

## Virtual Internship Programme: Issues and Challenges Faced by Prospective Mathematics Teachers During 2<sup>nd</sup> Wave of Covid-19

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### Abstract

Covid-19 has impacted all spheres of human life worldwide, including educational institutions and organizations. As a result, humans' daily lives were thrown into disarray. During the 1st, 2nd & 3rd waves of covid-19, Students of schools and educational institutions have been trapped in uncertainty in India. Teacher education institutions have also been affected in their theory & practical and started to conduct classes online. Many teacher education institutions skipped their internship programme because of school closure and not the availability of students.

In contrast, some institutions have started to conduct micro-teaching, peer teaching, and simulation teaching online/virtually. Teachers, prospective teachers, and students have been facing problems in the virtual teaching-learning process from 1st wave of covid-19. Virtual/Online/e-learning became popular because it provides greater learning flexibility, Inclusivity that enables learners or users to access without restrictions of time and place with the help of the computer, the internet, mobile, etc. Besides its benefits and amenity, virtual learning also has issues and challenges because of its immediate implementation in the education system. This study aimed to discover the issues and challenges faced by the prospective mathematics teachers during the 2nd wave of covid-19 in their Virtual Internship Programme. The research methodology was qualitative. The researcher purposively selected the prospective mathematics teachers, and semi-structured one-to-one telephonic interviews were conducted to collect data. The researcher found challenges related to effective use of ICT, smooth curriculum transaction, and assessment based on the interview. Therefore, Teacher education institutions should focus on these issues and challenges and train prospective teachers for virtual teaching.

**Keywords:** Teacher education, Virtual Internship, Prospective Mathematics Teacher, Technology.

**Introduction:**

Teacher education is key to establishing a pool of teachers who will shape the next generation of students. In teacher education programme, Internship plays a crucial role in shaping the trainees into effective teachers of tomorrow. It provides practice teaching and opportunities to participate in practical activities of a school like a regular teacher does. An internship may major impact preservice teachers' future career plans. Covid-19 has impacted all spheres of human life worldwide, including educational institutions and organizations. As a result, humans' daily lives were thrown into disarray. During the 1st, 2nd & 3rd waves of covid-19, Students of schools and educational institutions have been trapped in uncertainty in India. During the 1st wave of the pandemic, the union government ordered schools and educational institutions to shut down on 16 March 2020. State across India has postponed or canceled school examinations and promoted students based on their prior performance or knowledge. The prolonged lockdown hampered the teaching-learning activity of the learner. To ensure cohesion and coherence in teaching-learning activity, few educational institutions adopted e-learning or virtual learning. Teacher education institutions have also been affected in their theory & practical and started to conduct classes online. Many teacher education institutions skipped their internship programme because of school closure and not the availability of students.

In contrast, some institutions have started to conduct micro-teaching, peer teaching, and simulation teaching online/virtually. It was the beginning of virtual/online learning where teachers, prospective teachers, and educators struggled to adapt to new technologies. The Indian education system has been completely transformed and faced a huge challenge in this epidemic. The way students are taught in the classroom has radically altered, and the role of the teacher got intertwined with technology. Many teachers could not handle technological glitches and teach virtually. Although, this tectonic shift was immediate and unanticipated, which has created issues and challenges for teachers, students, and every stakeholder of education. Hence, gradually it became a topic of discussion for research at all levels of education.

Teachers face several challenges during online teaching like motivating students to learn online, keeping tracking students' progress, internet connectivity, teaching mathematics, etc. (Gurung, 2021). Online teaching may be given to the students as a supplement but cannot replace face-to-face teaching-learning activity (Shah & Jani 2020). Despite facing many obstacles in virtual learning like technical glitches, conducting online exams, and assessments, school teachers, have positive perceptions regarding virtual learning (Kamal & Illyan, 2021).

when the teachers are shifted from the conventional teaching-learning process to the virtual teaching-learning process, various issues came, like actively participating students in the virtual teaching-learning process and creating quality content for the teaching-learning process (Sangeeta and Tandon, 2020).

Moreover, numerous technological challenges also came, like network fluctuation, login issues, inaudible voice, video buffering, etc. (Hasan, 2021). Teachers have faced challenges in online teaching, mainly to the technology and process of assessment, etc. (Kulal & Nayak, 2020). Due to a lack of proper training, teachers have faced technical issues in online classes. Students feel that they can learn better in offline classes, and online classes are stressful and affect their health and social life (Chakraborty et al., 2020). Teaching mathematics online is challenging, especially geometry and calculus (Yohannes, 2021). Teachers have faced challenges and glitches in online teaching during lockdown related to subject content, classes, online assessment, and being at loggerheads with parents (Mathur & Thomas 2021).

Pupil-teacher has gained teaching-learning experience to teach online from their university and prepared themselves with some interactive/alternative methods to overcome problems if they occur during the online learning (Ardiyansah, 2021). There is a need to train faculty and mentor with changing circumstances, and institutions should be sensitized for online learning (Pandit & Agarwal, 2021). Government should develop software for online Mathematics teaching, and training should be given to teachers of different levels (Rao, 2020). working hours of the teacher are increased in online learning due to poor internet connection. Still, the teacher also believes that online education diversifies their knowledge and enhances their technical knowledge (Dubey & Singh, 2020). Pre-service teachers express great interest in online teaching and say that stable network connectivity is necessary for online teaching (Amoah & Naah, 2020). For high school learners, e-learning is effective for studying mathematics. pre-service teachers indicated that online teaching made them learn to teach differently from normal teaching (Moreno-Guerrero, et al., 2020). They learn about knowledge and skills for conducting online classes, including the assessment process (Bunyamin, 2021).

### **Need and Significance of the Study:**

Teachers, prospective teachers, and students have been facing problems in the virtual teaching-learning process from 1<sup>st</sup> wave of covid-19. Virtual/online learning has been considered the best alternative in place of face-to-face learning to make the teaching-learning process continue. virtual learning is not a new concept it has started in the mid-1990 with and discovery of the internet. But due to emergencies during the pandemic, it became part of the

discussion all over the world. Virtual/Online/e-learning became popular because it provides greater learning flexibility, Inclusivity that enables learners or users to access without restrictions of time and place with the help of the computer, the internet, mobile, etc. Besides its benefits and amenity, virtual learning also has issues and challenges because of its immediate implementation in the education system. Many kinds of research have been conducted in the amid of covid-19 1<sup>st</sup> wave and still, such researches are going on to find out the perception of along with this research on issues, and challenges faced by the learner, teacher, and stakeholders to make the online/virtual/web-based teaching-learning process effective.

Research has shown that the experience from an internship is one of the significant and impactful events for pre-service teachers in preparing them for the realities of the classroom (Davis & Roblyer, 2005). In this pandemic, due to no choice many teacher education institutions have organized their internship programme online. Prospective teachers have faced many challenges during their virtual internships. In this research, the researcher has focused on prospective mathematics teachers because in the 2<sup>nd</sup> wave of the covid-19 researcher was part of their virtual internship. Teaching mathematics online became a challenge for prospective teachers and students as well. This is so because neither the prospective teachers nor the teacher educator had such kinds of challenges or opportunities before the epidemic to learn in their teaching and learning career. The researcher, being an observer of such prevailing situations where prospective mathematics teachers had been facing numerous issues and challenges related to virtual teaching. Research has influenced and got an insight to study the issues and challenges faced by prospective mathematics teachers during the 2<sup>nd</sup> wave of covid-19 in their Virtual Internship Programme. The goal to carry out this study is to inform teacher education institutions, teachers, and programme coordinators to take necessary action and redesign their curriculum according to the need and during their microteaching practice to train them to teach in the virtual classroom and it also became an urgent need for the nation.

### **The Objective of the Study:**

To find out the issues and challenges faced by prospective mathematics teachers during the 2<sup>nd</sup> wave of covid-19 in their Virtual Internship Programme.

### **Research Methodology:**

The research methodology was qualitative. A semi-structured one-to-one telephonic interview has been conducted to find out the issues and challenges faced by prospective

mathematics teachers. The population of the study consists of prospective teachers of mathematics enrolled in B.Sc. B. Ed. programme of 7<sup>th</sup>-semester, 2018-22 session from the Central University of South Bihar Gaya. To fulfill, the objective of the study a sample of 6 students (3 female & 3 male) were purposively selected from the population. The data from one-to-one telephonic interviews were collected based on self-made semi-structured interview questions. The questions of the semi-structured interview are mentioned below:

**Table: 1 Dimensions of Internship Programme & Interview Questions.**

Dimension	Subtopic	Questions
ICT Competencies		<ul style="list-style-type: none"> <li>• Which virtual platform have you used to teach mathematics during your internship?</li> <li>• How do you come to know about this platform?</li> <li>• Have you ever used this platform before a pandemic?</li> <li>• How did you ensure that this platform is appropriate to teach mathematics online?</li> <li>• What major challenges have you faced while using this virtual platform?</li> </ul>
Curriculum Transaction	Lesson Planning	<ul style="list-style-type: none"> <li>• How did you prepare your lesson plan?</li> <li>• What type of issues have you faced while lesson planning?</li> </ul>
	Lesson Delivering	<ul style="list-style-type: none"> <li>• What challenges have you faced while writing on blackboard?</li> <li>• How do you develop skills to teach mathematics online?</li> <li>• What type of issues have you faced while using T.L.M?</li> <li>• How do you accommodate different style learners during solving the mathematical problems?</li> </ul>

		<ul style="list-style-type: none"> <li>• How did you teach geometry?</li> </ul>
Assessment		<ul style="list-style-type: none"> <li>• How did you assess different types of learners?</li> <li>• Which platform have you used for assessment?</li> <li>• What do you understand about the 360° assessment? Is it possible while teaching online?</li> </ul>

### **Analysis and Interpretation based on Data:**

Data collected through semi-structured interviews were analysed with the help of discourse analysis and their dimension-wise interpretations are presented in the following sections.

#### **ICT Competencies**

Prospective mathematics teachers were asked questions related to ICT competencies. A total of six teachers was using Google-meet during their internship and said that this platform is easy to access from the rest virtual platform. They were come to know about google meet from their teachers while their micro-teaching practice. Teacher-5 is aware of how to use Google-meet before pandemic while the rest five come to know when they started their internship. They did not ensure about this platform for mathematics teaching just started teaching. They have started learning from their peer group how to use it effectively and from YouTube. While using this platform for teaching mathematics Teacher-6 has faced a major challenge related to sound and become disconnected after every 40 minutes. while the rest five has smoothly handled it. In the beginning, they faced many technical challenges in using virtual platforms for internship programme like setting cameras, volume, charging but slowly and steadily they got themselves familiar.

#### **Curriculum Transaction**

Lesson Planning: Teacher-1 and Teacher-2 used to make their lesson plan on the A-4 size white page. Because they have no laptop. While rest three teachers were using Microsoft word documents for lesson planning. During lesson planning, they were confused about choosing pedagogical techniques/methods. Because they have theoretical knowledge related to

pedagogy and their teachers did not train them for choosing pedagogical techniques for their online classes.

- Lesson Delivering: Prospective teachers have faced a lot of challenges in delivering lessons online.

Teachers have always faced problems while writing on the blackboard. In starting they were feeling demotivated because they did not practice during their micro-teaching blackboard writing skills. After delivering some lessons they were come to know about some online applications like Jam board, Google notes with the help of YouTube. Teachers were learning and developing skills from YouTube and with peers.

- For TLM, Teacher-3, 4 & 5 were played videos from YouTube and while playing video they have faced issues related to network connection, in between Add, video Buffering. When all these issues came teachers become panicked about their time management and unable to handle students. While Teacher-1 & 2 showed hand-made TLM for engaging their children. But in a virtual classroom hands-on experience is not possible and learners become passive.
- During solving mathematical problems teacher-1 & 3 used to solve puzzles and Teacher-2 & 5 solve the problem on the blackboard and told their students to turn on the camera. Both Students and teachers faced the network-related challenge. Teachers were unable to accommodate different style learners during solving the mathematical problems.
- For teaching geometry only, teacher-5 used GeoGebra and the rest were no more familiar with how to use GeoGebra.

### **Assessment**

Teachers were unable to assess their students and said that they have conducted an assessment with the help of Google Form but the learner response was not expected. They said the learning outcome from virtual teaching is poor because all students are not competent and experts in handling technological devices.

Teachers were aware of the 360° assessment and explain 360° assessment consist of the assessment of the learner in the cognitive, affective, and Psychomotor Domain. Teachers express their feeling and said that 360° assessment is not possible in virtual teaching especially for the rural areas learner because learner who belongs to the rural area, don't have exposure to use digital devices.

### **Issues & Challenges in Virtual Internship Programme:**

Based on the above interpretation, the following issues, and challenges faced by prospective mathematics teachers during the 2<sup>nd</sup> wave of covid-19 in their Virtual Internship Programme.

- Prospective mathematics teachers were not trained before going to the internship for the Virtual Internship Programme.
- Prospective teachers faced issues with choosing appropriate pedagogical techniques and methods for virtual classroom.
- Prospective teachers have not aware of different applications like GeoGebra, Geo sketchpad.
- Prospective teachers have not developed Blackboard writing skills during Micro-teaching practice.
- Internet connection fluctuation discourages their motivation and morale while teaching.
- Sometimes when their internet pack gets exhausted the virtual connection automatically gets disconnect at such event most of them, they felt frustrated for not being able to continue their lesson.
- They have also reported that due to lack of financial support and assistance they couldn't afford to buy internet plans from their concerned internet service providers leading. This influence them to develop anxiety and low motivation affecting their performance
- Prospective teachers have been unable to accommodate different styles of learners during problem-solving.
- Prospective teachers have been unable to provide practical experience to the students.
- Some of the respondents have also reported that excess use of their devices for online class causes their devices to slow down or hanged and they become disconnected.
- Prospective teachers face the issue that if they have more gadgets, they can manage and teach better.
- Prospective teachers have been unable to conduct an assessment of the students.
- Prospective teachers have faced many technical glitches during lesson delivery.
- Most of the time they said am I audible, or blackboard is clear because of all these issues they face time management problems.
- Prospective teachers are not free to track children's overall progress in virtual classrooms monitoring children remotely is a constraint.
- Most of the time learners' video was off and teachers cannot identify learning is happening or not.



- Prospective teachers say that they didn't experience the real classroom challenges. They can learn more in face-to-face classroom teaching.
- Prospective teachers think they should have been trained for the Virtual Internship Programme.

### **Conclusion:**

In conclusion, teacher education institutions should focus on the above issues and challenges faced by prospective teachers and train them to handle this. Institutions should provide special training with these technologies on how to use them appropriately in the virtual classroom. The internship must be regarded as a collective initiative to improve the effectiveness of teaching-learning practices. Institutions should provide some financial assistance to their prospective teacher so they can successfully complete their internship. Institutions should also focus on their curriculum and make them flexible for their trainees. Teacher education institutions can no longer passively sit to the side and hope that virtual/online learning is a passing trend. Virtual learning is here to stay, so the time is now for teacher education institutions to begin actively considering ways to prepare prospective teachers for high-quality instruction in virtual classrooms.

### **References:**

- Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive Learning Environments*, 0(0), 1–13.  
<https://doi.org/10.1080/10494820.2020.1813180>
- Aliyyah, R. R., Reza, R., Achmad, S., Syaodih, E., Nurtanto, M., Sultan, A., Riana, A., & Tambunan, S. (2020). The Perceptions of Primary School Teachers of Online Learning during the COVID-19 Pandemic Period : A Case Study in Indonesia. *Journal of Ethnic and Cultural Studies*, 7(2), 90–109.
- Amoah, C. A., & Naah, A. M. (2020). Pre-Service Teachers' Perception of Online Teaching and Learning During the COVID – 19 Era. *International Journal of Scientific Research and Management*, 8(10), 1649–1662. <https://doi.org/10.18535/ijstrm/v8i10.e101>
- Amoah, C. A., & Naah, A. M. (2020). Pre-Service Teachers' Perception of Online Teaching and Learning During the COVID – 19 Era. *International Journal of Scientific Research and Management*, 8(10), 1649–1662. <https://doi.org/10.18535/ijstrm/v8i10.e101>
- Ardiyansah, T. Y. (2021). Pre- Service Teachers ' Perceived Readiness in Teaching Online in International Internship Programme. *Celtic: A Journal of Culture, English Language*

- Teaching, Literature and Linguistics*, 8(1), 90–102.  
<https://doi.org/10.22219/celtic.v8i1.16456>
- Bunyamin, M. A. H. (2021). The Pre-service Teachers' Internship Program during the Pandemic: Prospects for a New Landscape of Teacher Education. *Revista Gestão Inovação e Tecnologias*, 11(3), 807–824.  
<https://doi.org/10.47059/revistageintec.v11i3.1977>
- Chakraborty, P., Mittal, P., Gupta, M. S., Yadav, S., & Arora, A. (2021). Opinion of students on online education during the COVID-19 pandemic. *Human Behavior and Emerging Technologies*, 3(3), 357–365. <https://doi.org/10.1002/hbe2.240>
- Chennat, S. (2014). Internship in Pre-Service Teacher Education Programme : a Global Perspective. *International Journal of Research in Applied, Natural and Social Sciences*, 2(11), 79–94.  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.684.9334&rep=rep1&type=pdf>
- Coman, C., Țîru, L. G., Meseșan-Schmitz, L., Stanciu, C., & Bularca, M. C. (2020). Online teaching and learning in higher education during the coronavirus pandemic: Students' perspective. *Sustainability (Switzerland)*, 12(24), 1–22.  
<https://doi.org/10.3390/su122410367>
- Davis, N. E., & Roblyer, M. D. (2005). Preparing teachers for the “schools that technology built”: Evaluation of a program to train teachers for virtual schooling. *Journal of Research on Technology in Education*, 37(4), 399-409.
- Donitsa-Schmidt, S., & Ramot, R. (2020). Opportunities and challenges: teacher education in Israel in the Covid-19 pandemic. *Journal of Education for Teaching*, 46(4), 586–595.  
<https://doi.org/10.1080/02607476.2020.1799708>
- Dubey, D. B., & Singh, D. S. (2020). Perception of teachers on online teaching in higher education during covid-19 lockdown. *International Journal of Creative Research Thoughts (IJCRT)*, 8(5), 1017–1022.
- Gurung, S. (2021). Challenges Faced by Teachers in Online Teaching during the Pandemic. *Journal of Education and Practice*, 9(1), 8–18. <https://doi.org/10.7176/jep/12-2-06>
- Hassan, M. (2020). Online teaching challenges during COVID-19 pandemic. *International Journal of Information and Education Technology*, 11(1), 41–46.  
<https://doi.org/10.18178/ijiet.2021.11.1.1487>
- Huu Nghia, T. Le, & Tai, H. N. (2019). Preservice teachers' experiences with internship-related challenges in regional schools and their career intention: implications for teacher

- education programs. *Journal of Early Childhood Teacher Education*, 40(2), 159–176.  
<https://doi.org/10.1080/10901027.2018.1536902>
- Kamal, T., & Illiyan, A. (2021). School teachers' perception and challenges towards online teaching during COVID-19 pandemic in India: an econometric analysis. *Asian Association of Open Universities Journal*, 16(3), 311–325.  
<https://doi.org/10.1108/aaouj-10-2021-0122>
- Khan, M. A., Vivek, Nabi, M. K., Khojah, M., & Tahir, M. (2021). Students' perception towards e-learning during covid-19 pandemic in India: An empirical study. *Sustainability (Switzerland)*, 13(1), 1–14. <https://doi.org/10.3390/su13010057>
- Kulal, A., & Nayak, A. (2020). A study on perception of teachers and students toward online classes in Dakshina Kannada and Udupi District. *Asian Association of Open Universities Journal*, 15(3), 285–296. <https://doi.org/10.1108/aaouj-07-2020-0047>
- Mailizar, Almanthari, A., Maulina, S., & Bruce, S. (2020). Secondary school mathematics teachers' views on e-learning implementation barriers during the COVID-19 pandemic: The case of Indonesia. *Eurasia Journal of Mathematics, Science and Technology Education*, 16(7). <https://doi.org/10.29333/EJMSTE/8240>
- Mathur, A., & Thomas, S. (2021). *The Challenges and Glitches Faced by Teachers of Central India during Lockdown and Solutions Turkish Journal of Computer and Mathematics Education Research Article*. 12(12), 144–151.
- Mohebi, L., & Meda, L. (2021). Trainee Teachers' Perceptions of Online Teaching During Field Experience with Young Children. *Early Childhood Education Journal*, 49(6), 1189–1198. <https://doi.org/10.1007/s10643-021-01235-9>
- Moreno-Guerrero, A. J., Aznar-Díaz, I., Cáceres-Reche, P., & Alonso-García, S. (2020). E-learning in the teaching of mathematics: An educational experience in adult high school. *Mathematics*, 8(5). <https://doi.org/10.3390/MATH8050840>
- Pandit, D., & Agrawal, S. (2021). Exploring Challenges of Online Education in COVID Times. *FIIB Business Review*, 1–8. <https://doi.org/10.1177/2319714520986254>
- Rao, T. S. (2020). Mathematics Online Teaching-Learning Methods, Advantages and Challenges during Covid-19: A Critical Study on Teachers and Learners. *Educational Quest- An International Journal of Education and Applied Social Sciences*, 11(3), 175–181. <https://doi.org/10.30954/2230-7311.3.2020.4>
- Rosalina, E., Nasrullah, N., & Elyani, E. P. (2020). Teacher's Challenges towards Online Learning in Pandemic Era. *LET: Linguistics, Literature and English Teaching Journal*, 10(2), 71. <https://doi.org/10.18592/let.v10i2.4118>

- Sangeeta, & Tandon, U. (2021). Factors influencing adoption of online teaching by school teachers: A study during COVID-19 pandemic. *Journal of Public Affairs*, 21(4), 1–11.  
<https://doi.org/10.1002/pa.2503>
- Shah, S. & Jani, T. (2020). Online education in India: issues and challenges. *International Journal of Multidisciplinary Educational Research*, 7(4), 67–71.  
<https://doi.org/10.36713/epra1013>
- Theelen, H., Willems, M. C., van den Beemt, A., Conijn, R., & den Brok, P. (2020). Virtual internships in blended environments to prepare preservice teachers for the professional teaching context. *British Journal of Educational Technology*, 51(1), 194–210.  
<https://doi.org/10.1111/bjet.12760>
- Waters, S., & Russell, W. B. (2016). Virtually Ready? Pre-service teachers' perceptions of a virtual internship experience. *Research in Social Sciences and Technology*, 1(1).  
<https://doi.org/10.46303/ressat.01.01.1>
- Yohannes, Y., Juandi, D., Diana, N., & Sukma, Y. (2021). Mathematics Teachers' Difficulties in Implementing Online Learning during the COVID-19 Pandemic. *Journal of Hunan University Natural Sciences*, 48(5), 87–98.  
<http://jonuns.com/index.php/journal/article/view/581>