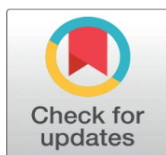


PEDAGOGY OF ONLINE EDUCATION IN TEACHER EDUCATION COLLEGES DURING COVID 19 PANDEMIC

Dr. Padma Priya P V  

¹ Assistant Professor in Education, N.S.S. Training College, Pandalam (affiliated to University of Kerala), Pathanamthitta, Kerala, India



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Corresponding Author

Dr. Padma Priya P V,
padmapriyaparameswaran@gmail.com

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ABSTRACT

The COVID 19 pandemic has wreaked havoc on education systems around the world affecting approximately 825 million learners. More than 94 percentage of the world's student population has been affected by the indefinite closure of educational institutions. This has resulted in significant changes in every aspect of human life. This paper focuses on the Teacher Education sector; teacher education institutions and the various strategies adopted by teacher educators to tide over an unplanned and forced shift from face to face to online education. Teacher educators had to envisage new learning environments for student teachers, the prospective teachers, taking into account the requirements of teacher education programmers' as well as the conditions in which both the universities and schools have to function. This paper intends to examine the various forms of online teaching modes adopted by colleges of teacher education, affiliated to different universities of Kerala state during covid-19 pandemic and throws light on the effect of conducting practice teaching sessions through online mode in enhancing teaching competencies among student teachers. The method adopted for the present study is the Normative Survey method in which the perception of 50 teacher educators were taken into account and samples were selected through random sampling technique. The findings of the study clearly give notions regarding the various online teaching modes adopted by teacher education colleges during COVID19 Pandemic like, Google meet, zoom, slack, Cisco, WebEx, and configurable cloud-based learning management solutions like Moodle, Skype, and big blue button as well as the challenges faced by student-teachers while conducting practice teaching sessions through online mode. Analysis of the data makes it clear that among the selected 7 core teaching skills and their components skills, acquisition of skill of stimulus variation, skill of probing questions and skill of reinforcement were not effective when student- teachers practiced the same through online mode as per the perception of teacher- educators. At the same time, acquisition of skill of introduction, skill of explaining, skill of illustrating with examples and skill of achieving closure were very effective according to the perception of teacher educators.

Keywords: Online Education (Teaching- Learning), Teaching Skills- Stimulus Variation, Questioning, Reinforcement, Skill of Explaining, Pedagogy, Teacher Education, COVID 19

1. INTRODUCTION

The COVID-19 pandemic caught us unawares and the government of India had no other option but to declare a total lock down. Sad to say, schools and colleges had to be closed indefinitely by the end of March 2020. School and college going students were the worst affected. Despite the fact that schools were (class 10th and class 12th) partially reopened later in October, stringent restrictions remained in place and any forecast as to when the closure would be totally lifted appeared to be speculative. Teachers and students had to quickly adapt to online lessons as a result of the

closure of educational institutions. The abrupt, unplanned, and “forced” change from face to face to online teaching created a number of obstacles and limitations as well as opportunities that must be considered positive. Teachers had considerable hurdles in adapting to online teaching while also maintaining a basic level of communication with students and supporting their learning and development. However, it is unclear as to what extent teachers have overcome the obstacles. Consequently, this raises questions about how instructors’ competency and their opportunities to acquire digital skills contribute to teachers’ responses to specific challenges. It also questions whether teachers and students can effectively utilize digital tools in online teaching to compensate for the setbacks caused by lockdowns. Moreover, in the COVID-19 context, apart from technological integration skills, there’s a need for community-building social skills, expertise in language teaching, creative teaching abilities, and the development of a distinctive online teaching style.

Online education during COVID-19 pandemic has posed formidable obstacles for teachers, forcing them to adjust to teaching online since March 2020; a typical school day consisted of pupils arriving in classrooms according to the fixed schedule and teachers covering the standard curriculum of their disciplines, often through face-to-face interaction. Students were expected to pay attention to their teachers, work collaboratively in groups, and mostly reproduce their knowledge in exams. Teachers, students and parents were all confronted with a new situation as a result of this school lockdown. Alternative methods of education were the only way to keep teaching and learning going. Integration of ICT into the curriculum is a critical problem as evidenced by many teacher education programmes throughout the world [Buabeng-Andoh \(2012\)](#), [Russell & Finger \(2007\)](#). Teachers had to adapt to online teaching, necessitating the use of various digital tools and resources to address challenges and introduce novel teaching and learning methods. Beyond achieving educational objectives and aiding students in societal integration, teachers were also expected to sustain a rapport with their students.

2. ONLINE TEACHING PLATFORMS IN COLLEGES OF TEACHERS EDUCATION

Elearning resources played a crucial role in assisting colleges and universities during the pandemic by ensuring continuous support for student learning, even during complete shutdowns. When adapting to new circumstances, it's important to assess and provide support for the preparedness of both staff and students. Many students have faced challenges in effectively adapting to changes in their home or living environment due to psychological and emotional stress.

Some of the challenges are poor network connectivity, lack of engagement, interruptions, one-sided learning [Hasan & Hassan \(2020\)](#), [Naik et al. \(2021\)](#), [Simamora \(2020\)](#). The use of appropriate and pertinent pedagogy for online education may be influenced by the exposure of educators and students to information and communication technologies. Integrated dialogue and platforms for collaboration such as Google Classroom, Canvas, Blackboard, and Microsoft Teams have been utilised to create training programmes, instructional materials, and skill development initiatives [Morrison & Sepulveda \(2020\)](#). They have functions including file storage, video conferences, and office chat, all of which support the productive and orderly operation of classrooms. Usually, they permit us to share a large range of files, such as Word, Excel, PDF, Audio, and Video. Most of the Teacher Education Colleges affiliated to different universities of Kerala have adopted Flipped classroom approach for presenting learning materials before class, such as articles,

prerecorded films, and YouTube links. The time spent in an online classroom is then used to further comprehension by engaging in discussions with teachers and peers. The various platforms used in virtual classrooms are Videoconferencing conducted through

- Google Meet
- Zoom
- Slack
- Cisco
- WebEx and configurable cloud-based learning Management Platforms such as
- Moodle
- Skype
- Big blue button is also used in virtual classrooms.

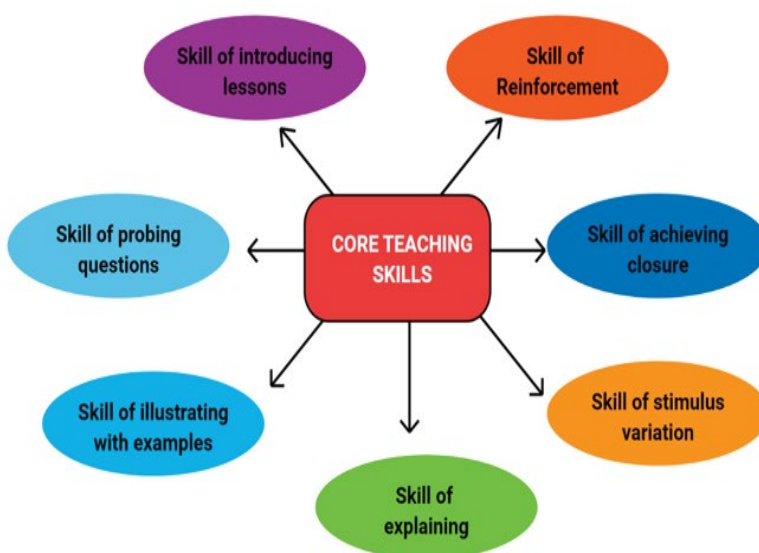
2.1. TEACHER COMPETENCE/TEACHER SKILLS

The art of teaching is the fusion of creativity, science, art, and knowledge. A teaching skill is a group of related behaviours or instructional actions that are carried out with the goal of assisting students in learning and that have a specific objective in mind.

13 skills are described by Dr. Passy [Passy \(1976\)](#).

- 1) Creating educational goals
- 2) Outlining the course
- 3) Inconsistency in inquiry
- 4) Inquiring inquiries
- 5) Clarifying
- 6) Presenting instances to support
- 7) Quietness and nonverbal indicators
- 8) Variation in stimuli
- 9) Strengthening
- 10) Increasing student involvement
- 11) Using a whiteboard
- 12) Reaching a conclusion
- 13) Identifying the behaviour of attendance

During the microteaching phase, a student teacher can only practise a limited number of selected skills, despite the fact that all skills are crucial and require practise. In this paper the investigator has focused on 7 core teaching skills namely,



3. TEACHER EDUCATION: - PRACTICE TEACHING/INTERNSHIP DURING COVID19 PANDEMIC

Pedagogies utilized in in-person instruction cannot always be seamlessly transferred to online learning. Despite the existence of numerous pedagogical approaches tailored for online and remote education, it is imperative for student teachers or educators lacking technological proficiency to undergo adequate professional development and training. According to Konig, Biela, and Glutsch, ICT tools, especially digital teacher competency and opportunities for teacher education to acquire digital competence, are essential for adapting to online teaching."

Konig et al. (2020). Teachers and students must participate in school or government sponsored training programs on a regular basis. It is necessary to analyze the obstacles that stand in the way of embracing online learning and to take remedial action to overcome them Priyadarshani & Jesuiya (2021). Authentic assessments and timely feedback are critical parts of the learning process. The availability of helpful formative evaluations and fast feedback to online learners is a critical component of online distance learning. The study of the Influence of the COVID 19 pandemic on teaching and learning conducted by Pokhrel & Chhetri (2021) indicates that all nations should develop the most appropriate pedagogy and diverse online teaching learning platforms for teacher education colleges. Higher education institutions must offer learners trainings, opportunities for professional development for instructors, and technical support for content development in order to meet the challenges of online education Kebritchi et al. (2017).

Practice teaching and internship are the core of every teacher education programme Aglazor (2017), and in this pandemic period these programs had to be conducted through online platforms such as Google classrooms, Google meet, Zoom, and social media such as Telegram, Messenger, WhatsApp and Web chat. Teacher Trainees have completed their internship by conducting Google meet with school children, Peer teaching and through recorded classes. In this paper the researchers have explored the methods and challenges encountered by teacher education institutions as well as how this pandemic would impact the educational scenario in the future especially the mastery of teaching competencies by the prospective teachers.

4. LITERATURE REVIEW

The literature review's goal is to investigate how teaching changed in the teacher education scenario during the COVID-19 pandemic. [Hatip \(2020\)](#) describes several problems of online teaching and learning, teacher and student competencies to use technology are still weak and learning facilities and the internet are not evenly distributed, they pointed out that blended learning and distance learning will be a necessity to meet the future of education.

The need for an all-encompassing perspective on online education pedagogy that incorporates technology to enhance teaching and learning was emphasised by [Carrillo & Flores \(2020\)](#).

In recent decades, online education has gained much importance all over the world, causing institutions to transform their mentality from "Online class is an Optional" to "Online class is Mandated" [Larreamendy-Joerns & Leinhardt \(2006\)](#)

Although it was initially introduced for faculty development, many institutions use online teaching in their courses without giving it enough thought [Abhinandan \(2018\)](#). Students now have more options for where to enrol in classes because instruction can now be provided online for less money than in a traditional face-to-face classroom [Murday et al. \(2008\)](#).

A study conducted by [Mishra et al. \(2020\)](#) at Mizoram University pointed out that the government of India has started thinking gravely on online teaching/learning in higher education institutions with emphasis on ICT and the use of online education as the part of compulsory teaching learning process at tertiary level. Some of the steps taken by India government are, Study Webs for Young Aspiring Minds (SWAYAM), Annual Refresher

Program In Teaching (ARPIT) launched by MHRD using SWAYAM platform then e-Pathshala jointly run by the Ministry of Human Resource Development (MHRD) and NCERT). The National Council for Educational Research and Training will provide high-quality curriculum based interactive e-content. The University Grants Commission demands all the universities in India to complete the 25 percentage of syllabus through online teaching mode and 75 percentage through face-to-face interaction. So, the educational scenario of the post-COVID 19 outbreak would not be easy to manage teaching learning situations without using online teaching platforms regularly.

According to a study by Joshi, Amit, and Baskar in 2020 [Joshy et al. \(2020\)](#), higher education institutions in India have implemented several measures to continue education during this pandemic. However, teachers expressed dissatisfaction with the effectiveness of these initiatives. When teaching online, educators encountered numerous challenges, including a lack of technological resources, family obligations, insufficient training, lack of focus and direction, and technical expertise deficits.

"Tam and El-Azar in 2020 [Tam & El-Azar \(2020\)](#) emphasized the necessity of building resilience within our educational systems. They also identified three trends expected to characterize forthcoming transformations: an upsurge in educational innovations, a strengthening of public-private educational partnerships, and a widening of the digital divide."

In the face of COVID 19, the education system's shared vision acknowledged that throughout the pandemic, instructors and students are motivated to modify online teaching learning platforms to meet contemporary educational needs. Positive learning transfer was evident in the ease with which everyone—professors

and students alike—used social media apps like Facebook, Instagram, Twitter, and WhatsApp. This made it easier for people to use online learning environments like Zoom, Cisco WebEx, Google Meet, and others.

There are also some important educational tools available for free download, such as Office 365, Google Classroom, and a much more user-friendly videoconferencing application [FutureLearn \(2020\)](#). According to [Shenoy et al. \(2020\)](#), students are using a variety of online learning platforms, and faculty members have begun the process of adopting new technology during the lockdown. Regarding COVID 19, there was a great deal of fear, anxiety, and trepidation among the faculty and students. They emphasise the benefits of COVID-19 and the ways that the education sector has changed as a result of technology adoption and involving students in a variety of virtual sessions. Different users elicit different feelings and perceptions from faculty members regarding the use of technology and experiences. Even though COVID 19 has created cognitive dissonance in students and the faculty are mind towards various situations they have faced in their day-to-day life in association with the society, family, and teaching and learning.

5. OBJECTIVES

- To find out the various forms of online teaching modes adopted by teacher education colleges during COVID 19 pandemic.
- To find out whether the online teaching modes adopted by teacher education colleges were effective in enhancing teaching competencies among students trainees.

6. METHODOLOGY

The researchers have used both qualitative and quantitative methodologies to study the perceptions of teacher educators regarding online teaching/learning process in the practice teaching session of Teacher Education Colleges affiliated to different universities of Kerala during the lock down period. The method used for this exploratory study is normative survey method. The participants were selected according to their proven expertise and vast experience in the field of teacher education especially online teaching and learning. 50 teacher educators from various teacher education institutions affiliated to different universities of Kerala was the sample of the study. The method adopted for the selection of the sample was simple random sampling technique. It is the randomized selection of a small segment of individuals from a whole population which provides each individual of a population with an equal and fair probability of being chosen. In this study teacher educators from various teacher education colleges affiliated to three different universities of Kerala state, Mahatma Gandhi University, University of Kerala university of Calicut were selected.

The prime objective of the research was to find out the perception of teacher educators regarding the acquisition and mastery of Teaching competencies by student teachers during practice teaching session conducted through online mode, a questionnaire related to core teaching skills and component skills under each core skill prepared and standardized by the investigator was used for collecting the relevant data for the study.

Participants were given Google forms to complete, along with questionnaires, and were told that their answers would remain private. The Statistical Package for

Social Science (SPSS) version 20 was used to analyse the data once they were systematically gathered and documented.

7. RESULTS OF THE STUDY

The analysis of the data was done under the following headings:

Table 1

Table 1 Perceptions of Teacher Educators in the Acquisition of Core Teaching Skills by Student Teachers

Variable	Mean	SD	Rate of mastery of teaching skills		
			High	Medium	low
Skill of stimulus variation	58.4	2.43	10	63	27
Skill of explaining	75.2	4.92	62	27	11
Skill of illustrating with examples	72.1	3.82	59	28	13
Skill of probing questions	52.1	2.67	17	32	51
Skill of introducing a lesson	64.7	5.21	46	28	26
Skill of reinforcement	53.222	4.28	15	38	47
Skill of closure	69.7	3.67	42	31	27

From [Table 1](#), it is clear that there exists a high rate of acquisition of core teaching skills like skill of explaining, skill of illustrating with examples, skill of introducing a lesson and skill of closure. But in the case of skill of stimulus variation, skill of probing questions and skill of reinforcement online platforms were not appropriate as per the perception of teacher educators.

Table 2

Table 2 The Component-Wise Analysis of Rate of Acquisition of Core Teaching Skills

Core teaching skills	Components of Core teaching skills	Rate of mastery of teaching skills		
		High	Medium	Low
Skill of stimulus variation	Teacher movement	10.5	22.1	67.4
	Teacher gestures	12.73	27.4	59.87
	Changes in speech pattern	11.4	31.3	57.3
	Focusing	14.6	29.7	55.7
	Oral visual switching	11.2	17.6	71.2
	Changes in interaction style	10.1	18.7	71.2
Skill of explaining	Co-ordination in statements	54.6	26.7	18.7
	Lack of irrelevant statements	62	24.2	13.8
	Fluency in language	69.7	21.8	8.5
	Correcting links	67.7	19.8	12.5
	Clear beginning statements	58.7	32.1	9.2
	Use of proper words	68.2	18.9	12.9
Skill of illustrating with examples	Choice of medium	64.3	22.4	13.3
	Right method	78.7	18.16	3.14
	Number of examples	62.6	21.8	15.8
	Relevancy of examples	51.2	24.3	24.5
	Understanding concepts	62.1	21.9	16
	Prompting	13.16	21.6	65.24

Skill of probing questions	Seeking further information	12.89	22.8	64.31
	Refocusing	11.46	26.4	62.14
	Redirection	14.5	23.7	61.8
	Increasing critical awareness	12.8	18.9	68.3
Skill of introducing lesson	Previous knowledge	29.2	36.1	34.7
	Proper sequencing	29.8	39.2	31
	Objectives and teaching aids	32.4	36.7	30.9
	Relationship between contents, statements and objectives	28.7	36.6	34.7
	Duration of introduction	26.1	38.7	35.2
	Capability of creating interest and motivation	29.6	39.1	30.5
Skill of reinforcement	Positive verbal reinforcement	14.1	19.01	66.89
	Positive nonverbal reinforcement	11.2	18.62	70.18
	Negative verbal reinforcement	12.6	24.2	63.2
	Negative nonverbal reinforcement	19.6	23.1	57.3
	Extra verbal reinforcement	23.7	21.6	54.7
Skill of achieving closure	Revision	60.1	22.3	17.6
	Recapitulation	59.6	10.08	21.32
	Remarks	62.4	22.1	15.5
	Black board summary	8.6	24.1	27.3
	Home assignment	52.1	19.7	28.3

From [Table 2](#), it is clear from the component-wise analysis of skill of stimulus variation, skill of probing questions and skill of reinforcement that could not be acquired in an effective manner through the online mode of practicing.i.e., without direct interaction with the school students It is difficult to master these core teaching skills by student teachers from the perception of teacher educators. But in the case of skill of introduction, online mode is effective in an average rate. At the same time the component wise analysis of skill of explaining, skill of illustrating with examples and skill of closure could be achieved in a moderate manner via online mode of practice teaching according to the perception of teacher educators.

So, from the perception of teacher educators among the selected 7 Core teaching skills mastery of Skill of stimulus variation, skill of probing questions and skill of reinforcement is not carried out in an effective manner when the student teacher practicethe same in an online mode. But at the same time skill of explaining, skill of illustrating with example and skill of closure, skill of introduction could acquire in an effective manner when a student teacher practices the same in online mode.

The main objective of the study is to find out whether the online teaching methods adopted by teacher education colleges were effective in enhancing teaching competencies among student trainees from the perception of teacher educators. Teacher educators are the persons who observes and evaluates the performance of student teachers in practice teaching session ,so the results of the study clearly states that according to the perception of teacher educators the acquisition of core teaching skills like skill of stimulus variation ,skill of reinforcement and skill of probing questions could not be practiced or attained in an effective manner without direct interaction with students in school setting but at

the same time skill of introduction, skill of illustrating with examples ,skill of explaining and skill of closure could be attained in an effective manner when practice teaching conducted through online mode.

8. DISCUSSION OF RESULTS

In this COVID 19 pandemic period though the popularity of online learning has increased as a competitive option to traditional classroom instruction although, it is not that much effective in acquiring the core teaching skills for a student teacher during their practice teaching period. The present study is an attempt to find out whether the online teaching modes adopted by teacher education colleges affiliated to different universities of Kerala state were effective in enhancing teaching competencies among student trainees, at the at the same time to find out the various forms of online modes adopted and challenges faced by student trainees in practicing teaching skills in virtual classrooms.

The results clearly show that:

- 1) The majority of teacher education colleges affiliated to various universities in Kerala have embraced the flipped classroom strategy to deliver learning material such as articles, prerecorded films and YouTube links before class. The time spent in the online classroom is then used to enhance understanding through interactions with the teachers and peers. This is a very effective method for encouraging problem solving, critical thinking, and self-direction according to the perception of teacher educators. For practice teaching sessions student teachers used various video conferencing services like Google meet, zoom, slack, cisco, WebEx, and configurable cloud-based learning management solution like Moodle, skype, and big blue button. Face to face teaching via Google Meet, recorded class, peer teaching etc were the various modes of practicing sessions.
- 2) Core teaching skills and their components (Passion,1976) were selected for the study among which skill of stimulus variation, skill of probing questions and skill of reinforcement was not effective during the practice teaching session via online mode as per the perception of teacher educators. At the same time student teachers were able to acquire skill of introduction, skill of explaining, skill of illustrating with example and skill of achieving closure very effectively by conducting practice teaching via online mode according to the perception of teacher educators.
- 3) The major challenges faced by student teachers while conducting practice teaching through online mode were internet issues, lack of enough technological gadgets, attendance etc. Similarly, meaningful attainment of conceptual knowledge was also an area of difficulty.

The findings suggest that both the student teachers as well as the teacher educators have been affected by the unexpected changes during practice teaching sessions. Due to school closure, practice teaching sessions were held in the virtual format as against the traditional face to face interaction. In this study 50 teacher educators from various teacher education institutions affiliated to different universities of Kerala state explored the problems, challenges and opportunities of this virtual learning experience. The findings of the study show that elements like the lack of direct engagement with the learners, and a quick change of environment were among the most powerful influences on the participants' learning process. Despite the difficulties, teachers have expressed the hope that virtual learning

experience would help the prospective teachers to improve and master the necessary teaching skills in the long run.

Results and analysis indicate that inadequacy of facilities, infrastructure, technical tools, and internet connectivity, are the most serious disadvantages of holding online sessions. In order to improve current online teaching methods initiatives should be taken by the stakeholders to adopt new digital platforms in educational institutions in order to reach out to a larger number of students and increase the quality of teaching and learning. As mentioned earlier the most significant experience in a teacher education programme is practice teaching by student teachers, which is often based on a country's National Education Policy. Teaching practice is a requisite course for all aspiring student teachers in India who are enrolled in the teacher training programme. Practice Teaching at any higher education institution is a well-structured programme designed to allow aspiring teachers to develop and evaluate their competence in a real classroom within a school setting.

9. CONCLUSION

The COVID-19 pandemic has necessitated nationwide implementation of online learning. The Indian Council of Medical Research has unequivocally stated its inability to forecast how long the pandemic will persist. Consequently, organizations responsible for teacher preparation must continuously update their digital materials and remain abreast of emerging technologies. During the ongoing pandemic, the importance of teacher competency in addressing the unique challenges it brings remains crucial. This topic could serve as a focal point for further study within various teacher education programs. The likelihood of educational institutions returning to regular operations in the near future is highly improbable. If universities and colleges reopen before achieving universal vaccination, the current situation will likely deteriorate.

This paper highlights the most prevalent themes or elements considered pertinent. It delves into a comprehensive explanation of technological, sociocultural, and contextual challenges affecting student teachers' practice teaching and internship in virtual learning environments. Additionally, it examines the impact of online learning on evaluating teaching competencies accurately in an online platform, encompassing aspects such as academic achievement, emotional and sociological factors among student teachers. Furthermore, it explores the implementation and description of various online tools such as podcasts, MOOCs, gamification, and virtual worlds, elucidating their affordances and methods for accurately assessing the completion of teaching competencies within an online environment.

This Analysis indicates several research topics requiring further attention. Greater emphasis should be placed on practical learning aspects, such as the development of digital lesson plans and understanding the impacts of teaching and learning within virtual reality environments. Specifically, more in-depth exploration of pedagogical issues related to these areas is warranted, despite this study's emphasis on teaching competencies in teacher education through online methods. Additionally, there is a need for increased research to evaluate the effectiveness of an integrated pedagogy for online teaching and learning. A broader perspective in conducting research on instructional methods and learning within such settings is imperative.

CONFLICT OF INTERESTS

None.

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