



A Study On Prospective Teachers In Developing And Evaluating A Teacher Innovator Competence Program

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ABSTRACT

An innovator is an individual with a creative and proactive mindset, capable of initiating, learning, and implementing novel ideas that have never been developed before. In a learning society, individuals who can think creatively and introduce new concepts play a crucial role. Teachers, as educational leaders, must develop innovative skills to enhance learning environments. Innovator teachers not only guide students but also initiate, invent, and develop new educational methodologies. They must be capable of designing solutions to address teaching and learning challenges, ensuring a learner-centered education system that adapts to the evolving needs of students. This study aimed to (1) develop an Innovator Competence Enhancement Program for teachers, and (2) evaluate its appropriateness, feasibility, and usefulness. The research was conducted in two phases. Phase 1 focused on developing the Innovator Competence Enhancement Program, with seven experts selected through purposive sampling, and data collected using semi-structured interviews. Phase 2 evaluated the appropriateness, feasibility, and usefulness of the program using an expert panel discussion based on the Connoisseurship approach, involving nine experts. The research instruments included semi-structured interviews and rating scales, with data analyzed through content analysis, descriptive interpretation, mean calculation, and standard deviation analysis.

Keywords: Innovator competence, innovator, innovator teacher, assessment, development program

1. Introduction

The coronavirus disease 2019 (COVID-19) pandemic abruptly impacted schools and disrupted education in South India, causing school closures and delayed openings (Ministry of Education, 2021). With the help of digital technology, school-based education underwent a radical transition during the pandemic, shifting from traditional classroom instruction to a digital environment. Teachers were faced with the unanticipated and urgent transformation of teaching methods from conducting face-to-face classes to emergency remote teaching (ERT)—an alternative approach to instruction due to crisis (Hodges, Moore, Lockee, Trust, & Bond, 2020). Without previous experience in ERT, most teachers were hindered by several factors during the pandemic, such as inadequate digital skills, a lack of technology integration in a remote context, insufficient digital infrastructure in schools and homes, insufficient online learning resources, and government restrictions, including social distancing or school closures. Despite the pandemic, teachers were obligated to continue teaching their students, even with a lack of readiness or a systematic teaching and learning approach. To ensure learning continuity for the country's 5.34 million students, the Indian government decided to conduct online education in elementary, middle, and high schools beginning April 9th, 2020 after the resumption of classes was repeatedly delayed (Ministry of Education, 2021). With upgraded infrastructure and a critical national education system to enable online education, the government also encouraged teachers to share educational resources and information with their peers. The official provision of online education was conducted through pilot schools, teacher support websites (e.g., School-On and Teacher-On), and the "Community of 10,000 Representative Teachers" (Ministry of Education, 2021), which are communication platforms for sharing teaching information, programs, and best practices. While the government was quick to

respond to the impact of COVID-19 on education by providing a sustainable solution, there was confusion among teachers in charge of classes and curriculum management. The confusion was due to media announcements of changes in scheduling and teaching methods before official notices were even sent to schools. There was also a lack of learning content and teachers did not have sufficient experience in conducting online education with the appropriate software and hardware for each subject (Cho, Kwon, & Yang, 2020; Jeong, 2020; Kim, 2020; Yang, Cho, & Yoo, 2020).

In this study, we explore how teachers' communities of practice facilitated the exchange of knowledge and skills in using digital technologies for online education during the transition to ERT. We then investigate whether and how teachers' online education experiences during the pandemic continue to influence face-to-face teaching practices. After reviewing prior literature and conducting a qualitative analysis of interviews with five teachers, we present the findings and suggest implications for teacher education research and practice in the post-COVID-19 era.

2. Objectives of the study

1. Ability to understand the innovative method which had used during COVID-19
2. Ability to understand the innovative evaluation which had taken place during COVID-19

3. Hypothesis of the study

1. There is a significant difference between traditional method and innovative method of teaching.
2. There is a significant difference between evaluating the innovative method of evaluation process.

4. Literature Review

During the early days of COVID-19, teachers were expected to shift to online education according to the government's mandate. However, as they were expected to adapt quickly, they could not thoroughly prepare and develop the professional skills necessary to adopt a new form of teaching when classes resumed online. Importantly, they needed to be familiar with new teaching methods, learn how to use digital technologies more effectively for teaching and learning, and adapt their teaching techniques to a changing educational environment (Lawless & Pellegrino, 2007). However, the inadequate integration of digital technologies in online education may lead to underperformance by teachers. Therefore, for successful technology integration and practical teaching and learning, it was necessary to attain technological pedagogical content knowledge (TPACK). TPACK is a form of theorized knowledge that emerged as teachers combined their technological, pedagogical, and content knowledge in teaching using digital technologies (Mishra & Koehler, 2006). Engagement in a community of practice helps teachers rapidly enhance their knowledge and skills for online education. A community of practice is a group of people who share a concern for something they do and interact with others to learn how to do it better (Lave & Wenger, 1991; Wenger, 1998). As a practice-centered approach, a community of practice assumes that learning is distributed among community members who have diverse expertise and can influence each other with their actions (Buysse, Sparkman, & Wesley, 2003). Members frequently interact with each other (e.g., novices and experts), share information, foster learning, and solve problems. They also mentor apprentices and form collaborations to enhance their skills in formal and informal settings (Buysse et al., 2003; Li et al., 2009). Communities of practice can be an effective method for overcoming the difficulties of integrating technologies in instruction (Hanson-Smith, 2006). For the past decade, the progressive school reform movement of Private schools in India has laid the foundation for teachers' learning communities to take root (Sung & Lee, 2018). Private schoolteachers have developed a professional learning community, on which they formed a democratic and collaborative school culture (Park & Fang, 2019). Thus, Private schoolteachers are more collaborative as they engage in professional learning communities when confronted with sudden challenges like COVID-19. Previous studies reported that many teachers organized communities of practice to enhance their knowledge and skills in conducting online education during the pandemic. It was found that teachers' collective professionalism and capacity-building was facilitated by engaging in such communities during the pandemic (Alsaleh, 2021; Kim et al., 2021; Zaalouk et al., 2021). To understand teachers' experiences in communities of practice during the pandemic in India, we reviewed articles reporting the results of elementary and middle school teachers' community activities during school closures and online education in 2020 and 2021. Prior studies described how schools and teachers reacted to the crisis, including external demand for immediate and adaptable responses and implementation, teachers' responsibilities and enthusiasm, working with colleagues to overcome emotional obstacles, sharing teaching practices and information in a remote context, connecting with colleagues and teachers from other schools, and building online and offline communities of practice (Che & Lee, 2020; Cho et al., 2020; Jeong & Youn, 2020; Jeong, 2020; Kim, 2020; Lee, 2020).

First, teachers were demanded to act immediately and adapt to the changing curriculum to guarantee students' right to learn. The education legislation mandates that primary and secondary schools in India must have 190 school days. As public officials, teachers try to ensure the curriculum meets the mandatory number of school days and abides by all the requirements. However, the COVID-19 pandemic raised concerns about the postponement of the curriculum due to a lack of online education preparedness amid school closures. In February 2020, the government allowed schools to shorten the mandatory number of days up to 10% of what

was mandated. Further, teachers felt that they had been the driving force behind emergency teaching through their sense of duty and responsibility in guaranteeing students' right to learn. With their lack of online education capabilities during school closures, they agreed to adopt ERT and use online education resources, since traditional in-person instruction was largely impossible. Furthermore, students' right to learn in education law should be guaranteed by schools (Che & Lee, 2020). Second, teachers accustomed to teaching in the classroom overcame their fear and anxiety of conducting classes fully online with their colleagues (Cho et al., 2020; Yun et al, 2021). Most teachers faced a sudden change in teaching methods and class management without previous experience, instructional plans, content, or platforms. To cope with these constraints, teachers had to act as frontline practitioners in four representative ways: (1) by following guidelines from the local education office, (2) by having discussions with teachers in each subject or those in the same grade-level at school, (3) by communicating with personal networks in other schools, and (4) by engaging in official teacher communities supported by the Ministry of Education or Regional Offices of Education. Teachers reported experiencing the following emotional states while preparing for and accepting the need to conduct online education during the pandemic: (1) nervousness about their unfamiliarity with online education platforms or content being revealed to their colleagues, students, or parents, and (2) dissatisfaction with being notified of sudden changes by local governments or the Ministry of Education about the status of the pandemic. Notably, in demonstrating their best practices for coping with the situation, senior teachers who were less familiar with online education first shared their knowledge and skills, then made efforts to learn from others, creating a collaborative atmosphere. All teachers promoted online education together during school closures. Third, teachers promptly organized communities with other teachers unfamiliar with online education, sharing how to plan the curriculum for each subject, apply instructional methods, interact with and receive feedback from students, and evaluate student performance (Lee, 2020). They also actively communicated with other teachers from distant schools to learn and share effective teaching practices (Che & Lee, 2020). Many reports on teacher behavior during the pandemic asserted that most of them had built communities of practice. Predominantly, they aimed to learn how to use or where to find resources for online education due to the urgent need to plan the curriculum and continue teaching. Fourth, after familiarizing themselves with emergency online education, teachers attempted to innovate their teaching practices and develop professionally (Jeong, 2020; Kim et al., 2021). They applied the newly learned strategies from colleagues and utilized online resources. Teachers' online education experiences seem to have forced them to develop professionally at a faster pace. For in-service teachers, curriculum-based training was replaced by hands-on practice-based learning in communities of practice. Teachers' technology acceptance and integration cannot be quickly enhanced because they need sufficient TPACK for teaching using digital technologies. However, the pandemic shortened the time needed for them to accept and integrate technology in their teaching methods, and their experience appeared to be successful.

3. Methods

3.1 Participants Five experienced teachers were interviewed for this study—four from elementary schools and one from middle school—who taught at schools located in five different regions in South India. They were the main source of information for exploring how teachers coped with the pandemic, and more importantly, the role of teachers' learning communities. Purposive sampling was employed in the interview planning stage. Four participants had more than 20 years of teaching experience. Three worked at Private schools during the 2020 and 2021 academic years. Table 1 presents the detailed background information of the participants.

3.2 Data Collection

A literature review on teachers' responses to government decisions and their experiences in implementing online education helped us develop the interview questions. One-on-one semi-structured interviews were conducted online in May of 2022 to fully capture participants' individual experiences during the pandemic. Each interview lasted about one hour. During the interview, follow-up questions and clarifications were raised to the participants to obtain additional information. The interview questions were as follows:

- (1) Recall the start of the 2020 academic year when the COVID-19 pandemic abruptly struck the country. What did you do at the school- and individual teacher-level when the shift to emergency remote teaching was announced by the government?
- (2) In 2021, most schools in India provided in-person instruction parallel to online instruction. How did you deal with the in-person and online instruction? How did you carry out blended instruction?
- (3) When you had to switch to online classes, how did you acquire the technological skills, learning content, etc.?
- (4) Do you agree that a professional learning community was an effective strategy for teachers to overcome the pandemic and its challenges? Were there any other strategies?
- (5) How was the professional learning community operated during the COVID-19 crisis? In addition to your own experience, please let us know of other teachers' experiences if you are aware of any.
- (6) As of now in 2022, all schools in India fully provide in-person instruction. How is your online teaching experience utilized in the current face-to-face instruction? (7) How do you expect your online education

experience, knowledge, and skills that were upgraded in the past two years to contribute to the innovation of teaching practices?

(8) Do you still engage in professional learning communities until now?

3.3 Data Analysis

Our analysis focused on participants' experience of teacher engagement in professional learning communities in response to the COVID-19 crisis. Specifically, we attempted to find answers to the following questions: What did teachers do during the transition to ERT? How did they respond to the urgent demands of online education collectively? What kind of innovative teaching practices did they implement? How did their online education experiences influence in-person instruction? What are the future prospects of teachers' learning communities in the post-COVID-19 era? For data analysis, we read the transcripts repeatedly and used multiple coding cycles (Saldaña, 2015). After conducting open coding, we labeled the information, perceptions, and meanings and grouped similar ones to generate the following key themes: connectivity, collaboration, innovation, and transformation. These themes guided us in answering the research questions.

4. Findings

4.1 Seeking Connectivity in a Remote Context When teachers were informed that the 2020 academic year would start online due to the pandemic, they began to search for alternative ways to reach students whom they ordinarily met in person. Some made phone calls to students and parents just to make certain of their presence. In this section, participants' names are abbreviated as T1 for Teacher 1, T2 for Teacher 2, and so on. We wondered how students and parents would feel about not being able to go to school and thought we had to listen to them. So, we made phone calls to each student and parent to let them know of our (teachers') presence (T3). All schools had to first decide on a communication platform, which they quickly adopted to communicate with students. The government provided three types of online classes: real-time interactive, content-oriented, and task-oriented. In Spring 2020, most public schools opted for content- or task-oriented classes and the participants' experience was no different. In the fall semester of 2020, some public schools, particularly Private schools, started to employ real-time interactive classes (T1, T3, T4) for reasons ranging from the influence of private schools' advanced provision to teachers' enthusiasm in ensuring student learning. After a few months of adapting to the digital education environment, teachers in general schools gradually felt comfortable with non-interactive online education because a lecture video and homework sheet were enough to form a class. However, our schoolteachers wanted to make sure that students learn what they should learn. So, we started real-time classes ahead of other public schools (T4). Faced with an unprecedented transformation to online education in all schools across the country, teachers sought assistance beyond their own school. Teachers who were well-experienced in integrating technology into methods of instruction started to share their know-how and online learning resources. T2 is a representative teacher who uploaded lecture videos using a digital textbook. I started to think of what teachers would need in this urgent situation. So, I made instructional video clips and uploaded them on my YouTube channel. I had about 1,000 followers in 2020 and 800 were added in 2021. The COVID-19 pandemic gave me a chance to be a content creator (T2).

4.2 Sense of Unity and Collaboration Within a Same-grade Learning Community The elementary school participants, T1–T4, unanimously agreed on the effectiveness of engaging in a same-grade teacher learning community in school. The teachers' experiences in their community of practice based on grade-level reminded them of the saying "In unity, there is strength." Private schools continued to run professional learning communities before the COVID-19 crisis. That is, we were accustomed to meeting regularly with colleagues to revise and reconstruct the curriculum. The COVID-19 pandemic provided a much greater challenge for us to consider online education. We first selected learning content suitable for online education and in-person instruction. Each teacher took charge of specific subjects and created learning content in advance. In our community of practice, we reviewed the content together and enhanced its quality. Thanks to COVID-19, we could create collective intelligence by engaging in the same-grade learning community (T1). Professional learning communities based on grade-level were very active, not only in Private schools, but also in general elementary schools where such learning communities were perfunctory before the pandemic. T2, who was a lead teacher for fourth graders at a general elementary school, said that activities in the same-grade community of practice had upgraded the quality of online instruction.

5. Discussion and Implications

Our findings suggest that Indian teachers collectively responded to the COVID-19 crisis by actively engaging in professional learning communities within or out of school, both online and offline. Collaboration was a necessity for teachers to continue teaching and guarantee students' right to learn during the pandemic. As mentioned by Hargreaves and Fullan (2020), the pandemic accelerated collaborative professionalism in places where it already existed, such as in India's Private schools. Even in general schools, teachers voluntarily organized communities of practice to conduct online education because it was impossible for them to face the enormous challenges posed by the pandemic. Thus, most teachers experienced the power of collaboration by engaging in various learning communities, and their knowledge and skills in online education were also

enhanced. With two years' worth of online education experience, teachers are now more confident in utilizing technological skills in teaching. Some even attempt to innovate their current face-to-face teaching practices. Although some teachers have reverted to past teaching practices, their teaching methods will not be exactly the same as it was pre-pandemic. Teachers' ability to integrate technology into their teaching practice has already been enhanced. Within a short period of time, Wi-Fi has already been installed in almost all classrooms. Hence, students, parents, principals, and policymakers will have higher expectations about innovative teaching practices. That is, there seems to be sufficient conditions for innovation in teaching practices to persist and prosper. However, innovation cannot immediately happen under such conditions alone. The willingness and enthusiasm of teachers to support innovation through collaborative professionalism is also necessary. Times of crisis seem to offer an opportunity for the culture of individualism among schoolteachers (Lortie, 1975) to change. Teachers who experienced the inevitability of collaboration in order to overcome the pandemic, recognized the value of community. Once teachers internalize the value of collaboration and collective professionalism in practice, they are likely to diffuse what they learned and consistently commit themselves to collaboration. The importance of teachers' collaborative approach in overcoming crises and turning them into opportunities for innovative teaching practices offers the following implications. First, pre-service teachers should start engaging in communities of practice on technology integration, including online education, early during their enrollment in teacher preparation programs. Furthermore, pre-service teachers should more holistically and systematically improve their communication and collaboration skills based on courses and curricula. It is necessary that they know how to professionally communicate and work with other teachers to pursue the same goal in their communities.

6. Conclusion

This study examined teachers' adaptation to implementing online education during the COVID-19 pandemic, focusing on the role of teachers' learning communities. The importance of collective professionalism was highlighted, using the case of South India. We found that teachers overcame the challenges brought by the pandemic by collaboratively engaging in communities of practice, in line with prior literature. This study contributes to prior research on the importance of teacher collaboration, adding that pandemic-based teaching practices are unlikely to disappear as teachers continue innovating them by participating in communities of practice. We expect future studies to report the long-term effects of the pandemic on teachers and teaching in schools.

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