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Awareness of Digital Literacy Among B.Ed. Pupil-teachers of Patna University

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ABSTRACT

Digital literacy is a vital competency for educators in today's technology-driven world. This study examines awareness of digital literacy among B.Ed. pupil-teachers at Patna University. It explores access to digital devices, proficiency in ICT applications, and the integration of technology in teacher education. The findings indicate that pupil-teachers demonstrate a high level of proficiency in using digital learning resources. However, significant gaps remain in fundamental computer skills, the application of ICT tools, and awareness of cybersecurity practices. Major barriers identified include insufficient resources, lack of adequate training, and limited institutional support. A gender-wise analysis of digital skills indicates no significant difference between female (M = 14.51, SD = 2.57) and male (M = 14.38, SD = 4.63) students (t = 0.18, df = 98), suggesting gender-neutral digital competence. Greater variability among males points to inconsistent skill levels, while females show more uniformity. The study highlights the need for structured ICT training, improved digital infrastructure, and curriculum-wide integration of technology. Inclusive digital literacy initiatives are essential to prepare future educators for technology-enhanced classrooms.

Keywords: Digital literacy, ICT skills, teacher education, B.Ed. pupil-teachers

Introduction:

Digital literacy is fundamental in today's information-driven society, extending beyond basic reading and writing to encompass skills in language, numeracy, digital media, and technology use. It includes the ability to retrieve, process, and share information, engage in social networks, and develop computing proficiency—key competencies for employability and lifelong learning. The concept of digital literacy overlaps with related skill sets such as ICT literacy, which involves navigating digital services, and technological literacy, which includes both user and technical computing skills. For educators, digital proficiency has evolved beyond word processing and spreadsheets to include cloud storage, social media, web and image editing, multimedia creation, and virtual collaboration. The 'flipped classroom' model exemplifies this shift toward interactive, student-centered learning, where digital skills are essential.

The UK's Computing in the National Curriculum guide underscores the need for continuous professional development in digital literacy. Social media and emerging technologies offer innovative ways to engage students, yet many educators remain underprepared. Research by Thappa and Baliya (2021) highlights gaps in integrating technology, pedagogy, and content among teacher trainees. Given these challenges, teacher education programs must prioritize digital skills training to equip future educators for the evolving educational landscape. This study examines B.Ed. students' awareness of digital literacy, the challenges they face, and strategies to enhance digital competency in teacher training.

Review of Related Literature:

Recent research highlights the importance of digital literacy in preparing future educators to integrate technology into teaching. As digital platforms become essential in education, fostering digital competence among B.Ed. students is crucial for innovative teaching and student engagement. Various studies have examined digital literacy and educational technology in teacher education and related fields.

Gupta and Awasthi (2024) found that most B.Ed. trainees in Uttar Pradesh had moderate digital competence, influenced by prior digital exposure. Similarly, Mullick and Sinha (2024) observed that while

Social Science B.Ed. students were proficient in MS Word, PowerPoint, and Excel, male trainees demonstrated higher ICT skills. Urban students also outperformed their rural counterparts. Chithra et al. (2018) assessed digital literacy in Kollam District, noting familiarity with e-journals, e-books, and email but highlighting the need for better online information retrieval skills.

Studies on educational technology awareness reveal significant disparities. Kholiya (2024) found that urban B.Ed. students were more aware of educational technology than rural students, though gender differences were minimal. Postgraduate students had higher awareness than undergraduates. Devim (2016) found no significant gender differences in ICT literacy among B.Ed. trainees, though urban students exhibited higher proficiency. Beyond teacher education, digital literacy research in higher education emphasizes competency development. Correia et al. (2023) argued that digital competence should focus on information searching, sharing, and digital engagement rather than tool-based learning. Despite the growing emphasis on digital literacy, challenges remain. Rusydiyah et al. (2020) found that while Indonesian teacher candidates valued digital literacy, barriers such as internet access and computational skills persisted.

The reviewed studies highlight the increasing importance of digital literacy in teacher education and higher education. While digital competence is improving, disparities based on gender, urban-rural divides, and prior exposure persist. Future research should focus on bridging these gaps and enhancing digital literacy training in educational settings.

Statement Of The Problem:

The research problem addressed in this study is titled " Awareness of Digital Literacy Among B.Ed. Pupil-teachers of Patna University."

Research Questions:

I. Do digital skills among B.Ed. pupil-teachers vary based on gender?

II. How do they use digital devices and applications for teaching learning?

III. What are the various challenges faced by pupil-teachers while using digital devices and applications?

Objectives of the Study:

1. To examine the digital skills among B.Ed. pupil-teachers based on gender.
2. To study the process of using digital devices and apps for teaching learning by B.Ed. pupil-teachers.
3. To identify the challenges faced by the B.Ed. pupil-teachers in using digital devices.

Hypothesis of the Study:

The hypothesis corresponding to objective (i) is:

H0: There is no significant difference in Digital Skills among B.Ed. pupil-teachers based on gender.

Method Of Study:

This descriptive study examines digital literacy awareness and usage among B.Ed. pupil-teachers at Patna University, which comprises Patna Training College, the Department of Education at Patna Women's College, and Women's Training College.

A structured questionnaire was used to collect data from 100 randomly selected pupil-teachers (55 from Women's Training College, 45 from Patna Training College). The questionnaire, developed by Mohalik (R.), included 27 items across five dimensions: ICT access, competency, awareness, integration in teaching, and barriers. Data were collected over two weeks, with prior institutional approval, ensuring independent and authentic responses. Analysis was conducted using Microsoft Excel, applying descriptive statistics (frequencies, percentages, means, standard deviations) and t-tests for interpretation.

Data Analysis and Interpretation:

This study examines the digital literacy awareness of B.Ed. pupil-teachers through survey data, assessing their ability to utilize digital resources, navigate online databases, and access electronic materials. The collected data were analysed in alignment with the study's objectives using frequency, percentage, mean, standard deviation, and t-test. A comprehensive analysis and interpretation of the findings are presented in the subsequent sections.

Skills of Using Digital Devices;

B.Ed. pupil-teachers' proficiency with digital devices is vital for engaging with digital resources and integrating technology into teaching. Assessing their skills offers insight into readiness for tech-enhanced education. Table 1 displays data on respondents' digital competencies, reflecting their preparedness for future pedagogical applications.

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TABLE- 1
Skills of Using Digital Devices

Sl, No.	Items	Frequency	Yes Percentage
1.	Do you understand the basic functions of computer hardware components?	91	91
2.	Do you have a personal homepage or a personal portfolio on the web?	16	16
3.	Do you use keyboard shortcuts?	87	87
4.	Do you use the computer for learning purposes?	91	91
5.	Do you find it easy to learn something by reading it on the computer screen?	70	70
6.	Do you find it easy to learn something by watching it on the computer screen?	88	88
7.	Do you use social networking services?	86	86
8.	Do you have any online friend you have never met in person?	46	46
9.	Do you feel competent in using digital learning resources?	78	78
10.	Do you have mobile applications you use for learning purposes?	100	100

Table 1 highlights pupil-teachers' digital competencies. Most respondents reported understanding basic computer functions (91%) and using computers for learning (91%). High proficiency was also observed in using keyboard shortcuts (87%) and social networking services (86%). While 70% learned through reading on screens, 88% preferred video-based learning. Notably, 78% felt confident using digital learning resources, and all participants (100%) used mobile applications for educational purposes. However, fewer respondents maintained a personal homepage or portfolio (16%), and 46% had online-only social connections.

These findings highlight that most pupil-teachers are proficient in using digital devices, but some gaps remain, particularly in maintaining personal online portfolios and full competency in digital learning resources.

Skills of Using Computers:

Computer proficiency is crucial for digital literacy in teacher education, enabling effective use of modern educational tools. Table 2 highlights the computer-related skills of B.Ed. pupil-teachers, providing insights into their ability to navigate, utilize, and manipulate digital resources for enhanced teaching practices.

TABLE- 2
Skills of Using Computers

Sl, no	.Items	Yes Frequency	Percentage
1.	Can you change computer screen brightness and contrast?	92	92
2.	Can you minimize,maximize and move windows on the computer screen	95	95
3.	Can you use a 'search' command to locate a file?	88	88
4.	Can you scan disks for viruses?	49	49
5.	Can you write files onto a CD, a DVD or a USB drive?	54	54
6.	Can you create and update web pages?	31	31
7.	Can you take and edit digital photos?	75	75
8.	Can you record and edit digital sounds?	56	56
9.	Can you record and edit digital videos?	61	61
10.	Can you download and use apps on digital devices?	92	92

Table 2 outlines pupil-teachers' competency in computer usage. Findings indicate that 92% adjust screen brightness and contrast, while 95% can minimize, maximize, and move windows on a screen. Additionally, 88% use the search function to find files, and 49% scan disks for viruses. About 54% of respondents can write files to external storage devices. Furthermore, 31% create and update web pages, 75% take and edit digital photos, 56% record and edit digital sounds, and 61% record and edit digital videos. Lastly, 92% download and use apps on digital devices.

It can be concluded that most pupil-teachers are comfortable working with computers. However, 51% lack knowledge about scanning disks for viruses, 69% do not know how to create web pages, and 41.5% are not skilled in editing digital sounds and videos.

Uses of ICT for Teaching and Learning:

Integrating ICT in education enriches learning by enabling resource access, collaboration, and enhanced engagement. Table 3 presents data on B.Ed. pupil-teachers' academic use of ICT tools such as email, WhatsApp, online courses, and digital teaching materials, reflecting their adaptation to technology-supported teaching and learning environments.

TABLE- 3

Uses of ICT for Teaching and Learning

Sl, no.	Items	Frequency	Yes Percentage
1.	Do you have a common email-id of your class?	46	46
2.	Do you have group WhatsApp for your class?	100	100
3.	Are you regularly using that group for discussion related to teaching or any academic work?	86	86
4.	Are you using a common email-id /Group with your batch mates and teachers?	55	55
5.	Have you shared any study materials with your class on that group email/ WhatsApp?	92	92
6.	Have you ever created any teaching material digitally? (Audio/Video/ Images/Documentary movie)	70	70
7.	Have you done any online course?	64	64
8.	Have you attended any seminar online?	56	56

Table 3 highlights ICT usage in teaching and learning. Findings show that 100% of pupil-teachers have a class WhatsApp group, with 86% using it regularly for academic discussions. Additionally, 92% have shared study materials, 70% have created digital teaching materials, 64% have completed an online course, and 56% have attended an online seminar.

Barriers to Using Digital Technology for Teaching and Learning:

Barriers such as limited resources, insufficient skills, and inadequate support can impede the effective integration of digital technology in teaching. Table 4 presents the challenges faced by B.Ed. pupil-teachers in adopting digital tools, highlighting obstacles to implementing technology-enhanced pedagogical practices in teacher education.

Table- 4

Barriers for Using Digital Technology for Teaching Learning

Sl, no.	Barriers	Yes	
		Frequency	Percentage
1.	Insufficient Time	45	45
2.	Lack of skills	69	69
3.	Lack of Resource at Institute	80	80
4.	Lack of Interest	40	40
5.	Problem in internet Access	61	61
6.	Lack of Technical support	83	83
7.	Lack of Pedagogical support	66	66
8.	Pressure to prepare for examination	55	55

Table 4 Identifies barriers to ICT integration. Findings reveal that 45% cite insufficient time, 69% lack necessary skills, and 80% report inadequate resources at the institute as primary challenges. Additionally, 40% express a lack of interest in ICT usage.

These findings highlight the need for structured training programs, institutional resource allocation, and motivational strategies to enhance digital competency among pupil-teachers.

Hypothesis Testing: Gender and Digital Skills

Null Hypothesis (H0):

There is no significant difference in digital skills among B.Ed. students based on gender.

TABLE- 5

Gender-wise Comparison of Digital Skills Among B.Ed. Students

Variable	Gender	No. of participants	Mean	Standard Deviation	t-Value	Degree of Freedom
Digital skills	Female	55	14.51	2.57	0.18	98
	Male	45	14.38	4.63		

Table 5 compares digital skills between male and female B.Ed. students. The mean score for females (M = 14.51, SD = 2.57) is slightly higher than males (M = 14.38, SD = 4.63), but the t-test (t = 0.18, df = 98) shows no statistically significant difference. The higher standard deviation among males suggests greater variability, while females exhibit more consistency. Since the difference is not significant, the null hypothesis is not rejected. Gender does not influence digital skills, reinforcing the need for inclusive digital literacy programs for all students.

Findings And Discussion of the Study:

This study provides a comprehensive analysis of the digital competence, ICT skills, and technological awareness of B.Ed. pupil-teachers. The findings are discussed in relation to existing literature, highlighting key patterns, trends, and implications for teacher education.

Skills in Using Digital Devices:

While all pupil-teachers use digital learning resources, 9% struggle with basic computer functions, and 22% lack confidence in digital tools. Mullick and Sinha (2024) similarly reported lower digital competence among B.Ed. trainees, particularly female students. Addressing this gap through digital literacy integration in curricula is crucial.

Computer Skills:

Difficulties were observed in tasks such as adjusting screen brightness (9%), searching files (12%), scanning for viruses (51%), and using external storage (46%). However, proficiency was noted in web page creation (31%), digital photo editing (75%), and video recording (56%). Consistent with Chithra et al. (2018), these results highlight the need for core computer literacy training.

ICT Use in Teaching and Learning:

All pupil-teachers use WhatsApp for academic purposes, yet only 46% use shared email IDs. Additionally, 30% have never created digital teaching materials, and 44% have not attended online seminars. Devim (2016) reported comparable findings, underscoring the need for increased digital content creation and online learning engagement.

Barriers to Digital Technology Use:

Key barriers include insufficient time (45%), lack of skills (69%), inadequate resources (80%), and lack of technical support (83%). These findings align with Kholiya (2024), who reported greater difficulties among rural and self-financed college students. Addressing these barriers through institutional support, professional development, and improved infrastructure is essential.

Hypothesis Testing:

No significant gender differences were found in digital skills (t-value = 0.18, $p > 0.05$), consistent with Gupta and Awasthi (2024), indicating that access

and exposure are more influential factors than gender in digital competence development.

The study highlights moderate digital competence among B.Ed. pupil-teachers, with strengths in mobile learning and social networking but gaps in computer literacy, ICT applications, and cybersecurity awareness. Structured digital literacy curricula focusing on practical applications, online safety, and ICT integration in pedagogy can better prepare future educators for technology-driven classrooms. Addressing these gaps through targeted training, resource allocation, and institutional support is imperative.

Conclusion:

This study provides key insights into the digital infrastructure, services, and perceptions of B.Ed. pupil-teachers at Patna University. While institutions are making efforts to support digital learning, challenges remain in enhancing digital literacy programs. However, overall awareness and engagement with digital tools are positive, highlighting the need for continuous improvements in ICT initiatives to align with evolving educational demands.

The integration of ICT in teacher education is strongly endorsed by national policies, including the NCTE Regulation (2014) and government initiatives such as Digital India, e-Pathshala, NROER, and SWAYAM. The study confirms that most teacher training colleges are equipped with digital devices and that pupil-teachers actively use smartphones for learning. Additionally, no significant gender-based differences in digital skills were found.

To enhance digital literacy, teacher education institutions should encourage ICT use in lesson planning, instructional material development, and classroom teaching. Digital tools should also be integrated into administrative, internship, and assessment processes. Incorporating mobile technology and learning applications in teacher training will ensure future educators are well-equipped to integrate technology effectively in their classrooms.

References:

1. Chithra, L., Rajan, J. S., & Devi, B. M. (2018). Digital Literacy Among B.Ed. Students in Kollam District. International Journal of Information Movement, 2(12), 12–20.
2. Correia, J. D., et al. (2023). Literacy(ies) and Skills in Times of Digital Education: Exploring Communication and Interaction in Digitally Mediated Learning Worlds. International Conference on Active Learning in Engineering Education, 74–82.
3. Deivam, M. (2016). Computer Literacy Among B.Ed. Teacher Trainees: An Exploratory Study. International Journal of Academic Research and Development, 1(5), 13–16.
4. Department for Education. (2013). National Curriculum in England: Computing Programmes of Study. GOV.UK.
5. Gupta, S., & Awasthi, D. (2024). Digital Competence of Male and Female B.Ed. Trainees in College of Lakhimpur Kheri, Uttar Pradesh: A Comparative Study. National Development, 101.
6. Kholiya, J. L. (2024). Educational technology awareness among B.Ed. students. International Journal of Multidisciplinary Educational Research, 13(10[3]).
7. Mullick, S., & Sinha, S. (2024). Information and communication technology (ICT) skill usage among B.Ed. students. The Social Science Review: A Multidisciplinary Journal, 2(3), 56-64.
8. Rusydiyah, E. F., Purwati, E., & Prabowo, A. (2020). How to Use Digital Literacy as a Learning Resource for Teacher Candidates in Indonesia. Cakrawala Pendidikan, 39(2), 305–318.
9. Thappa, S. R., & Baliya, J. N. (2021). Exploring Awareness for Technological Pedagogical and Content Knowledge (TPAC) in Pre-Service Teacher Education Programme. MIER Journal of Educational Studies Trends and Practices, 11(1), 1–14.