



Media Competency Among Pre-Service Teachers: Influence Of Background, Academic Stream, And Teaching Experience

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Abstract:

In contemporary education, teachers are expected to function not only as subject experts but also as competent users of media and digital technologies. Media competency has emerged as a vital professional skill, enabling teachers to effectively use digital tools, engage learners, communicate information, and promote ethical and safe media practices. The present study aimed to assess the level of media competency among pre-service teachers and to examine differences based on residential background, stream of graduation, and teaching experience.

The study was conducted on a sample of 1,568 pre-service teachers enrolled in the two-year B.Ed. programme across colleges in Jaipur. A Media Competency Assessment Tool developed by the researcher was employed to assess four dimensions: technical skills, media interaction and communication, pedagogical application, and ethical and safe media use. Descriptive statistical techniques were used for data analysis.

The findings revealed that most pre-service teachers exhibited a moderate level of media competency, while a substantial proportion demonstrated low competency levels. Urban students, science graduates, and those with prior teaching experience showed comparatively higher media competency. The study underscores the need for systematic and practice-oriented media training within teacher education programmes to better prepare future teachers for digitally enriched classrooms.

Keywords: Pre-service Teachers; Teacher Education; Digital Skills; Media Ethics; B.Ed. Programme.

Introduction:

The rapid expansion of digital technologies has transformed the way teaching and learning take place in schools. Classrooms today increasingly rely on digital media such as online resources, educational videos, learning management systems, interactive presentations, and virtual communication platforms. In this context, teachers are expected to possess not only basic technological skills but also the ability to use media meaningfully, responsibly, and pedagogically.

Media competency refers to a combination of knowledge, skills, and attitudes that enable individuals to access, use, evaluate, create, and communicate media content effectively and ethically. Scholars and international frameworks describe media competency as encompassing technical skills, critical understanding of media messages, pedagogical application of digital tools, and awareness of ethical and safety issues such as privacy, copyright, and responsible online behaviour. In teacher education, media competency is viewed as an essential professional capability that supports effective teaching, learner engagement, and responsible media use in classrooms.

Over the last decade, research in teacher education has increasingly emphasized the role of media competency in preparing teachers for 21st-century learning environments. Studies have shown that teachers who possess higher levels of media competency are more confident in integrating technology into instruction, designing interactive learning experiences, and guiding students in responsible media use. Conversely, limited media competency among teachers often results in superficial or ineffective use of digital tools.

Pre-service teachers represent a critical group, as their beliefs, skills, and competencies are still being shaped during training. Differences in background factors such as rural–urban residence, academic stream, and teaching experience may influence their exposure to and confidence in using media. Understanding these differences is essential for designing targeted interventions within teacher education programmes.

The present study therefore seeks to assess the level of media competency among pre-service teachers and to compare their competency across selected background variables, with the aim of informing curriculum development and training practices in teacher education.

Objectives:

1. To assess the level of media competencies among pre-service teachers.
2. To compare the media competencies of pre-service teachers based on Rural vs. Urban background.
3. To compare the media competencies of pre-service teachers based on Stream of graduation
4. To compare the media competencies of pre-service teachers based on Teaching experience

Research Methodology:

Sample:

The sample consisted of 1568 pre service teachers enrolled into 2 years B.Ed. program in colleges in Jaipur. The sample was drawn using stratified sampling technique.

Tools of the study

A Media competency assessment test was developed by the researcher was used for data collection. The scale consisted of 40 items scored dichotomously (1 for correct response and 0 for incorrect response). The total score ranged from 0 to 24. The tool measured three domains: Technical skills, Communication & Collaboration / Media Interaction, Pedagogical application, Ethical & Safe Media Use / Digital Safety

Procedure

Data collection was carried out with due ethical consideration. Informed consent was obtained from principals of respective colleges, and confidentiality of responses was maintained. The administration of the tool was done in classroom settings with the permission of institutional authorities. Clear instructions were given to avoid ambiguity. The researcher ensured that the environment was conducive and that distractions were minimized.

Findings and Description:

The present study sought to assess the Media Competency of pre service teachers enrolled in 2 years B.Ed. Program in colleges in Jaipur.

1. To assess the level of media competencies among pre-service teachers.

Total No. samples	Mean	Median	Standard Deviation	SEM	Skewness	Kurtosis
1568	20.15	22	10.29	0.26	0.25	0.85

Table No. 1.1: Media Competency among Pre-service Teachers

Table No. 1.1 presents the descriptive statistics of media competency scores obtained from 1,568 pre-service teachers. The mean score of 20.15 and the median score of 22 indicate that the overall level of media competency among the respondents is moderate, with scores clustering around the mid-range of the scale.

The standard deviation of 10.29 suggests a noticeable level of variability in media competency among pre-service teachers, indicating differences in individual skill levels and exposure to media use.

The standard error of mean (SEM) of 0.26 reflects the reliability of the mean score as an estimate of the population mean.

The skewness value of 0.25 indicates a slight positive skew, suggesting that a small proportion of respondents scored above the average, extending the distribution towards higher values.

The kurtosis value of 0.85 indicates a moderately peaked distribution, implying that the scores are fairly concentrated around the mean with limited extreme values.

Overall, the descriptive statistics reveal that while most pre-service teachers possess an average level of media competency, there exists considerable variation, highlighting the need for targeted interventions to enhance media skills among future teachers.

	Media Competency		
	Levels	Number of sample	Percentage
1	Low Media Competency	443	28.25
2	Moderate Media Competency	764	48.72
3	High Media Competency	361	23.02
	Total	1568	100

Table No.1.2. Level of Media Competency among Pre-service teachers

The data shows how media competency levels are distributed among the 1,568 pre-service teachers.

About 28.25% (443 students) are in the Low Media Competency group, which means they need more support in using media tools and understanding digital content.

The largest group is the Moderate Media Competency category, with 48.72% (764 students). These students have an average level of media skills and can handle basic media tasks with some confidence.

Meanwhile, 23.02% (361 students) fall in the High Media Competency group. These students are comfortable using media, understand it well, and can use digital tools effectively in different situations.

Overall, the results show that while many students have moderate skills, a significant number still need improvement to reach a higher level of media competency.

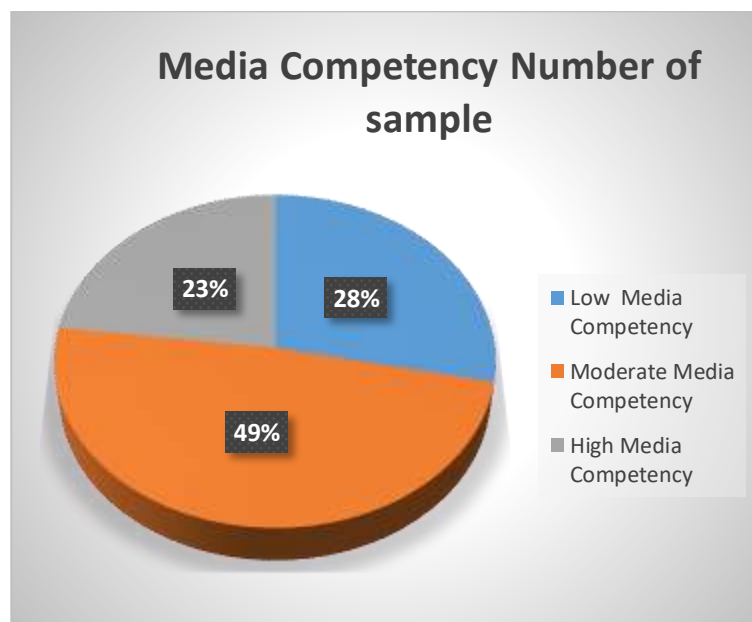


Figure No.2.3. Level of Media Competency among Pre-service teachers

In the Fig.2.3, the distribution of media competency levels among the 1,568 pre-service teachers shows that 28.25% (443 students) fall in the Low Media Competency category, indicating that they possess limited media-related skills and may require additional support.

The largest group, 48.72% (764 students), is classified as Moderately Literate, suggesting that most students have an average level of competency and can handle basic media tasks with some confidence.

Meanwhile, 23.02% (361 students) belong to the High Media Competency category, demonstrating strong media skills and the ability to engage with media tools effectively.

Overall, the results indicate that while a majority of students show moderate competency, a considerable portion still needs improvement to reach higher levels of media proficiency.

2. To compare the media competencies of pre-service teachers based on Rural vs. Urban background

		Rural		Urban	
	Levels	Number of sample	Percentage	Number of sample	Percentage
1	Low Media Competency	382	28.7	61	25.73
2	Moderate Media Competency	732	55	31	13.1
3	High Media Competency	217	16.3	145	61.17
	Total	1331	100	237	100

Table 2.a.1. Comparison of Media Competencies on the basis of Rural vs Urban background

The table presents a comparison of media competency levels among pre-service teachers based on their rural and urban background. Among the rural pre-service teachers (N = 1331), 28.7% (382 students) were found to have low media competency, while a majority, 55% (732 students), belonged to the moderately competent category. Only 16.3% (217 students) of rural respondents demonstrated high media competency.

In contrast, the distribution of media competency among urban pre-service teachers (N = 237) shows a distinctly different pattern. About 25.73% (61 students) were classified as having low media competency, whereas a relatively small proportion, 13.1% (31 students), fell into the moderately competent category. A substantial majority of urban pre-service teachers, 61.17% (145 students), were found to possess high media competency.

Overall, the findings indicate a clear disparity between rural and urban pre-service teachers. While rural students are largely concentrated in the low and moderate competency categories, urban students predominantly exhibit high media competency. This difference suggests that access to digital resources, exposure to media technologies, and learning environments may play a significant role in shaping media competency levels among pre-service teachers.

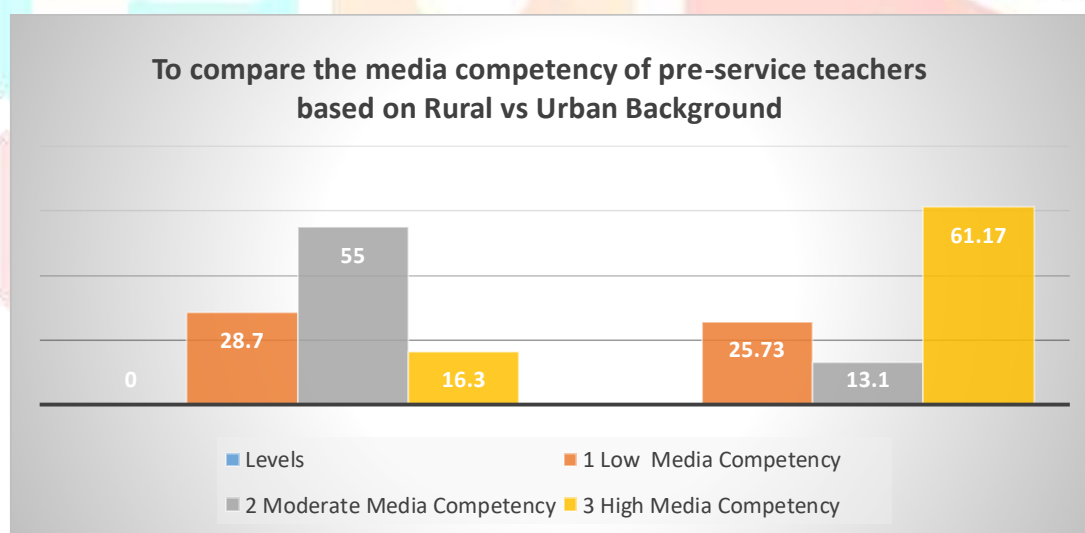


Figure 2.2. Comparison of Media Competencies on the basis of Rural vs Urban background

The figure compares media competency levels of pre-service teachers across rural and urban backgrounds.

Among rural students, a majority fall in the Moderate Media Competency category (55%), followed by Low Media Competency (28.7%), while only 16.3% demonstrate high media competency.

In contrast, urban pre-service teachers show a markedly higher level of competency, with 61.17% classified as highly literate, compared to 25.73% Low Media Competency and 13.1% moderately literate.

Overall, the figure reveals a clear rural–urban disparity, with urban students demonstrating substantially higher media competency than their rural counterparts.

3. Comparision of Media Competencies on the basis of Stream of Graduation

		Arts		Commerce		Science	
	Levels	Number of sample	Percentage	Number of sample	Percentage	Number of sample	Percentage
1	Low Media Competency	73	32.74	114	29.61	256	26.67
2	Moderate Media Competency	101	45.29	190	49.35	473	49.27
3	High Media Competency	49	21.97	81	21.03	231	24.06
	Total	223	100	385	100	960	100

Table 3.1. Comparision of Media Competencies on the basis of Stream of Graduation

The table presents a comparison of media competency levels among pre-service teachers based on their stream of graduation, namely Arts, Commerce, and Science.

Among pre-service teachers from the Arts stream (N = 223), 32.74% (73 students) were found to have low media competency, while 45.29% (101 students) belonged to the moderately competent category. Only 21.97% (49 students) demonstrated high media competency.

In the Commerce stream (N = 385), 29.61% (114 students) fell under the low competency category, and nearly half of the respondents, 49.35% (190 students), exhibited moderate media competency. A comparatively smaller proportion, 21.03% (81 students), were categorized as highly competent.

Among Science stream pre-service teachers (N = 960), the largest proportion (49.27%, 473 students) belonged to the moderately competent category. The percentage of highly competent students (24.06%, 231 students) was slightly higher compared to arts and commerce streams, while 26.67% (256 students) were found to have low media competency.

Overall, the data indicate that across all streams, most pre-service teachers fall within the moderate media competency category. However, science graduates demonstrate a relatively higher proportion of high

media competency, suggesting that academic exposure and familiarity with technology may influence the development of media-related skills.

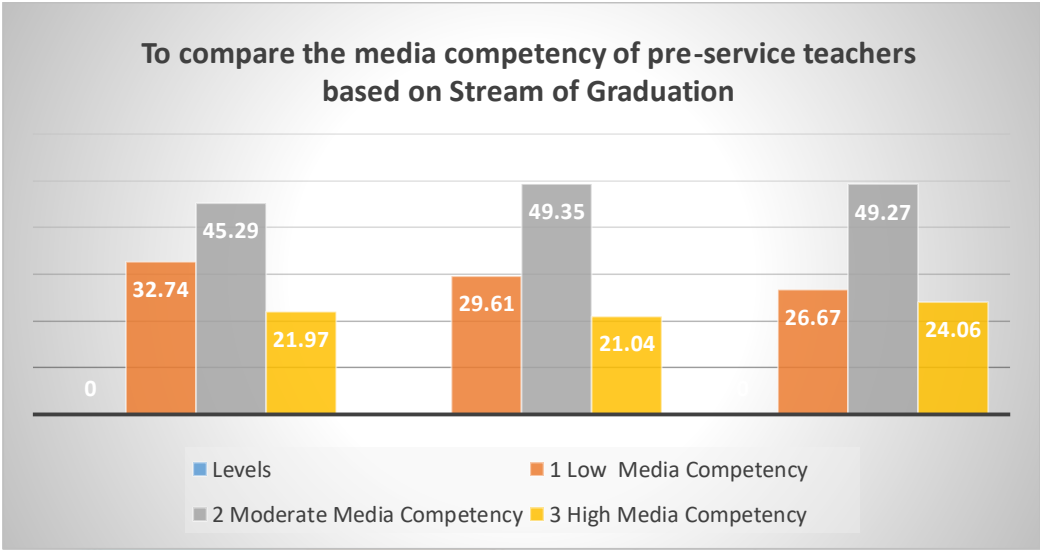


Table 3.2. Comparision of Media Competencies on the basis of Stream of Graduation

The figure presents the distribution of media competency levels among pre-service teachers across Arts, Commerce, and Science streams.

In all three streams, the majority of students fall within the Moderate Media Competency category. Among Arts graduates, 45.29% are moderately literate, followed by 32.74% Low Media Competency and 21.97% highly literate.

A similar pattern is observed in the Commerce stream, where 49.35% demonstrate moderate competency, 29.61% low competency, and 21.04% high competency.

Science graduates also predominantly exhibit moderate media competency (49.27%), but show a relatively higher proportion of High Media Competency students (24.06%) and a lower proportion of Low Media Competency students (26.67%).

Overall, the figure indicates that while moderate media competency is common across streams, science graduates demonstrate a comparatively higher level of media competency than arts and commerce graduates.

4. Comparison of Media Competencies on the basis of Teaching experience

	Levels	Teaching Experience - 0 year		Teaching Experience – 1 year	
		Number of sample	Percentage	Number of sample	Percentage
1	Low Media Competency	426	28.42	17	24.64
2	Moderate Media Competency	735	49.02	29	42.03
3	High Media Competency	338	22.55	23	33.33
	Total	1499	100	69	100

Table 4.1. Comparison of Media Competencies on the basis of Teaching experience

The table presents a comparison of media competency levels among pre-service teachers based on their teaching experience. The data include two groups: pre-service teachers with no prior teaching experience and those with one year of teaching experience.

Among pre-service teachers with no teaching experience (N = 1499), nearly half of the respondents (49.02%, 735 students) fall under the Moderate Media Competency category, indicating an average level of media competency. This is followed by 28.42% (426 students) in the Low Media Competency category, while 22.55% (338 students) demonstrate high media competency.

In contrast, pre-service teachers with one year of teaching experience (N = 69) show a different pattern. The highest proportion of this group (42.03%, 29 students) belongs to the Moderate Media Competency category. Notably, 33.33% (23 students) are classified as highly literate, which is higher than the corresponding percentage among those with no experience. Only 24.64% (17 students) fall into the Low Media Competency category.

Overall, the data indicate that pre-service teachers with prior teaching experience exhibit relatively higher media competency compared to those without experience. This suggests that practical classroom exposure plays a positive role in enhancing media-related skills and confidence in using digital tools for teaching.

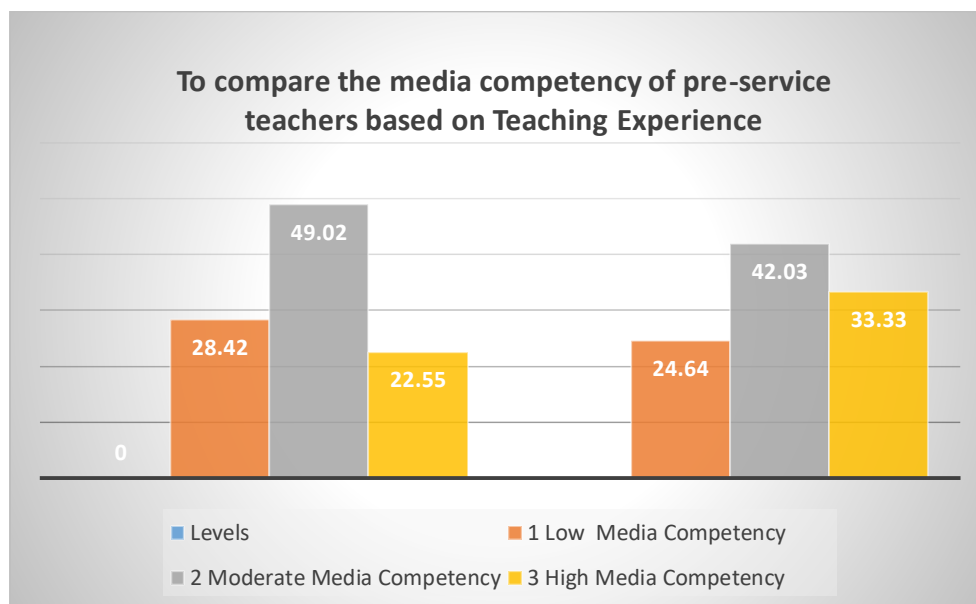


Figure 4.2. Comparision of Media Competencies on the basis of Teaching experience

The figure compares media competency levels of pre-service teachers based on teaching experience. Among those with no prior teaching experience, 49.02% are moderately literate, 28.42% are low literate, and 22.55% demonstrate high media competency.

In contrast, pre-service teachers with one year of teaching experience show a more favourable distribution, with 42.03% moderately literate, 33.33% highly literate, and 24.64% low literate.

Overall, the figure indicates that prior teaching experience is associated with higher media competency, suggesting that practical classroom exposure positively influences media-related skills and confidence.

Major Findings and Discussion :

1. The findings show that most pre-service teachers possess a moderate level of media competency, which means they are comfortable using basic media tools but are not fully confident in applying them for teaching, critical engagement, or ethical decision-making. This suggests that their skills are more functional than reflective or pedagogical. Similar studies conducted in the last decade have reported that although pre-service teachers regularly use digital media in their daily lives, teacher education programmes often provide limited opportunities to develop deeper media-related competencies (Bulger & Davison, 2018; Mihailidis & Thevenin, 2020).
2. A noticeable proportion of pre-service teachers were found to have low media competency, indicating gaps in essential areas such as effective classroom use of media, digital communication, and safe online practices. Recent research highlights that frequent exposure to media does not automatically translate into competency, especially when systematic training is absent (Koltay,

2016; Redecker, 2017). This finding suggests that many student-teachers may enter classrooms without sufficient preparation to use media meaningfully.

3. The study found a clear difference in media competency between rural and urban pre-service teachers, with urban students showing significantly higher levels of competency. This finding reflects ongoing concerns raised in research over the past ten years regarding the digital divide. Studies continue to report that access to technology, internet availability, and exposure to digital learning environments strongly influence the development of media skills (van Dijk, 2020; UNESCO, 2021). The present results indicate that these inequalities remain relevant in teacher education contexts.
4. Differences in media competency were also observed across streams of graduation, with science graduates showing relatively higher competency than arts and commerce graduates. This may be due to greater exposure to technology-based learning and problem-solving activities in science education. Earlier studies support this observation, noting that disciplinary background influences familiarity with digital tools and media use (Instefjord & Munthe, 2017; Tondeur et al., 2018). The finding suggests that pre-service teachers from non-science backgrounds may require additional support.
5. Pre-service teachers with prior teaching experience demonstrated higher media competency than those without experience, especially in terms of confidence and practical application. This finding aligns with recent research emphasising that real classroom experience plays a crucial role in developing professional competencies, including media use (Koehler & Mishra, 2016; Falloon, 2020). Practical teaching situations encourage teachers to experiment with digital tools and adapt media for instructional purposes.
6. The wide variation in media competency levels among pre-service teachers indicates uneven preparedness, which may be influenced by differences in institutional support, access to resources, and prior learning experiences. Research from the past decade points out that when media education is not consistently embedded in teacher training curricula, competency development becomes dependent on individual initiative rather than structured learning (OECD, 2019; Caena & Redecker, 2019). This highlights the need for a more uniform approach to media competency training.

Suggestions:

- The findings of the study indicate a clear need to strengthen media competency training within teacher education programmes. Since most pre-service teachers demonstrate only a moderate level of media competency, media-related skills should be systematically integrated into the B.Ed. curriculum rather than being treated as optional or supplementary content. Embedding media competency across courses can help student-teachers develop not only technical skills but also the ability to use media critically, pedagogically, and ethically in classroom settings.

- The results further suggest that greater emphasis should be placed on practical and hands-on training. While many pre-service teachers are familiar with basic media tools, they lack confidence in applying these tools effectively for teaching and learning. Providing opportunities for digital lesson planning, multimedia content creation, and use of online teaching platforms can help bridge this gap. Research in recent years highlights that experiential learning plays a crucial role in developing professional media skills among future teachers.
- The noticeable difference in media competency between rural and urban pre-service teachers points to the importance of addressing access-related inequalities. Teacher education institutions should ensure that students from rural backgrounds receive adequate support through access to digital resources, guided practice sessions, and exposure to technology-rich learning environments. Reducing this gap is essential to ensure equitable preparation of all future teachers, regardless of their background.
- Variations in media competency across streams of graduation also indicate the need for differentiated support. Pre-service teachers from arts and commerce backgrounds may benefit from additional media training that focuses on building confidence and familiarity with digital tools. Providing stream-sensitive training can help ensure that all student-teachers, irrespective of their academic background, develop comparable levels of media competency.
- The study also highlights the positive role of teaching experience in enhancing media competency. Teaching practice and internship components should therefore be strengthened by encouraging the purposeful use of digital tools during classroom teaching. Guided use of media during internships can help pre-service teachers translate theoretical knowledge into practical application, thereby improving their confidence and competence.
- Another important implication of the findings is the need to emphasise ethical and responsible media use. Media competency training should include awareness of digital safety, online ethics, data privacy, and responsible media behaviour. Recent educational research stresses that teachers must be prepared not only to use media effectively but also to guide students in safe and ethical media practices.
- Finally, continuous assessment and feedback on media competency can support sustained skill development. Evaluating pre-service teachers through media-based assignments, projects, and reflective tasks can help track progress and identify areas for improvement. Such ongoing assessment, supported by faculty who model effective media use, can contribute significantly to the development of confident and media-competent teachers prepared for contemporary educational challenges.

Conclusion

The present study examined the media competency of pre-service teachers enrolled in the two-year B.Ed. programme, with particular attention to differences based on residential background, stream of graduation, and teaching experience. The findings reveal that while most pre-service teachers possess a moderate level of media competency, a considerable proportion continue to demonstrate low competency, indicating gaps in effective and pedagogical use of media. This suggests that familiarity with digital tools does not automatically translate into professional media competence required for contemporary classrooms.

The study further highlights significant disparities in media competency across background variables. Urban pre-service teachers, science graduates, and those with prior teaching experience exhibited relatively higher levels of media competency compared to their counterparts. These differences point to the influence of access, academic exposure, and practical experience in shaping media-related skills. The results align with recent research emphasizing that media competency development is uneven when structured and equitable training is not systematically embedded in teacher education programmes.

Overall, the findings indicate the need for intentional integration of media competency within teacher preparation curricula. Strengthening practical training, addressing background-related gaps, and promoting ethical and reflective media use can help prepare future teachers to meet the demands of digitally enriched learning environments. By focusing on these areas, teacher education institutions can play a vital role in developing confident, competent, and responsible teachers capable of effectively using media to support meaningful learning in the modern classroom.

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