

Research Paper

A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District

Kumud Misra¹, Dr. Anup Kumar Pokhriyal^{2*}

ABSTRACT

The study aimed to explore the digital knowledge of prospective higher secondary school teachers in Dehradun District, focusing on various demographic factors such as gender, locality, stream, and marital status. The research adopted a normative survey method and sought to analyze the level of digital knowledge in relation to these factors. The specific objectives of the study were: (1) to examine the digital knowledge of prospective teachers based on their gender, (2) to investigate the influence of locality (rural or urban) on digital knowledge, (3) to assess the digital knowledge based on academic stream (arts, science, commerce), and (4) to explore any differences in digital knowledge related to marital status. The study tested four null hypotheses, which suggested no significant differences in the digital knowledge of prospective teachers based on gender, locality, academic stream, and marital status. The findings revealed that there was no significant difference in the digital knowledge between male and female prospective teachers. Both groups exhibited similar levels of digital knowledge, indicating that gender did not influence digital competency in this context. However, a significant difference was found between rural and urban prospective teachers, with urban teachers exhibiting better digital knowledge. This disparity was attributed to factors such as limited access to digital resources, connectivity issues, power supply irregularities, and a lack of digital literacy training in rural areas. Regarding academic stream, the study found no significant difference in the digital knowledge of prospective teachers from the science, arts, and commerce streams. This similarity in digital knowledge across streams was attributed to factors like student interest, the role of teachers in fostering digital skills, and the increasing relevance of digital technology in education. Finally, the study concluded that marital status did not significantly impact the digital knowledge of prospective teachers, as both married and unmarried individuals exhibited similar levels of digital competency, driven by personal interest and the acquisition of digital skills. Overall, the findings suggest that while gender and marital status do not significantly affect digital knowledge, locality plays a critical role, with urban teachers having better access to digital resources and training than their rural counterparts.

Keywords: *Digital knowledge, Prospective teachers, Gender, Locality, Academic stream, Marital Status*

¹Research Scholar, School of Education, Jigyasa University, Dehradun (Formerly Himgiri Zee University)

²Associate Professor, School of Education, Jigyasa University, Dehradun (Formerly Himgiri Zee University)

*Corresponding Author

Received: July 04, 2025; Revision Received: August 18, 2025; Accepted: August 23, 2025

A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District

Knowledge and information are sometimes used interchangeably specially when associated with society: Knowledge is structured and enriched information integrated with an epistemological approach (Belisle, C., 2006).

Digital term almost universally refers to automated electronic machinery. It is a device for processing, storing, and displaying information at a very high speed to produce results that are meaningful to the user. Digital is basically a processor of information designed to build life trouble-free due to its speed, accuracy, ability to store large quantity of information and to carry out long and complex operation with and without human intervention. One reason for this development is the user-friendliness of computers. It is easy and comfortable to use.

Digital knowledge works as a tool. This tool will extract document features, contextual features and meta-data features (information about creation, date, author, type of document, origin, etc.). Using digital tools implies procedural competency, as these tools are characterized by their symbolic manipulation of information through procedures and representations (Belisle, C., 2006).

Digital literacy is a broader concept that is frequently increasing. It consists of developing new skills and knowledge which provides awareness and advanced level thinking skills. Therefore, it is essential to integrate digital literacy in educational core curriculum to appropriate utilization of digital (Singh, C. B., & Prasad, C. S., 2016).

A creative and enthusiastic teacher can incorporate the modern development of ICT in the classroom very successfully. Technology-based learning can be viewed as an innovative approach for delivering well designed, learner-centred, interactive and facilitated learning environment to anyone at anyplace, anytime by utilizing the attributes and resources of various digital technologies along with other forms of learning materials suited for open and distributed learning environment pg-18 (Kumar, P., 2017). With digital technology, which provides access through search engines but also information-processing tools data mining tools and knowledge discovery tools, the dominant cognitive activities solicited are information structuring, knowledge processing and construction of meaning pg-63 (Belisle, C., 2006).

Digital technology is a gift to educator and learner. But many educators understandably have fears about how, or even whether, to incorporate it into their teaching. Digital technologies are electronic equipment, systems, devices and resources that generate, store or process data. With planning and creativity of digital technology by educators it can be used to create meaningful learning experiences which will serve both students and instructors well. Technology has a key role to play as a powerful teaching tool.

The rapid increase in digital technology access and availability of information has in some way changed the nature of the school or college experience. Students today generally interact with academic, disciplinary information through electronic technology, most of it becoming more and more digital. However, their teachers interact with information for their professional experience or practice almost exclusively through print technology. Many teachers are still dictating to frustrated classes of youngsters their 'personal' version of some geography, history, biology or literature contents, while it has been possible for some time now to imagine that such text or data could be made available online, and that the teacher could spend their educational time teaching their students how to think about these contents

A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District

from a geography, historical, biological or literacy point of view. This change is not happening in most schools and universities. When evaluating tools are developed, the criteria and breathing techniques need to be presented explicitly in order to be used by the learners for attaining success. Not only do the evaluation procedures need then to be much more formatted than selective they can also be more adapted to the kind of knowledge and complete and aimed at, through the use of simulations and multimedia contexts (Belisle, C., 2006).

Digital devices associated with computers magnify its productivity and effectiveness in school. Too often ICT are thought of as involving computers only (Semenov, A., 2005).

Problem Entitled

‘A study of Digital Knowledge of prospective higher secondary school teachers in Dehradun district’.

Rational of the study

It has been widely recognised that in corona duration, teaching and learning process was conducted through e-learning. The teaching and learning environment totally changed due to the pandemic worldwide. Hence there is a great need of this kind of study, as it would help to know the attitude of the prospective teachers towards e-learning. So, the present research work in this area will be quite informative, stimulating and promising.

REVIEW OF LITERATURE

Darby, J. (1992) studied ‘the future of computers in teaching and learning (computers and education)’. This study reveals that the chief problems in using of computers in teaching and learning are not mainly technical but are of institution’s structure and social in nature. Teachers did not want to form and use ‘computer-adapted teaching and learning materials. The institution was lacking for designers of courseware, evaluation of existing courseware and its delivery reference to e-learning and its future.

Gaba, A. K., & Prakash, P. (2017) conducted a study on ‘open education resources (OER) for skill development. In the study the researcher discussed the alternative strategy for providing vocational and skill training by using open education resources (OER).

Trakru, et al. (2019) observed ‘the effectiveness of e-learning in higher education. Main objective of the study was to study the effectiveness of e-learning particularly in higher education institutions. The study focuses on evaluating the effectiveness of online learning primarily across gender, course and city. It was found that there is no significant difference in effectiveness of e-learning among students undertaking different courses.

Devi, G. P., Sornapudi, S. D., & Vijayalakshmi, M. (2020) investigated the aptitude and attitude of teachers towards digital teaching in India during Covid-19 lockdown. Objective of the study was to understand the aptitude and attitude of teachers in India towards digital teaching. It was found that teachers had good computer and app skills to begin with and had the right attitude as well in handling the online classes. A significant difference between the overall skills and attitude of the teachers was found.

Pribisev, T. & Vuckovic, S. (2000) focused on ‘the teacher’s attitude towards computers in education of young children.’ The research was intended to know the attitudes of teacher

A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District

towards the use of computers in education of young children. The main objective of study was to know about the teacher's computers skills and teacher's ability on application of computers in the education. It was found that very limited in-service teachers are truly "computer savvy". The teachers don't perceive the potentials of using computer technology in their teaching, but are very eager and enthusiastic to advance at this track.

Pokhriyal, A. & Misra, K. (2000) studied an evaluative study of the effect of COVID- 19 Pandemic on e- learning achievements and educational environment of prospective higher secondary school teachers. Findings of the study show that most of the students acknowledged classroom teaching better than online teaching. The economic condition affected and it affects the learning environment. It was found that zoom and Google meet have been popular platforms among the students. Traditional classroom teaching has been the first choice among the students but sometimes they prefer online teaching. Blended learning has also been the concept of National Education Policy, 2020.

CS, G. (2021) found teacher's attitude towards online. Objective of the study was to study the attitude of teachers towards online teaching on the basis of secondary and primary school teachers, on the basis of gender, locality, teaching experience and teaching subject. Results showed that male teachers develop a more favourable attitude toward online teaching than female teachers. Urban teachers show more interest towards online teaching than the rural teachers. It was found that more experienced teachers show less interest in online teaching than less experienced teachers.

Objectives of the study

The study envisaged the following objectives.

1. To study the digital knowledge of prospective higher secondary teachers towards their gender (male/ female).
2. To investigate the digital knowledge of prospective higher secondary teachers towards their locality (rural/ urban).
3. To know the digital knowledge of prospective higher secondary teachers towards their stream (art/ science/ commerce).
4. To analyse the digital knowledge of prospective higher secondary teachers towards their marital status (married/unmarried).

Hypotheses

In order to realise the above objectives of the present study following null hypotheses were framed by the researcher.

1. There exists no significant difference between the digital knowledge of prospective higher secondary teachers towards their gender.
2. There exists no significant difference between the digital knowledge of prospective higher secondary teachers towards their locality.
3. There exists no significant difference between the digital knowledge of prospective higher secondary teachers towards their stream.
4. There exists no significant difference between the digital knowledge of prospective higher secondary teachers towards their marital status.

A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District

METHODOLOGY

According to the nature and objectives of the present study, a normative survey method was adopted. Normative research studies are designed to obtain pertinent and precise information concerning the current status of the phenomena and whenever possible to draw conclusions from the facts discovered. Primary data has been taken for this purpose.

Population

Population in the present study included all the prospective higher secondary school teachers studying in the different colleges situated in Dehradun district was considered the population of the present study.

Sample

For the same purpose a sample of 263 prospective higher secondary school teachers were taken from 2 blocks (rural/urban) of Dehradun district by using purposive sampling technique.

Sample has been taken in the following way.

Table 1: Sample of prospective higher secondary school teachers

Location	Colleges	Boys	Girls
Rural	Dronacharya college of Education, Dehradun	07	33
	Shree Dev Bhoomi College of Education, Dehradun	13	45
Urban	Uttaranchal College of Education, Dehradun	12	57
	Tanishk College of Education, Dehradun	65	31
	Total	263	

Research instruments

In the present study the researcher administered a standardized tool. The scale i.e., Computer Knowledge Test developed by Raghu Ananthula and Mahendra Reddy Sarsani.

Statistical Technique

Statistical technique employed for the data analysis was mean, standard deviation and t- test was found appropriate for the analysis of the data.

ANALYSIS & INTERPRETATION OF DATA

Table 2: Location wise number of male and female prospective teachers

Location	Colleges	Male	Female
Rural	Dronacharya college of Education, Dehradun	7	33
	Shree Dev Bhoomi College of Education, Dehradun	13	45
Urban	Uttaranchal College of Education, Dehradun	12	57
	Tanishk College of Education, Dehradun	65	31
	Total	263	

H0.1: There exists no significant difference between the digital knowledge of prospective higher secondary teachers towards their gender.

A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District

Table 3: Digital Knowledge of Prospective Higher Secondary Teachers towards their Gender

Variable	Prospective Higher Secondary Teachers	Number	Mean	Standard Deviation	t-Value	Level of Significance
Digital Knowledge	Male	98	36.12	12.34	0.014	0.05
	Female	165	39.92	11.76		Not Significant

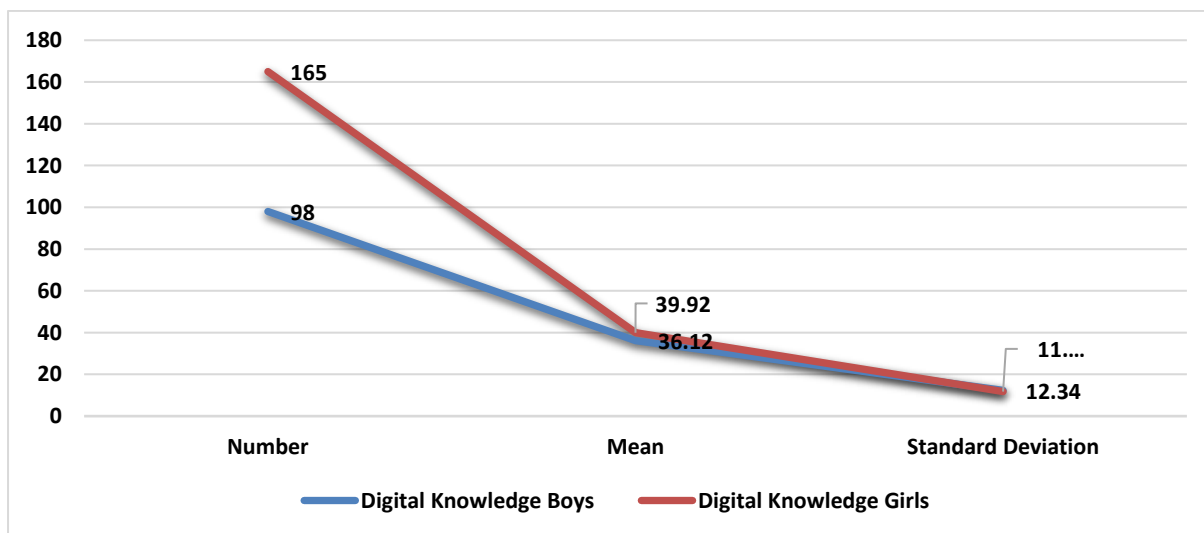


Fig. 1

It is evident from table 3 and fig 1 that mean and standard deviation of the digital knowledge of male prospective higher secondary teachers is 36.12 and 12.34 and female prospective higher secondary teachers mean and standard deviation is 39.92 and 11.76 respectively. Standard deviation of male teachers is found more than female teachers. Calculated value i.e., 0.014 is less than table value (0.014 < 1.97). Therefore, the hypothesis is accepted at 0.05 level of confidence. It means digital knowledge of male and female prospective higher secondary teachers was almost similar.

H0.2: There exists no significant difference between the digital knowledge of prospective higher secondary teachers towards their locality.

Table 4: Digital Knowledge of Prospective Higher Secondary Teachers towards their Locality

Variable	Prospective Higher Secondary Teachers	Number	Mean	Standard Deviation	t-Value	Level of Significance
Digital Knowledge	Rural	97	31.78	10.57	2.55	0.05
	Urban	166	42.56	11.14		
						Significant

A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District

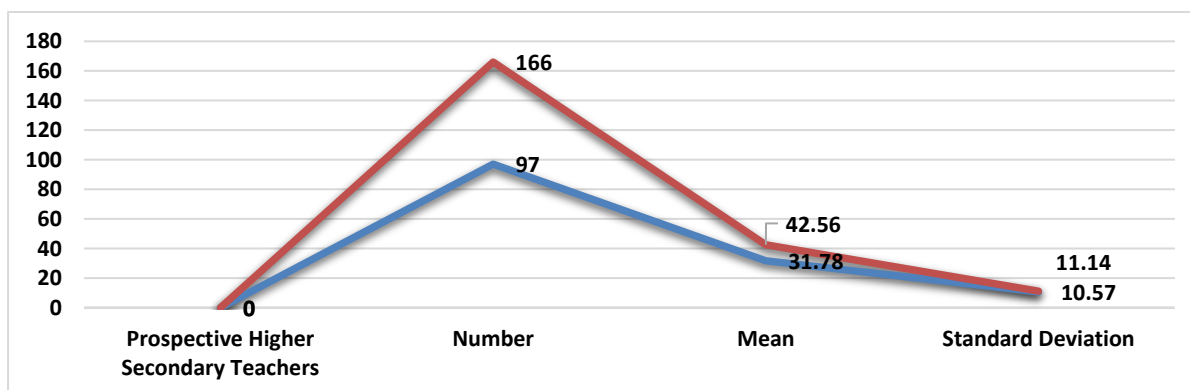


Fig. 2

Table 4 and fig 2 show that mean and standard deviation of the digital knowledge of male and female prospective higher secondary teachers of rural area is 31.78 and 10.57 and mean and standard deviation of the digital knowledge of male and female prospective higher secondary teachers of urban area is 42.56 and 11.14 respectively. Standard deviation of rural teachers is found less than urban teachers. Calculated value i.e., 2.55 is more than table value ($1.97 < 2.55$). Therefore, the hypothesis is rejected on 0.05 level of confidence. It means digital knowledge of male and female prospective higher secondary teachers of rural and urban areas is varying due to locality. There may be so many reasons behind lack of digital knowledge among rural prospective higher secondary teachers such as-connectivity, electricity and digital incompetency.

H0.3: There exists no significant difference between the digital knowledge of prospective higher secondary teachers towards their stream.

Table 5: Digital Knowledge of Prospective Higher Secondary Teachers towards their Stream

Variable	Prospective Higher Secondary Teachers	Number	Mean	Standard Deviation	t-Value	Level of Significance
Digital Knowledge	Science Stream	172	38.98	12.34	0.426	0.05
	Art/ Commerce Stream	91	40.41	10.7		

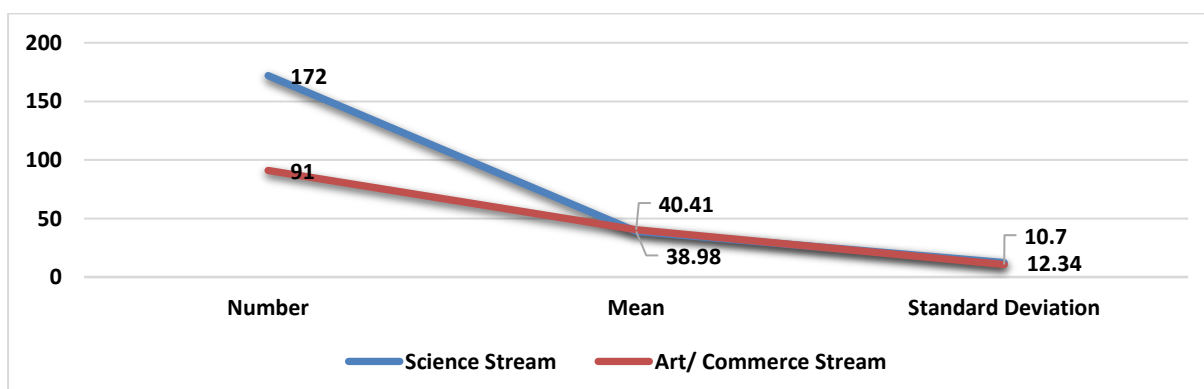


Fig. 3

A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District

It may be observed from table 5 and fig 3 that mean and standard deviation of the digital knowledge of male and female prospective higher secondary teachers of science stream is 38.98 and 12.34 and mean and standard deviation of male and female prospective higher secondary teachers of art/ commerce stream is 40.41 and 10.70 respectively. Standard deviation of male and female prospective teachers of science stream is found more than male and female prospective teachers of art/ commerce stream. Calculated value i.e., 0.426 is less than table value ($0.426 < 1.97$). Therefore, the hypothesis is accepted at 0.05 level of confidence. It means digital knowledge of male and female prospective higher secondary teachers of science and art/ commerce stream is almost similar.

H0.4: There exists no significant difference between the digital knowledge of prospective higher secondary teachers towards their marital status.

Table 6: Digital Knowledge of Prospective Higher Secondary Teachers towards their marital status

Variable	Prospective Higher Secondary Teachers	Number	Mean	Standard Deviation	t-Value	Level of Significance
	married	47	45.06	10.12	0.0029	0.05
Digital Knowledge	unmarried	216	38.3	11.76		

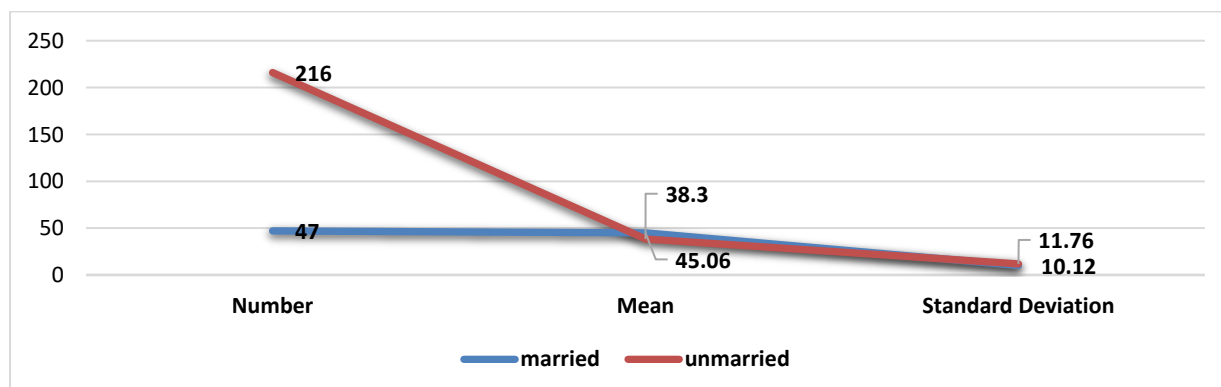


Fig.4

It may be observed from table 6 and fig 4 that mean and standard deviation of the digital knowledge of married male and female prospective higher secondary teachers is 45.06 and 10.12 and mean and standard deviation of male and female unmarried prospective higher secondary teachers 38.30 and 11.76 respectively. Standard deviation of married and unmarried male and female prospective teachers was found similar. Calculated value i.e., 0.0029 is less than table value ($0.0029 < 1.97$). Therefore, the hypothesis is accepted at 0.05 level of confidence. There was no significant difference found between male and female married and unmarried prospective higher secondary teachers.

Findings of the study

The present study reveals the following findings.

- Digital knowledge of male and female prospective higher secondary school teachers was found almost similar.

A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District

- There was found significant difference between rural and urban prospective higher secondary school teachers towards their digital knowledge. The difference may be due to digital incompetency, connectivity, electricity, lack of interest towards digital knowledge and absence of favourable environment etc.
- Digital knowledge of male and female prospective higher secondary school teachers of science and art/ commerce stream found almost similar. It may be due to their interest, positive environment, healthy competition, role of teachers and need and importance of time.
- Digital knowledge of married and unmarried male and female prospective higher secondary school teachers was found similar. It may be due to their interest and acquired skill.

CONCLUSION

In conclusion, the study reveals several important insights about the digital knowledge of prospective higher secondary school teachers across various demographic and socio-cultural factors. Firstly, the digital knowledge of male and female prospective teachers was found to be almost identical. This indicates that gender does not play a significant role in the development or acquisition of digital competencies among teachers, which may reflect equal access to training and resources for both genders, as well as similar levels of interest and engagement in digital learning. However, a significant difference was found between rural and urban prospective teachers, with urban teachers displaying higher levels of digital knowledge. This disparity can likely be attributed to factors such as better access to technology, stable electricity supply, improved internet connectivity, and a more conducive learning environment in urban areas. In contrast, rural teachers may face challenges like digital illiteracy, insufficient infrastructure, and lack of interest in digital tools due to limited exposure, which affect their ability to acquire digital knowledge. When comparing digital knowledge between science and arts/commerce stream teachers, the study found no significant difference. This suggests that the interest and engagement in digital tools among teachers from both streams are largely influenced by their work environment, competition, and the increasing importance of digital skills in education, rather than the subject they teach. Teachers from both streams recognize the need for digital knowledge to enhance their teaching methodologies.

REFERENCES

- Achievements and Educational Environment of Prospective Higher Secondary School Teachers. *Design Engineering*(9), 3890-3904. Retrieved December 2021, from <http://www.thedesignengineering.com/index.php/DE/article/view/7395>
- Binali, T., Tsai, C.-C., & Chang, H.-Y. (2021, December). University students' profiles of online learning and their relation. *Computers & Education*, 175, 1-16. Retrieved November 2021, from <https://www.sciencedirect.com/science/article/pii/S0360131521001925>
- CS, G. (2021). Teacher's Attitude towards Online Teaching ., (pp. 397-405). Retrieved October 2021, from https://www.researchgate.net/publication/353336812_Teachers_Attitude_towards_Online_Teaching
- Darby, J. (1992). The Future of Computer in Teaching and Learning. *Computer and Education*, 19 (2), pp. 193-197
- Devi, G. P., Sornapudi, S. D., & Vijayalaskhmi, M. (2020, July). Aptitude And Attitude of Teachers Towards Digital Teaching In India During Covid-19 Lockdown. *An International Refereed, Peer Reviewed & Indexed Quarterly Journal in Science*,

A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District

- Agriculture & Engineering*, X(XXXIV), 1332-1338. Retrieved October 2021, from [ards_digital_teaching_in_india_during_covid19_lockdown](#)
- Dixit, & Gupta. (2014, April). *Inquisitive Teacher*. Retrieved November 2021, from Multidisciplinary Research Journal: https://scholar.google.co.in/scholar?hl=en&as_sdt=0%2C5&as_vis=1&q=Inquisitive+Teacher+multidisciplinary+research+journal+2014&btnG=
- Gaba, A. K., & Prakash, P.(2017, October). Open Education Resources (OER) for Skill Development -An Open
- Kumar, P. (2017, September). Attitude Of Teacher Educators Towards E-Learning. *Bhartiyam International Journal Of Education & Research*, 6, 18-35. Retrieved October 2021, from <http://www.gangainstituteofeducation.com/NewDocs/sept-2017/Dr-2.pdf>
- Mondal, A., Saha, A., & Bai, M. N. (2015). National curriculum framework for teacher education, 2009: A review of its perspectives and relevanceness. *International Journal of Applied Research*, 776-778. Retrieved October 2021, from <https://www.allresearchjournal.com/archives/?year=2015&vol=1&issue=9&part=L&ArticleId=673>
- Pokhriyal, A. K., & Misra, K. (2021). An Evaluative Study of the Effect of COVID 19 Pandemic on e- learning
- Pribisev, T. &Vuckovic, S. (2000). The teacher's attitude towards computers in education of young children in C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference (SITE) 2000*.
- Trakru, M., & Jha, T. K. (2019). E-learning effectiveness in higher education. *International Research Journal of Engineering and Technology (IRJET)*, 6(5), 96-101.
- University Perspective. (N. Varghese, Ed.) *Journal of Educational Planning And Administration*, XXXI, 265276. Retrieved October 2021

Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Misra, K. & Pokhriyal, A. K. (2025). A Study of the Status of Digital Knowledge of Prospective Higher Secondary School Teachers in Dehradun District. *International Journal of Indian Psychology*, 13(3), 2381-2390. DIP:18.01.219.20251303, DOI:10.25215/1303.219