson and Dexter (2022) [9] extend this by advocating for professional learning communities as platforms for sharing best practices and resources. These communities facilitate the exchange of effective communication strategies among educators, thereby improving overall instructional quality.

Further research sheds light on enhancing teachers' ability to share communication tools and strategies. Mishra and Henriksen (2020) discuss how integrating digital communication tools into pedagogical practices can transform teacher-student interactions and collaborative learning experiences. Their findings highlight the potential of these tools to enhance teaching practices significantly. González-Martínez and Esteve-Mon (2021) explore strategies for improving peer-to-peer communication among teachers, which fosters a supportive professional environment. Such peer interactions contribute to continuous improvement and the development of effective communication practices in education.

1.8. Cyber Security Awareness

Recent research highlights the growing importance of integrating cyber security education into school curricula to address online safety and privacy. Kritzinger and Padayachee (2020) demonstrate that incorporating cyber security concepts into education significantly enhances students' awareness and resilience against digital threats. This proactive approach is crucial, as emphasized by Livingstone, Stoilova, and Kelly (2019), who found that early education on online privacy helps mitigate risks associated with digital interactions. Wang and Tian (2021) further support this view, indicating that consistent cyber security education fosters a culture of vigilance among students, preparing them to manage digital challenges effectively.

Insights into the professional development needs of educators further underscore the importance of cyber security awareness. Ozer (2023) highlights the necessity for continuous professional development to keep teachers informed about current cyber threats. Johnson and Wetzel (2021) emphasize that well-informed teachers are better equipped to protect student data and maintain secure digital classrooms. This ongoing training ensures that educators can effectively address and mitigate potential cyber security issues within their classrooms.

Additionally, research by Smith *et al*. (2022) stresses the importance of integrating cyber security training into professional development programs. This approach not only enhances teachers' ability to recognize and respond to threats but also contributes to a safer digital environment for students. Collectively, these findings advocate for a comprehensive approach to cyber security education, which is crucial for improving both teacher preparedness and overall digital safety in educational settings.

1.9. Teaching Practices

Teaching practices are the cornerstone of effective education, profoundly influencing learners' experiences and outcomes. Recent research highlights the dynamic nature of pedagogy, emphasizing creative strategies that engage diverse learners and foster meaningful learning. For instance, Johnson and Johnson (2023) emphasize the efficacy of collaborative learning environments in developing reasoning and resolution skills. By engaging in dialogue, sharing perspectives, and

building upon each other's ideas, students achieve a deeper understanding and retention of knowledge.

Integrating technology into teaching is another transformative practice that enhances student engagement and facilitates personalized learning experiences. Liu and Wang (2020) highlight how multimedia resources and interactive tools address specific learning styles and needs, enhancing the accessibility and engagement of education. Technology enables educators to deliver information through diverse formats, including videos, simulations, and interactive quizzes, which can help sustain students' interest and motivation. Additionally, formative assessment strategies, as advocated by Black and Wiliam (2019), provide continuous feedback, enabling students to understand their learning progress and areas needing improvement.

Culturally responsive teaching practices are essential for promoting equity and inclusivity in education. Gay (2023) emphasizes the importance of recognizing and addressing students' diverse cultural backgrounds to create a supportive and inclusive learning environment. This involves adapting instructional methods to reflect the cultural diversity of students, validating their experiences, and fostering a sense of belonging. By adopting evidence-based practices and pedagogical innovations, educators can adjust to the changing needs of learners, ensuring that every student, regardless of their background, has the opportunity to succeed and excel in their educational journey.

2. Discussions

The study's results consistently show that Govt. Degree College teachers in the Davanagere District demonstrate a high level of digital literacy skills across various domains. This proficiency enables them to effectively integrate digital tools into their teaching practices, which is crucial for enhancing student engagement and learning outcomes. High mean scores across several tables indicate that teachers are adept at using technology in digital content integration, interactive learning, assessment and feedback, and in their preparation of instructional aid.

Additionally, the analysis highlights the impact of specific teacher characteristics on their teaching practices. Teachers' positions within the educational hierarchy, their participation in digital literacy skills training and seminars, and their attitudes towards digital literacy all significantly influence their ability to integrate digital tools into their teaching. Teachers in higher positions and those who have attended digital literacy training seminars show greater proficiency in using digital tools, which underscores the importance of professional development and supportive institutional structures in enhancing teaching effectiveness.

However, the data also reveal areas for improvement, particularly in the use of collaborative online platforms and digital assessment tools. Despite the overall high proficiency in digital literacy, certain indicators related to collaborative learning and diverse digital assessment methods received relatively lower scores. This suggests a need for further training and support to help teachers fully utilize these tools and improve their effectiveness in fostering student collaboration and providing comprehensive assessments

3. Conclusions

This study concludes that a significant relationship exists between teachers' digital literacy skills and their teaching practices. Teachers proficient with digital tools can teach more effectively and creatively, emphasizing the importance of enhancing teachers' digital skills to improve teaching methods and student engagement.

The study also identified significant differences in teaching practices based on teachers' positions, training and seminars attended on digital literacy skills, and attitudes towards digital literacy. Senior teachers and those in leadership roles utilize digital tools more effectively than newer teachers. Additionally, teachers who have attended more training sessions and seminars on digital skills demonstrate superior teaching practices. Moreover, teachers with a positive attitude towards digital literacy are more effective in using digital tools in their teaching.

4. Recommendations

The following recommendations are proposed based on the study's findings:

i). Policy makers at DepEd should create clear career advancement pathways for teachers, addressing the Teacher I bottleneck by establishing mentoring programs and providing incentives for higher positions and professional development.

ii). DepEd administrators should invest in continuous, targeted professional development programs focusing on digital literacy and technology integration, while offering opportunities for teachers to participate in international training and seminars.

iii). Govt. Degree College teachers in the Davanagere District Supervisors and college Principal should provide up-to-date technological resources and reliable internet access, and organize regular training sessions to support teachers in integrating digital tools into their teaching practices.

iv). Govt. Degree College teachers in the Davanagere District should actively participate in local and international professional development opportunities to enhance digital literacy skills and collaborate with colleagues to share best practices in technology integration.

v). Learners and Future Researchers should explore the long-term impact of digital literacy training on student outcomes and educational quality, considering external factors like infrastructure and administrative support, and including diverse districts and educational settings in their studies.

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