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A Study on the Perceptions of Administrators and Teachers towards Digital Literacy and Technology acceptance in Teaching Learning Process

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Abstract

This study investigates the perceptions of administrators and teachers regarding digital literacy and technology acceptance in the teaching-learning process, with a focus on gender and locality as influencing variables. The research aims to explore the impact of these factors on the digital literacy and technology acceptance of administrators and teachers concerning the use of computers in educational settings. A sample of 290 participants, including 40 administrators and 250 secondary school teachers, was selected using a stratified random sampling technique from 45 secondary schools in the West Godavari, East Godavari, and Krishna districts of Andhra Pradesh. The study employed specialized tools developed to assess digital literacy and technology acceptance, with high-reliability coefficients indicating consistency in the measurements.

The findings reveal significant differences in digital literacy and technology acceptance based on gender and locality. Male administrators scored significantly higher than female administrators and urban administrators outperformed their rural counterparts in both areas. Similarly, male teachers scored higher than female teachers and urban teachers exhibited superior digital literacy and technology acceptance compared to their rural peers. These results suggest that gender and geographic location play a crucial role in the adoption and effective use of technology in education, highlighting the need for targeted interventions to address these disparities. Promoting equal access to digital resources and professional development opportunities is essential to fostering an equitable educational environment for both administrators and teachers.

Key words: Administrators, Teachers, Digital Literacy, Technology Acceptance, Gender, Locality, Technology.

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1. Introduction:

In recent years, the integration of digital literacy and technology in education has transformed teaching and learning processes worldwide. Digital literacy, the capability to effectively and critically use technology to communicate, collaborate, and manage information, has become a key skill for both educators and students. As the demand for digital skills grows in the broader economy, educational institutions are increasingly expected to equip students with these competencies from an early stage (Kong et al., 2014). The adoption of technology in the classroom, however, hinges not only on the availability of digital tools but also on the attitudes, perceptions, and willingness of educators to incorporate these tools effectively.

Teachers and administrators play a critical role in determining the success of technology integration in educational settings. According to Venkatesh and Davis (2000), the Technology Acceptance Model (TAM) suggests that perceived usefulness and perceived ease of use are primary determinants of technology acceptance among users. This model has been applied widely in educational contexts to understand how educators respond to new technologies. Teachers who view technology as enhancing learning outcomes are more likely to integrate it into their instruction. Conversely, those who see technology as complex or intimidating may resist its adoption (Teo, 2011).

Moreover, administrators' support and provision of resources are essential in fostering an environment conducive to technology use. Studies have shown that school leaders who advocate for and invest in technology facilitate a positive climate that encourages teachers to experiment with digital tools and integrate them into their teaching practices (Ertmer & Ottenbreit-Leftwich, 2010). The role of professional development is also paramount, as training programs aimed at improving teachers' digital competencies have a significant impact on their confidence and willingness to use technology in the classroom (Tondeur et al., 2017).

Despite these advancements, disparities in perceptions toward digital literacy and technology acceptance remain. Differences in access to resources, training opportunities, and institutional support can lead to varied experiences and attitudes toward digital tools among teachers and administrators. Understanding these perspectives is essential to developing effective strategies for promoting digital literacy and facilitating a smooth transition to technology-enhanced learning environments.

Digital literacy and technology acceptance are interconnected concepts that significantly impact the teaching-learning process. Together, they create a foundation for modern educational practices by enabling educators and students to utilize digital tools effectively while fostering a positive disposition toward technology integration. Understanding the role and interplay between these two factors is critical for developing strategies that support technology-enhanced learning environments.

2. Role of Digital Literacy in Education

Digital literacy encompasses the skills needed to use digital tools effectively, including the ability to locate, evaluate, and create information across a range of digital platforms. In educational settings, digital literacy enables teachers to effectively deliver content and engage students while also preparing students for a technology-driven world (Ng, 2012). For teachers, digital literacy involves not only knowing how to operate digital devices but also understanding the pedagogical applications of these tools. This includes skills such as designing interactive lessons, evaluating digital resources for credibility, and fostering digital citizenship in students.

For students, digital literacy is foundational for accessing, analyzing, and producing information, skills that are increasingly necessary for academic and professional success. Integrating digital literacy into the curriculum thus helps to develop critical thinking, collaboration, and problem-solving abilities, which are essential competencies in the 21st century (Eshet, 2012). Digitally literate educators are more likely to utilize technology creatively and responsively in their teaching, adapting resources to meet diverse learning needs.

3. Role of Technology Acceptance in Education

Technology acceptance, on the other hand, refers to the willingness of educators and learners to embrace and use technology as part of the educational experience. The Technology Acceptance Model (TAM), proposed by Venkatesh and Davis (2000), explains that perceived usefulness and perceived ease of use are key factors influencing technology acceptance. Educators are more likely to accept technology if they believe it enhances learning outcomes and is easy to use. Similarly, students who see technology as beneficial for their learning and find it manageable are more likely to engage actively with digital tools (Teo, 2011).

Administrators play a crucial role in promoting technology acceptance by fostering a supportive environment, providing adequate resources, and facilitating ongoing professional development opportunities. Research suggests that when teachers feel supported and adequately trained, they are more likely to view technology positively and integrate it effectively into their teaching practices (Ertmer & Ottenbreit-Leftwich, 2010). Without technology acceptance, digital literacy skills may remain underutilized, as educators may be hesitant to incorporate digital tools fully into their pedagogy.

4. Interplay between Digital Literacy and Technology Acceptance

The relationship between digital literacy and technology acceptance is mutually reinforcing. Higher levels of digital literacy generally increase teachers' confidence in using technology, leading to greater acceptance and more frequent use in educational settings. For instance, teachers with strong digital literacy skills are more likely to recognize the benefits of technology for enhancing learning, thus perceiving it as useful, which aligns with TAM's principles (Teo, 2011). Conversely, educators who are more accepting of technology are more inclined to invest time in developing their digital literacy skills, seeing them as valuable to their professional growth and instructional effectiveness.

In this interplay, professional development emerges as a vital factor. Studies have shown that training sessions that improve digital skills while emphasizing the practical applications of technology in the classroom significantly boost both digital literacy and technology acceptance (Tondeur et al., 2017). When educators understand the pedagogical value of technology and feel competent in its use, they are more likely to integrate it into their teaching.

Finally, this interplay shapes students' learning experiences. Teachers who are digitally literate and accepting of technology can design engaging and interactive learning environments, enabling students to acquire digital literacy skills naturally and intuitively. This combination of educator readiness and technology acceptance ultimately facilitates a smoother and more effective transition to technology-enhanced learning.

5. Need and Importance of the Study

The rapid advancement of technology has reshaped the educational landscape, making digital literacy and technology acceptance essential components of modern teaching and learning. In this context, understanding the perceptions of administrators and teachers toward these concepts is critical for implementing successful digital initiatives and creating effective learning environments. This study is needed to bridge the gap between the potential of technology in education and its actual integration in classrooms, addressing factors that impact digital adoption and utilization in schools.

Responding to the Demand for Digital Competencies

As society becomes increasingly digitized, students are expected to enter the workforce equipped with digital competencies and the ability to navigate technology-rich environments (Binkley et al., 2012). This shift places new demands on educational institutions to foster these skills from an early age, and administrators and teachers play a pivotal role in this process. Teachers who are digitally literate and open to technology can enhance student engagement, promote active learning, and improve critical thinking and problem-solving skills. Understanding teacher and administrator attitudes is crucial to identifying barriers and enablers of technology integration, ultimately helping schools fulfill their role in preparing digitally competent students.

Supporting Effective Technology Integration in Education

Effective technology integration requires not only infrastructure but also a willingness among educators to adopt and use digital tools in pedagogically meaningful ways. Research suggests that technology initiatives in schools often face challenges due to limited teacher acceptance and gaps in digital literacy, leading to underutilized resources and missed opportunities for enhancing learning (Ertmer & Ottenbreit-Leftwich, 2010). By examining the perceptions of both administrators and teachers, this study aims to uncover the factors that influence technology acceptance and digital literacy levels among educators. This insight can inform targeted professional development programs that address specific needs, increase teacher confidence, and support meaningful technology integration.

Addressing the Role of Administrative Support

Administrative support is a key determinant of teachers' attitudes toward digital tools, influencing their confidence, resources, and autonomy in implementing technology. Administrators who prioritize and advocate for technology integration can foster a supportive climate that encourages teachers to explore new digital methods (Dexter, 2008). This study highlights the role of administrative perceptions in shaping the culture around technology in schools, providing insights into how leadership practices can either promote or hinder digital literacy efforts. Identifying administrators' attitudes and the potential challenges they face will help policymakers and educational leaders create strategies that align school-level goals with broader digital literacy initiatives.

Contributing to Professional Development and Policy

This study contributes to the growing body of literature on professional development, particularly in digital literacy and technology acceptance. Tailored professional development that meets the specific needs of teachers and administrators can be highly effective in raising technology acceptance and digital literacy levels (Tondeur et al., 2017). Findings from this study will aid in designing training programs that focus not only on developing digital skills but also on fostering positive attitudes toward technology adoption, thus creating a sustainable model for continuous professional growth in technology use. Additionally, insights into administrators' and teachers' perceptions will inform policy decisions, guiding the allocation of resources and the development of supportive frameworks for technology-enhanced learning.

This study is important for addressing the systemic factors that influence the adoption of digital tools in education. By exploring the perceptions of administrators and teachers, the research seeks to uncover practical solutions for enhancing digital literacy, increasing technology acceptance, and ultimately creating a dynamic, technology-enabled learning environment that benefits both educators and students.

6. Literature Review

The adoption of digital literacy and technology in educational settings has been widely studied, revealing various factors that influence educators' and administrators' attitudes, acceptance, and application of technology in the teaching-learning process. The literature underscores the importance of digital skills, administrative support, teacher attitudes, and structured professional development as key elements in effective technology integration.

Digital Literacy as a Foundation for Technology Integration

Ng (2012) highlights digital literacy as a foundational skill for modern educators, suggesting that proficiency with digital tools and critical evaluation skills are essential for technology-enhanced pedagogy. Ng's study emphasizes that teachers with higher digital literacy are more adept at integrating technology creatively, enhancing student engagement, and fostering critical thinking. This study indicates that both technical and pedagogical digital competencies are needed to create meaningful digital learning experiences.

Technology Acceptance Model (TAM) in Education

Venkatesh and Davis (2000) developed the Technology Acceptance Model (TAM), a theoretical framework that has been applied in educational settings to understand technology acceptance among educators. According to TAM, perceived usefulness and perceived ease of use are critical predictors of technology adoption. Teo (2011) applied TAM to assess teachers' attitudes toward educational technology, finding that teachers' perceptions of the utility of technology and their confidence in using it significantly impact their willingness to adopt it. Teo's study highlights the need for user-friendly technology and supportive training environments.

Role of Professional Development in Enhancing Digital Literacy

Ertmer and Ottenbreit-Leftwich (2010) underscore the role of professional development in raising teachers' confidence and competence with digital tools. Their study identifies that ongoing, targeted training helps teachers overcome fears and develop the skills necessary to integrate technology effectively. By focusing on confidence-building and skill development, professional development programs can foster higher levels of technology acceptance.

The Influence of Administrative Support on Technology Integration

Dexter (2008) points out that administrators' attitudes toward technology influence how digital tools are implemented at the school level. Administrators who actively advocate for and support technology use can create a positive environment that encourages teachers to experiment with digital tools. Dexter's research suggests that schools with strong leadership in technology integration exhibit higher rates of teacher engagement with digital resources.

Teacher Beliefs and Technology Integration

Tondeur et al. (2017) conducted a systematic review exploring the relationship between teachers' pedagogical beliefs and their use of technology. Their findings indicate that teachers with constructivist beliefs, who view students as active learners, are more likely to incorporate technology into their teaching. Conversely, teachers with more traditional beliefs tend to resist technology adoption. This study highlights the importance of aligning digital tools with pedagogical beliefs to promote technology acceptance.

Impact of Digital Literacy on Student Learning Outcomes

Eshet (2012) examined the impact of digital literacy on students' ability to access and analyze information. The study suggests that digitally literate teachers are more likely to implement teaching methods that promote critical thinking and active learning, ultimately benefiting student outcomes. Eshet's findings reinforce the need for educators to possess strong digital literacy skills, as these directly influence instructional quality.

Barriers to Technology Adoption in Schools

Inan and Lowther (2010) identify common barriers to technology adoption, including limited resources, lack of professional development, and resistance to change. Their study finds that teachers often cite inadequate access to devices and insufficient training as obstacles to integrating digital tools. Addressing these barriers, Inan and Lowther argue, is essential for achieving widespread technology adoption.

Teachers' Attitudes and Technology Use

Wang et al. (2014) studied the relationship between teachers' attitudes toward technology and their actual technology use in classrooms. The research finds that positive attitudes towards technology are closely correlated with the frequency and quality of technology use. Teachers who view technology as beneficial are more likely to engage students with digital tools, while those with negative attitudes tend to minimize technology use.

Role of Digital Literacy in Educational Equity

Schleicher (2018) highlights the role of digital literacy in addressing educational inequalities. The study argues that digital literacy equips students with the skills needed for future careers, and teachers with high digital competence are more likely to create equitable learning experiences. Schleicher suggests that fostering digital literacy among educators can reduce disparities by making digital resources more accessible to diverse student populations.

Influence of Technology Infrastructure on Digital Literacy

Lawless and Pellegrino (2007) investigated how the availability of technology infrastructure impacts teachers' digital literacy and technology adoption. Their study suggests that schools with advanced technology infrastructure tend to have higher rates of technology integration, as teachers are more willing to experiment with digital tools when resources are readily available. Lawless and Pellegrino advocate for investments in infrastructure as a means of promoting digital literacy and technology acceptance.

These studies collectively emphasize the importance of digital literacy, technology acceptance, and the interplay of supportive factors in fostering technology integration in education. They highlight that a combination of digital competencies, professional development, supportive administration, and positive teacher attitudes influences technology adoption. Effective technology integration thus requires a systemic approach that addresses educator needs, aligns with pedagogical goals, and provides resources and training to enhance digital literacy.

7. Objectives

1. To find out the influence of the following variables on the Digital Literacy and Technology Acceptance towards Use of Computers in Teaching and Learning process of Administrators i.e.
   a) Gender : Male/ Female
   b) Locality : Rural / Urban

2. To find out the influence of the following variables on the Digital Literacy and Technology Acceptance towards Use of Computers in Teaching and Learning process of Teachers i.e.
   c) Gender : Male/ Female

d) Locality : Rural / Urban

8. Hypotheses:

1. There would be no significant difference between Male and Female Administrators in their Digital Literacy.
2. There would be no significant difference between Male and Female Administrators in their Teachnology Acceptance.
3. There would be no significant difference between Urban and Rural Administrators in their Digital Literacy.
4. There would be no significant difference between Urban and Rural Administrators in their Teachnology Acceptance.
5. There would be no significant difference between Male and Female Teachers in their Digital Literacy.
6. There would be no significant difference between Male and Female Teachers in their Teachnology Acceptance.
7. There would be no significant difference between Urban and Rural Teachers in their Digital Literacy.
8. There would be no significant difference between Urban and Rural Teachers in their Teachnology Acceptance.

9. Methodology:

The investigator used a survey method to explore the effects of digital literacy and technology acceptance on the perceptions of administrators and teachers regarding computer application in the teaching-learning process. A random sample of 290 participants was selected for this study, comprising:

- 40 Administrators
- 250 Secondary School Teachers

The investigator employed a stratified random sampling technique to ensure representation from various subgroups within the population. The sample was drawn from 45 secondary schools, 15 of which were from the districts of West Godavari, East Godavari, and Krishna in Andhra Pradesh.

10. Tools of the Study:

To gather data on digital literacy and technology acceptance in the teaching-learning process, the investigator developed specialized tools targeted at administrators and teachers. These tools were carefully crafted to suit a diverse age range of 13 to 55 years, ensuring they were relevant to a broad audience. During the development process, efforts were made to establish the reliability and validity of these instruments, enabling them to measure the intended constructs with accuracy consistently. This rigorous testing ensured that the tools captured reliable and meaningful data across various educational roles.

Reliability coefficients for each scale indicate a high level of consistency. For the Digital Literacy Scale, Cronbach's Alpha was 0.983, demonstrating excellent internal consistency, with test-retest and split-half reliability values at 0.89 and 0.84, respectively. Similarly, the Technology Acceptance Scale showed strong reliability, with a Cronbach's Alpha of 0.82 and test-retest and split-half reliability values of 0.80 and 0.79. These results confirm that the instruments provided stable and trustworthy measurements, allowing the investigator to collect robust data on the digital literacy and technology acceptance levels among the study participants.

11. Data analysis

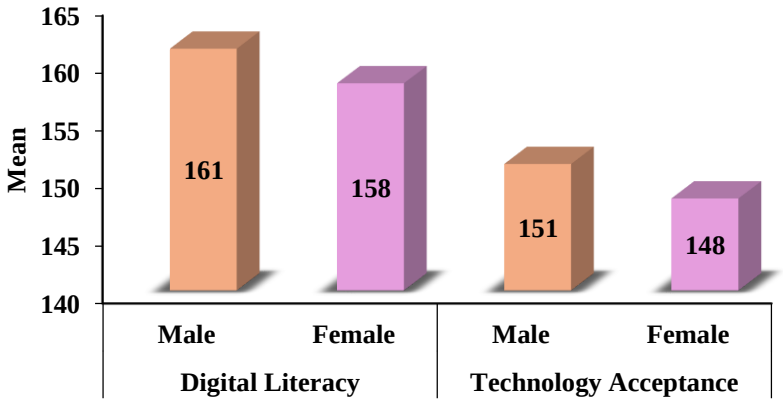
Hypotheses:

1. There would be no significant difference between Male and Female Administrators in their Digital Literacy.
2. There would be no significant difference between Male and Female Administrators in their Teachnology Acceptance.

Table 1. Mean-SD-and 't' value of Male and Female Administrators in their Digital Literacy and Technology Acceptance

	Variables	Gender	N	Mean	Std. Deviation	SED	t value	p- value
Administrators	Digital Literacy	Male	24	161	1.16	0.3966	6.985*	0.00
		Female	16	158	1.32			
	Technology Acceptance	Male	24	151	1.55	0.4345	8.102*	0.00
		Female	16	148	0.92			

Note: * Significant at 0.05 level.



Graph 1. Mean difference of Male and Female Administrators in their Digital Literacy and Technology Acceptance

Interpretation

An independent samples t-test was conducted to compare digital literacy and technology acceptance between male and female administrators. The results are presented in Table 1.

For digital literacy, the analysis revealed a significant difference between male (M = 161, SD = 1.16) and female administrators (M = 158, SD = 1.32), $t(38) = 6.99$, $p < .05$. This indicates that male administrators scored significantly higher in digital literacy than their female counterparts.

Similarly, for technology acceptance, a significant difference was found between male (M = 151, SD = 1.55) and female administrators (M = 148, SD = 0.92), $t(38) = 8.10$, $p < .05$. These findings suggest that male administrators also scored significantly higher in technology acceptance than female administrators.

Finding:

Male administrators scored significantly higher than female administrators in both digital literacy and technology acceptance.

Discussion:

The findings of this study reveal a significant gender difference in digital literacy and technology acceptance among administrators, with male administrators scoring higher than their female counterparts. This result aligns with research suggesting that gender disparities can exist in digital competency and technology-related attitudes, often influenced by socialization patterns and access to technology (Cooper, 2006). For instance, Cooper notes that men historically report higher confidence in using digital tools, which can impact both perceived competence and actual technology acceptance in professional settings. These disparities can also be attributed to differences in exposure and training opportunities, as prior studies have indicated that targeted professional development in digital skills is essential for fostering equitable technology use across genders (Vekiri & Chronaki, 2008). Thus, enhancing digital literacy and confidence through professional support can be crucial in narrowing this gap.

Furthermore, the findings underscore the need for tailored interventions that support technology integration and digital skill development, particularly for female administrators who may benefit from additional training resources. Prior research emphasizes that positive attitudes towards technology are strongly linked to effective technology adoption, which can be fostered through structured, hands-on learning opportunities that build both skill and confidence (Teo, 2011). Addressing these differences is particularly important in educational administration, where technology plays a vital role in supporting teaching, learning, and organizational efficiency. By promoting inclusive, supportive professional development, educational institutions can work towards creating a balanced, digitally competent leadership capable of championing technology integration across schools.

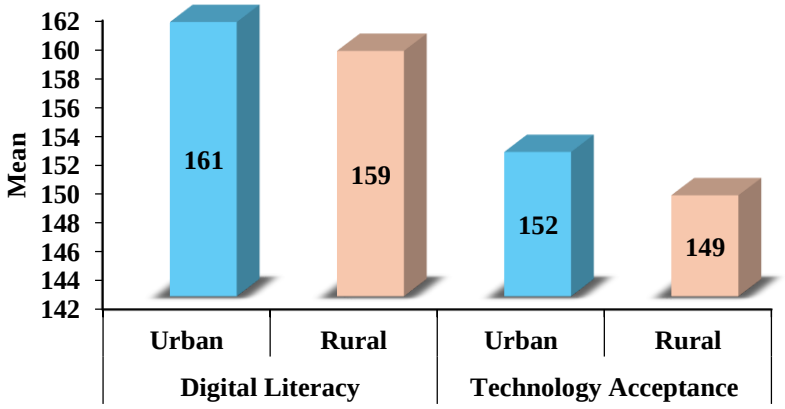
Hypotheses:

3. There would be no significant difference between Urban and Rural Administrators in their Digital Literacy.
4. There would be no significant difference between Urban and Rural Administrators in their Teachnology Acceptance.

Table 2. Mean-SD- and 't' value of Urban and Rural Administrators in their Digital Literacy and Technology Acceptance

	Variable	Locality	N	Mean	Std. Deviation	SED	t- value	p-value
Administrators	Digital Literacy	Urban	16	161	1.15	0.4185	6.322*	0.00
		Rural	24	159	1.38			
	Technology Acceptance	Urban	16	152	1.42	0.4255	8.372*	0.00
		Rural	24	149	1.24			

Note: * Significant at 0.05 level.



Graph 2. Mean difference of Urban and Rural Administrators in their Digital Literacy and Technology Acceptance

Interpretation

An independent samples t-test was conducted to compare digital literacy and technology acceptance between urban and rural administrators. The results are presented in Table 2.

For digital literacy, the analysis revealed a significant difference between urban (M = 161, SD = 1.15) and rural administrators (M = 159, SD = 1.38), $t(38) = 6.32$, $p < .05$. This indicates that urban administrators scored significantly higher in digital literacy than rural administrators.

Similarly, for technology acceptance, a significant difference was found between urban (M = 152, SD = 1.42) and rural administrators (M = 149, SD = 1.24), $t(38) = 8.37$, $p < .05$. These findings suggest that urban administrators also scored significantly higher in technology acceptance than rural administrators.

Finding:

Urban administrators scored significantly higher than rural administrators in both digital literacy and technology acceptance.

Discussion:

The findings of this study indicate a significant difference in digital literacy and technology acceptance between urban and rural administrators, with urban administrators demonstrating higher scores in both areas. This result is consistent with previous research suggesting that access to resources, infrastructure, and opportunities for professional development often vary between urban and rural settings (Bakia et al., 2012). Urban areas typically have better access to advanced technological tools, faster internet connections, and more frequent training opportunities, which can enhance digital competencies and foster a positive attitude towards technology. In contrast, rural administrators may face challenges such as limited access to technology and fewer professional development programs, contributing to their lower scores in both digital literacy and technology acceptance (Ravitz et al., 2012).

These findings highlight the need for targeted interventions aimed at bridging the digital divide between urban and rural educational leaders. Providing rural administrators with increased access to technology, professional development opportunities, and digital resources can help close the gap in both digital literacy and technology adoption. As studies have shown, when administrators are well-equipped and confident in their technology skills, they are more likely to support and integrate technology into their institutions (Ertmer & Ottenbreit-Leftwich, 2010). Therefore, addressing these disparities is crucial for ensuring that all administrators, regardless of their location, are able to lead effective, technology-driven educational environments.

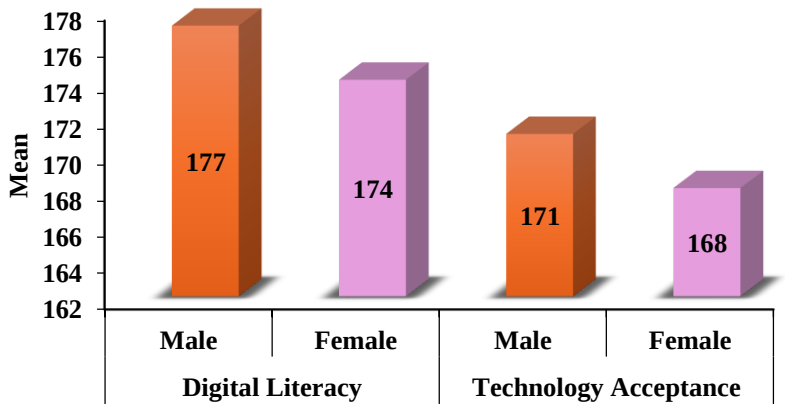
Hypotheses:

5. There would be no significant difference between Male and Female Teachers in their Digital Literacy.
6. There would be no significant difference between Male and Female Teachers in their Teachnology Acceptance.

Table 3.Mean-SD-and 't' value of Male and Female Teachers in their Digital Literacy and Technology Acceptance

	Variables	Gender	N	Mean	Std. Deviation	SED	t-value	p-value
Teachers	Digital Literacy	Male	109	177	1.05747	0.1634	20.368*	0.00
		Female	141	174	1.43091			
	Technology Acceptance	Male	109	171	1.18189	0.1598	19.612*	0.00
		Female	141	168	1.30512			

Note: * Significant at 0.05 level.



Graph 3. Mean difference of Male and Female Teachers in their Digital Literacy and Technology Acceptance

Interpretation

Independent samples t-tests were conducted to compare digital literacy and technology acceptance between male and female teachers. The results are presented in Table 3.

For digital literacy, the analysis revealed a significant difference between male (M = 177, SD = 1.06) and female teachers (M = 174, SD = 1.43), $t(248) = 20.37$, $p < .05$. This indicates that male teachers scored significantly higher in digital literacy than female teachers.

Similarly, for technology acceptance, a significant difference was found between male (M = 171, SD = 1.18) and female teachers (M = 168, SD = 1.31), $t(248) = 19.61$, $p < .05$. These findings suggest that male teachers also scored significantly higher in technology acceptance than female teachers.

Finding:

Male teachers scored significantly higher than female teachers in both digital literacy and technology acceptance.

Discussion:

The findings of this study reveal a significant gender difference in both digital literacy and technology acceptance among teachers, with male teachers outperforming female teachers in both areas. This result aligns with previous research suggesting that

men often exhibit higher levels of confidence in using technology and digital tools compared to women (Cooper, 2006). Factors such as societal expectations, early exposure to technology, and access to digital resources may contribute to this disparity. Male teachers may have had more opportunities to develop digital skills, which could influence their higher levels of comfort and acceptance with technology in the classroom. Additionally, gender-related differences in self-efficacy and the perceived usefulness of technology may play a role in these outcomes (Teo, 2011).

These findings highlight the importance of addressing gender disparities in digital literacy and technology acceptance through targeted interventions and professional development. Providing women teachers with equal opportunities for digital training and fostering an environment where they feel confident in using technology can help narrow this gap. Studies have shown that building teachers' confidence in technology use is critical for successful technology integration in classrooms (Ertmer & Ottenbreit-Leftwich, 2010). By promoting inclusive and gender-neutral approaches to technology training, educational institutions can ensure that both male and female teachers are equally equipped to leverage technology in enhancing teaching and learning.

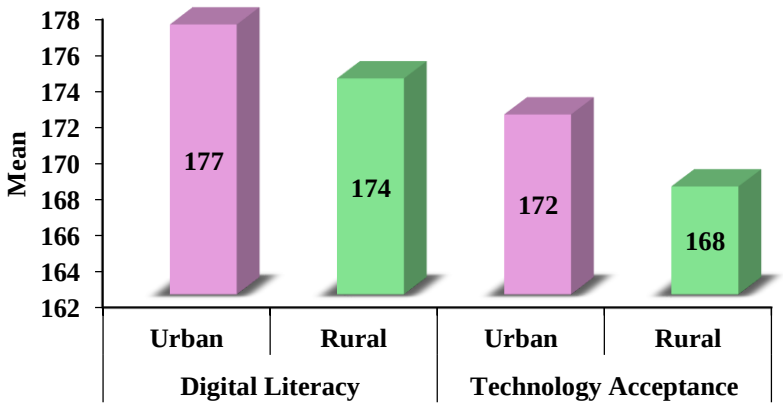
Hypotheses:

7. There would be no significant difference between Urban and Rural Teachers in their Digital Literacy.
8. There would be no significant difference between Urban and Rural Teachers in their Teachnology Acceptance.

Table 4. Mean-SD- and 't' value of Urban and Rural Teachers in their Digital Literacy and Technology Acceptance

	Variables	Locality	N	Mean	Std. Deviation	SED	t-value	p-value
Teachers	Digital Literacy	Urban	99	177	1.053	0.1730	18.977*	0.00
		Rural	151	174	1.49			
	Technology Acceptance	Urban	99	172	1.12	0.1612	19.764*	0.00
		Rural	151	168	1.32			

Note: * Significant at 0.05 level.



Graph 4. Mean difference of Urban and Rural Teachers in their Digital Literacy and Technology Acceptance

Interpretation

Independent samples t-tests were conducted to compare digital literacy and technology acceptance between urban and rural teachers. The results are presented in Table 4.

For digital literacy, the analysis revealed a significant difference between urban (M = 177, SD = 1.05) and rural teachers (M = 174, SD = 1.49), $t(248) = 18.98$, $p < .05$. This indicates that urban teachers scored significantly higher in digital literacy than rural teachers.

Similarly, for technology acceptance, a significant difference was found between urban (M = 172, SD = 1.12) and rural teachers (M = 168, SD = 1.32), $t(248) = 19.76$, $p < .05$. These findings suggest that urban teachers also scored significantly higher in technology acceptance than rural teachers.

Finding:

Urban teachers scored significantly higher than rural teachers in both digital literacy and technology acceptance.

Discussion:

The findings of this study reveal a significant difference in digital literacy and technology acceptance between urban and rural teachers, with urban teachers outperforming their rural counterparts in both areas. This disparity can be attributed to several factors, including greater access to technological infrastructure and resources in urban areas, which enhances digital literacy and fosters a more positive attitude towards technology. Previous research has shown that urban schools generally have better access to modern technologies, faster internet, and more frequent professional development opportunities, which can contribute to higher levels of digital competency and technology acceptance among educators (Bakia et al., 2012). In contrast, rural teachers often face challenges such as limited access to digital resources and fewer training programs, which can hinder their development in these areas (Ravitz et al., 2012).

These findings underscore the need for targeted interventions to bridge the digital divide between urban and rural educators. Ensuring equal access to digital tools and resources, as well as providing professional development programs focused on enhancing digital literacy and technology acceptance, is crucial for improving the technological capabilities of rural teachers. Research suggests that providing rural teachers with ongoing training, mentorship, and access to technology can help reduce the gap and increase their confidence in integrating technology into their teaching practices (Teo, 2011). By fostering a more equitable distribution of digital resources and support, education systems can empower all teachers, regardless of their geographic location, to effectively use technology to enhance the teaching and learning experience.

12. Educational Implications:

1. **Gender Differences Among Administrators and Teachers**: The results suggest the need for gender-sensitive professional development programs to support female administrators and teachers in enhancing their digital literacy and technology acceptance.
2. **Urban vs. Rural Differences**: The significant urban-rural gap in digital literacy and technology acceptance calls for targeted investments in rural education, including improved access to technology and professional development opportunities for rural educators.

13. Conclusion:

This study highlights significant differences in digital literacy and technology acceptance among administrators and teachers based on gender and geographic location. Male administrators and teachers, as well as urban educators, scored higher in both digital literacy and technology acceptance compared to their female and rural counterparts. These findings underscore the impact of gender and location on the ability to adapt and effectively use technology in educational settings. The disparities suggest that male educators, particularly in urban areas, are better equipped to integrate technology into their professional practices. In contrast, female and rural educators may face challenges such as limited access to resources, training, or support.

The study emphasizes the need for targeted interventions to bridge these gaps, including gender-sensitive professional development programs and initiatives to improve technological infrastructure in rural areas. By addressing these disparities, educational institutions can create a more equitable environment where all educators, regardless of gender or location, have equal opportunities to develop the skills necessary for successful technology integration. Ultimately, fostering a digitally literate and technology-accepting teaching workforce is crucial for enhancing educational outcomes and ensuring that technology plays a meaningful role in improving the quality of teaching and learning.

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