LACUNA IN TEACHER SKILL SET: A STUDY OF TEACHER EDUCATION COURSES DURING THE COVID PANDEMIC IN KERALA STATE

Dr. Chandrasekharan Praveen[*]

ABSTRACT

When the Covid pandemic struck, educational institutions were shut down, and there was an abrupt shift to online education. The data collected from teacher educators and student teachers regarding problems faced owing to the shift to distant online training, revealed that teaching effectively online requires certain skill sets. Carrilo and Flores (2020) in the literature review of Online teaching and learning affirmed that addressing the exceptional changes teachers and students are experiencing in these unprecedented times are necessary. So it becomes imperative to identify missing skill sets and integrate it into the teacher training programme to enable prospective teachers to function effectively when they take up the teaching profession which is likely to follow the hybrid mode of instruction in the coming years. The study aims to identify missing skill sets in teacher educators which affected effective transaction of the syllabus of the Bachelor of Education course during the Covid pandemic compelled distance online pedagogy in Kerala. It also reviews the skills required for virtual training and suggests ways of integrating new skills required for effecting online instruction and training into the traditional teacher education programme. The data for the study was collected through surveys and informal interviews with teacher educators and student teachers. The problems experienced by student teachers compelled to study online were found out through a participant observer study mode where the investigator-cum-teacher educator attempted online teaching of BEd trainees. The survey and informal interviews found that teacher educators require new skill sets which includes online resource hunting and adaptation skills, Grounding skills which help stop the cycle of worry and anxiety and student mental health advising skills. The author hopes that the skills found to be absent and identified in the study will help those at the helm of affairs to provide necessary In-service training to enable teacher educators to acquire the skills. It will also help curriculum developers to identify ways of integrating the new skill sets to the traditional teacher education programme.

Keywords: *BEd Course, Covid Pandemic, Curriculum, Grounding skills, Skill set, Teacher Education.*

Introduction

In recent times, several reports have highlighted the transformational changes which tend to influence the way we work and live. Studies have shown that national and global factors have a significant effect on the nature of our work (Clayton and Harris, 2018). A startling impact of the skill sets referred to in the survey quoted above was particularly felt in the education sector as early as 2020. In fact, the change in the teaching-learning process in higher education institutions generated by the coronavirus pandemic has begun to receive the attention of researchers.

Studies have shown, that following the paradigm shift to online pedagogy, interaction between teachers and students have drastically changed. Coman et al. (2020) for instance found a series of problems related to the use of technology. These include teachers' lack of technical skills and their teaching style improperly adapted to the online environment. This study undertaken by the author, a teacher educator by profession, revealed missing skill sets among teacher educators in the state of Kerala, India during the turbulence caused by the spread of the Corona virus which affected profoundly the lives of teacher educators and student teachers.

---

[*] Formerly Principal, Institute of Advanced Study in Education, Thrissur, Kerala, India.

Background and Rationale for the Study

In 2020, when the Covid pandemic struck, educational institutions were shut down, and there was an abrupt shift to online education. Then, the student teachers of the two year Bachelor of Education (BEd) programmes offered by universities in Kerala, had to depend largely on peer teaching in the virtual mode for the compulsory Internship programme. The data collected from teacher educators and student teachers regarding problems faced owing to the shift to distant online training, revealed that teaching effectively online requires certain skill sets. But strangely enough, these skill sets never received any attention in traditional teacher training programmes. With the Covid -19 pandemic still raging, there is every possibility of an increasing shift to virtual training in the years to come. So it becomes imperative to identify the missing skill sets and integrate it into the teacher training programme to enable prospective teachers to function effectively when they take up the teaching profession which is likely to follow the hybrid mode of instruction in the coming years.

Aim of the Study

The study aims to identify missing skill sets in teacher educators which affected effective transaction of the syllabus of the Bachelor of Education course during the Covid pandemic compelled distance online pedagogy. It also reviews the skills required for virtual training and highlights the need for integrating new skills required for effecting online instruction and training into the traditional teacher education programme.

Research Questions

1.   What kind of problems did teacher educators face with the Covid pandemic compelled online teaching?
2.   What kind of problems did student teachers face when they were taught online during the Covid pandemic compelled online teaching?
3.   What problems did student teachers face when they were directed to complete their internship in the online mode?

Key Terms

- **Skill Sets:** It refers tospecific area of competence, knowledge, experience and abilities required to perform a job. They are invariably developed through one's life and work and often includes Soft skills which are interpersonal in nature, Hard skills which are teachable and Technical skills related to use of technology. In the work place, one makes use of certain job specific skills too.

- **Teacher Skills:** Teachers require a range of skills and they include, Communication skills, Collaborative skills, Creative thinking skills, the skill to adapt, Organizational skill and appropriate work ethics. And to function effectively, teachers need to be knowledgable in the field of education and should possess Content Knowledge, Pedagogic Knowledge and Curricular Knowledge.(Sullivan, 2017)

- **Grounding Skills:** Grounding is a practice that can helps one pull away from flashbacks, unwanted memories, and negative or challenging emotions. (Healthline) Grounding skills help detach oneself from emotional pain by shifting attention to the present moment. When one feels caught up in a cycle of anxiety, grounding technique can help one break that cycle. Grounding skills include deep breathing, mindfulness, guided imagery and progressive muscle relaxation.

Brief Review of Studies

- **On Skill Sets**

Taylor as early as 2005 had affirmed that among youth on the lookout for jobs, there are many who are attitudinally deficient and inadequately prepared to meet the needs of the contemporary economy. Teachers however are supposed to be different and are usually expected to be role models both during their teaching in class and participation in the school services. But a study conducted on 3633 teachers in Indonesia found that only 711 (19.6%) met the required competence for obtaining a professional teacher certificate.(Manihar et al.,2018)

Comyn (2018) discussing the inclusion of skills in the United Nations' Sustainable Development Goals (SDGs), affirmed that, issues rising from continued globalization and the introduction of new technologies, necessitate governments to focus greater attention on training youths to reduce the mismatch in skills and help reduce unemployment. According to the World Economic Forum estimate, 65% entering primary school today will end up working in completely new job types that do not yet exist. (Business Council of Australia, 2017)

- **On Technology Skills**

As per the Australian Industrial Group   survey report (2018), in the age of digitalisation, all workers will need digital skills at various levels and it becomes imperative to prioritize digital technology training and changes.

Cheung and Cable (2017) identified eight principles which form the core of effective online teaching. These include encouraging contact between students and faculty, collaborative learning, quick feedback, active learning, task time—encouraging students to allocate more time for completing tasks, high-expectations—the teacher should communicate their expectations in order to encourage and motivate students, diversified learning, and technology application.

Cox (2019) included 'Adaptability' and 'Understanding of technology' in the list of fifteen professional development skills   for the modern teacher. For, in the digital age, teachers need to be flexible and must be able to adapt to whatever is thrown their waysuch as   changing learning standards and student behaviour. There are also huge advancements in technology, and a modern teacher is expected to know which digital tool is right for the student and pave the way for smooth curricular transaction.

- **On the Effect of the Covid-19 Pandemic**

The unprecedented situation generated by the Coronavirus pandemic and its effect on universities, teachers and students have   become   a subject of great interest for researchers. Jain et al.(2020) studied the   impact of   Covid-19 on school education following a three-gap framework suggested by the US Department of Education in 2017. These included : Access gap (which took into consideration socio-economic status of the school, location and household income); Pedagogical skills and digital literacy gap and Usage gap (which considered the opportunities to use technology actively for both teachers and students).

In the write-up on 'Education Response to Covid-19', the Organization for Economic Co-operation and Development (OECD) made specific mention of certain challenges that universities are likely to face. These included, maintaining an equilibrium between online courses, that could affect students health resulting from spending many hours in front of a screen and the absence of non-digital activities.

Coman etal. (2020) reported about a study involving 424 universities around the world affected by the pandemic. Most universities stated that they had to adopt online learning   and the ability to access technology and teachers' ability to deliver online course were the greatest challenge.

Sun et al. (2020) attempted to study students' experience during online courses. It found that the students expected teachers to know how to transfer online, the information taught in the traditional way.

Carrilo and Flores (2020) affirmed in the literature review of Online teaching and learning that addressing the exceptional changes teachers and students are experiencing in these unprecedented times are necessary.

Pearson's Connections Academy in 2020 identified nine skills that make a great online school teacher. The nine skills identified include 1.Possessing State certification and curriculum expertise 2.Tech skills 3.Teach creatively 4. Be welcoming 5. Make oneself accessible 6. Provide proactive feedback 7. Be encouraging 8. Be adaptable 9. Teach with passion.

- **On Teacher Education**

Kidd and Murray (2020) attempted a study of the effect of the Covid-19 pandemic on teacher education in England with relation to the move of practicum to learning online. They summed up their study with the hope that new possibilities for reframing the traditional practicum will follow leading to exploration of how the creation of such disembodied spaces might engender authenticity for collaborative professional learning at a time when there is no sign of the pandemic abating. Flores and Gago (2020) in their study affirmed that for learning in and through the practicum, the process of exploration will be long and part of 'an on-going adaptation process on the part of all stakeholders'.

Hiranandani (2021) writing for **India Today**, affirmed that we need to implement some new ideas and concepts in the field of teacher training to step their skill set. Training of educators continues to be of prime importance. And to maintain global standards, learning through tie-ups and use of tele-mentoring from resource persons with opportunity to reflect on teaching practices are worth exploring.

Methodology

The population comprised teacher educators teaching the two –year Bachelor of Education course in colleges affiliated to universities in Kerala State. The sample comprised twenty teacher educators with not less than ten years' experience in Government and Private colleges. Data for the study was collected through surveys and informal interviews. Data regarding problems experienced by student teachers were collected by the investigator-cum-teacher educator through a participant-observer study mode by teaching the BEd course during the corona virus pandemic. Secondary data from studies conducted on the effect of the shift to online pedagogy in institutions of Higher Education available online were also made use of.

Discussion and Findings

- The survey and informal interviews found that teacher educators require new skill sets which includes Online resource hunting and adaptation skills, Grounding skills and student mental health advising skills.

- **Online Resource Mining Skills:** Experts surfing the Internet for accessing materials know that not all Browsers take us to all sites and some Browsers skip several useful sites. Further, a knowledge of Boolean Operators are extremely helpful in finding the right material one needs in PowerPoint, Podcast, Video or PDF formats. The survey revealed that many teacher educators did not possess resource mining skills and on several instances they had stopped surfing with the first material they could identify in their search. Teacher educators often downloaded the material they found by typing just the key words, not knowing that still better and useful content are available on the Internet.

- **Content Adaptation Skills:** The survey found that the digital materials were downloaded from several sites on education and employed for teaching online by the teacher educators in formats such as videos, audio podcasts and PDF notes without attempting to adapt or edit them to match the level, interest or learning styles of student teachers. It is common knowledge that e-learning materials are produced by educators for specific learning objectives. The failure to adapt the downloaded materials by matching it with the student teachers' learning needs, resulted in learners finding the material difficult to grasp. This in many instances resulted in a losing of interest which ultimately led to a lowering of the quality of instruction.

- **Grounding Skills:** The survey found that some families of teacher educators, were hit by job loss of family members. Restriction in movement, social distancing and lack of connection with friends led to an acute rise in physical and mental health related issues during the Covid pandemic. It is commonly acknowledged that Grounding skills have several advantages. An analysis of the data collected from the teacher educators revealed the conspicuous absence of Grounding skills which would have helped them to self-adapt and stop the cycle of worry and anxiety that prevailed during the peak of the Covid pandemic.

- Analysis of the data also revealed that the continuous struggle to cope with a new mode of instructional delivery, the isolation from colleagues who would have helped learn as a community began to result in the rise of anxiety and stress which tended to affect the performance of teacher educators. It was also found that a majority of educators who rarely practised yoga were found to be more affected. Absence of Grounding skills resulted in a pronounced inability to take care of oneself and calm and quiet the thoughts. So when caught up in the cycle of anxiety, many teacher educators did not know how to break the cycle.

- **Mental Health Advising Skills:** The data collected from the student teachers revealed that many were dissatisfied with online learning. One obvious reason being that they were accustomed to face to face modelling and instruction, but in the online environment there was no real connection with the teacher educator. The prevailing social distancing norms, the restriction in movement owing to quarantine of affected areas coupled with accessibility and affordability issues regarding online learning only made things worse. Above all, the absence of any real training in teaching online especially during the internship programme created a sense of uncertainty and in many instances negatively affected the mental health of student teachers. These, to a large extent could have been effectively addressed if the teacher educators possessed student mental health advising skills.

- It is a fact, that the sudden switch from face to face to online pedagogy, hardly left teacher educators with adequate time to prepare for any alternative mode of teaching. Significantly enough, the teacher educators were not trained on ways to address disadvantaged learners

in the online environment resulting in an exacerbation of problems related to mental health of student teachers. Here, it is worth recalling the observation of Arvig (2020) about skills teachers need during Covid-19 to address the global health pandemic which brings with it stress, uncertainty and anxiety. It was pointed out that teachers should recognize students' behavioural health concerns that show signs and uncharacteristic traits early. In such instances, a supportive question: "How are things going for you?" can be extremely helpful.

- The study has found that student mental health advising skill is absolutely essential for teacher educators. Here, it is worth noting a solution suggested by Huang et al. (2020) to use social networks to build online communities for students in order to reduce feelings of isolation to optimize learning in special circumstances like the ones created by the Coronavirus pandemic.

- Data collected from the student teachers revealed that teacher educators were not always available while learning. Some of them experienced feelings of isolation owing to the lackof physical presence of the teacher and they were accustomed to learn through modelling by their teacher educator. This then implies that teacher educators need to adapt their teaching strategies to suit student needs in the online learning environment. Perhaps it would be useful to follow the guidelines proposed by Fromichella (2020) to become a better teacher in 2020. Interestingly it mentions three missing skills identified in the present study. These include 1. Using internet, to expand own knowledge base outside of a structured environment by connecting with fellow educators through social media. 2. Prepare students for success outside the classroom 3.Taking care of yourself which implies knowing how to avoid burnout including practising mindfulness, meditating and exercising.

- Technology skills: Studies have shown that the quality of the educational process in the online environment depends on factors such as the level of training that teachers have in using technology, their teaching style, interaction with students, strategies used to capture students' attention, encouraging contact between students and faculty, collaborative learning and technology application. (Tham and Werner, 2005; Nycz and Cohen,2007). The analysis of the data revealed that irrespective of gender and locale, teacher educators were found to experience several difficulties in delivering appropriate online instruction. True, the problems arose primarily because teacher educators were directed to quickly shift to online training. It is a fact that adapting to new teaching conditions require time. But it is still possible to improve the situation by providing necessary training to teacher educators.

- This study then implies that poor online teaching is likely to affect the performance of student teachers. The data collected from the student teachers also revealed that many teacher educators did not really know how to adapt the content mined from websites to match the learner needs or expected learning outcome. It was found that many downloaded content used by teacher educators for online instruction were ones which used a type of language difficult to comprehend and in certain instances were found to be culturally inappropriate too. So it becomes imperative for concerned authorities to initiate concrete actions to improve and optimize the process of online teaching and learning. They have to focus on improving teacher educators' technical skills, offer training to adapt online resources and refine the way they interact with student teachers in an online environment.

- Modern educational practices incorporate active learning strategies, introduce scope for debate and collaborative learning besides opening avenues for fostering critical thinking in learners. An analysis of the data revealed that the teaching style employed by teacher educators while teaching online were strongly tilted towards transmission of knowledge rather than transaction or the much celebrated transformation, characteristic of teaching encounters in colleges of teacher education.

- Discreet inquiries made regarding the performance of trainees revealed that the online internship sessions were more or less mechanical in nature, of poor quality and with little or no scope for demonstrating the series of skills which student teachers master through the Microteaching sessions in the first semester of the teacher training course. It is unsure whether such impoverished experiential learning will reflect poorly on the performance of student teachers when they take up the teaching profession.

- The data analysed and review of studies related to education in the time of the pandemic reveals that a specialized pedagogy needs to be evolved for teacher educators to develop in them the ability to adapt and use for online instruction resources mined from the internet,

develop appropriate 'Grounding skills' and familiarization with strategies for student advising skills for their mental well being and reduction of stress. The study affirms the need to plan and develop strategies to solve the problems teacher educators face. If the problems identified in the study continues to persist, not only will student teachers perform poorly, but in the long run it will affect the very quality of teacher education programmes being offered in the country.

- Teacher educators we know are obliged to develop creative initiatives to overcome the limitations of virtual teaching. Some teacher educators it was found were actively collaborating with one another to improve online teaching methods. The initiative undertaken by the Kerala University English Language Teacher Educator's Forum is a case in point. Doucet et al. (2020) rightly affirms that there are incomparable opportunities for cooperation and finding creative solutions along with a willingness to learn from others and attempt using new tools for teaching online. Such collaborative learning is bound to be useful as the data collected from teacher educators also revealed that some were reluctant to explore new digital tools for effective online instruction.

Review of Research Questions

The study found that many teacher educators were struggling to cope with online pedagogy without any prior training. Often they resorted to a mere 'onlinification' of the traditional class room pedagogy resulting in a complete mismatch of teaching strategy.

The failure to address student needs in the distant mode of learning during the Covid pandemic when many students were experiencing accessibility and affordability issues, along with family related problems began to impair the wellbeing of students.

The kind of experience a student teacher gains from traditional internship programmes in face to face teaching mode under teacher educator supervision with ability to focus on class room management besides exploring several teaching skills is no match for virtual internship.

Limitations

The study has the obvious limitation of collecting data from a very small sample and so it is difficult to fully generalize. More significantly, data related to the effect of the shift to online pedagogy on individual teachers and students hailing from different socio-economic backgrounds have not been shared for the obvious need to maintain anonymity of the teacher educators. Further, owing to the social distancing norms and movement restrictions imposed by authorities with the spread of the Corona virus pandemic, it had not been possible for the investigator to collect data from direct face to face interview.

Implications

The identification of the missing skill set in teacher educators and the negative impact it is likely to have on the quality of instruction of teacher education programmes makes it imperative to provide necessary in-service training. More significantly, there is an urgent need to identify ways of integrating the missing skill sets to the repertoire of skills teacher trainees are expected to acquire during the teacher training programmes. An inclusion of Media Literacy skills in the teacher training programmes may be considered to help address the crisis. This can go well with a special skill acquisition programme focusing on the skills prospective teachers need to navigate in the present and future world of work. The services of Life Skill training professionals may be sought to help develop 'Grounding skills' in teacher educators. The results imply that subject-matter knowledge and communication techniques are vital for the trainers themselves and to address the rise of missing skill gaps among the present generation of teacher educators, those at the helm of affairs have to pin point the likely cause and plug the loop holes in the training programmes now being offered.

For teacher educators already in service short term skill acquisition programmes may be organized. Teacher educators need to be trained to adapt their teaching style for online instruction and familiarize with ways of communicating with student teachers online. Infact, Barron et.al(2021) writing for the World Bank blog about the changing role of teachers and technologies amidst the Covid-19 pandemic, suggested how policy makers can support teachers during the reopening of schools : In order to build stronger education systems countries will need to apply teaching initiatives that have been proven to be effective and integrate them into education systems. They should also empower teachers and invest in necessary skills development and capacity building. Identification of best practices in virtual teacher training has now become absolutely essential.

Future Research

Research on the effectiveness of existing teacher education curriculums vis-à-vis employability and job performance should be undertaken and appropriate modifications should be made in the content-specific instructional knowledge and training methods. Incidentally, Pokhrel and Chhetri (2020) summing up their literature review on impact of Covid-19 pandemic on teaching and learning affirmed that studies on making online teaching creative, innovative and interactive through user-friendly tools are areas for research and development. This is imperative and it would assist and prepare the education system for uncertainties in the future.

Conclusion

While educational institutions remained closed to cope with the global pandemic, institutions of teacher education preparing prospective teachers were deeply affected. The study has revealed that the brick-and-mortar teacher training is essentially different from online training. To be successful online requires specialized training. Besides knowledge of technology, teacher educators should know how to keep student teachers engaged online. In today's virtual classrooms, online teachers play an essential role in supporting student success, and it requires a slightly different skill set than in-person learning.

The study underscores the fact that for teacher educators, skill development and lifelong learning should always continue to receive great attention. The author hopes that the skills found to be absent and identified in the study will help those at the helm of affairs to provide necessary In-service training to enable teacher educators to acquire the skills. It will also help curriculum developers to identify ways of integrating the new skill sets to the traditional teacher education programme.

Perhaps it would be appropriate to conclude this report of the study on lacuna in teacher skill set by quoting a joint statement made by officials of ILO, UNESCO and UNICEF on World Teacher's Day 2020:

"We now need to think beyond COVID-19 and work to build greater resilience in our education systems, so we can respond quickly and effectively to these and other such crises. This means protecting education financing, investing in high-quality initial teacher education, as well as continuing the professional development of the existing teacher workforce".(UNICEF Press Release)

References

1. Arvig, Tyler.(2020). 5 skills teachers need during COVID-19. Available at: https://www.eschoolnews.com/2020/09/11/5-skills-teachers-need-during-covid-19/2/

2. Barron, Maria, Cristobal Cobo, Alberto Munoz-Najar and Inaki Sanchez Ciarrusta.(2021) The changing role of teachers and technologies amidst the COVID 19 pandemic: key findings from a cross-country study Available at: https://blogs.worldbank.org/education/changing-role-teachers-and-technologies-amidst-covid-19-pandemic-key-findings-cross

3. BCA.[Business Council of Australia].(2017). *Future-proof. Protecting Australians through education and skills.* Melbourne: BCA. Available at: https://www.bca.com.au/publications/future-proof-protecting-australians-through-education-and-skills

4. Carrillo, Carmen. & Flores, Maria Assunção. (2020).COVID-19 and teacher education: a literature review of online teaching and learning practices. Available at: https://www.tandfonline.com/doi/full/10.1080/02619768.2020.1821184

5. Cheung, C. & Cable, J. (2017). Eight Principles of Effective Online Teaching: A Decade-Long Lessons Learned in Project Management Education. *Proj.Manag.World J.* 6, 1–16.

6. Clayton, Berwyn. & Harris, Roger. (2018). Editorial: the importance of skills – but which skills?, *International Journal of Training Research*, 16:3, 195-199, DOI: 10.1080/14480220.2018.1576330

7. Coman, Claudiu; Țîru, Laurențiu G.; Meseșan-Schmitz, Luiza; Stanciu, Carmen; Bularca, Maria C. 2020. "Online Teaching and Learning in Higher Education during the Coronavirus Pandemic: Students' Perspective" *Sustainability* 12, no. 24: 10367. https://doi.org/10.3390/su122410367

8. Comyn, Paul John. (2018). Skills, employability and lifelong learning in the Sustainable Development Goals and the 2030 labour market, International Journal of Training Research, 16:3, 200-217, doi: 10.1080/14480220.2018.1576311

9. Connections Academy. (2020). 9 skills that make a great online school teacher. Available at: https://www.connectionsacademy.com/support/resources/article/9-skills-that-make-great-online-school-teacher

10.   Cox, Janelle. (2019).15   Professional development skills for modern teachers Available at: https://www.teachhub.com/professional-development/2019/11/15-professional-development-skills-for-modern-teachers/

11.   Doucet, A., Netolicky, D., Timmers, K., &Tuscano, F. J. (2020). Thinking about pedagogy in an unfolding pandemic (An Independent Report on Approaches to Distance Learning during COVID-19 School Closure). Work of Education International and UNESCO. Available at: https://issuu.com/educationinternational/docs/2020_research_covid-19_eng

12.   Flores, M. A. ,&.Gago, M . (2020). "Teacher Education in Times of COVID-19 Pandemic in Portugal: National, Institutional and Pedagogical Responses." *Journal of Education for Teaching* . doi:10.1080/02607476.2020.1799709

13.   Formichella, Lucien. (2020). 11 ways to become a better teacher in 2020. Available at :https://www.noodle.com/articles/11-professional-skills-needed-to-be-a-teacher-in-2020

14.   Healthline. 30 Grounding Techniques to Quiet Distressing Thoughts Available   at: https://www.healthline.com/health/grounding-techniques#soothing-techniques

15.   Hiranandani, Niranjan. (2021).Why teachers and educators need to be trained in the current education scenario. Available at : https://www.indiatoday.in/education-today/featurephilia/story/why-teachers-and-educators-need-to-be-trained-in-the-current-education-scenario-1798707-2021-05-04

16.   Huang, R.; Tlili, A.; Yang, J.; Chang, T.-W.; Wang, H.; Zhuang, R.; Liu, D.(2020). Handbook on Facilitating Flexible Learning During Educational Disruption: The Chinese Experience in Maintaining Undisrupted Learning in COVID-19 Outbreak; Smart Learning Institute of Beijing Normal University: Beijing

17.   Jain, S., Lall, M., Singh, A. (2020). Teachers' Voices on the Impact of COVID-19 on School Education: Are Ed-Tech Companies Really the Panacea? *Contemporary Education Dialogue*. doi: 10.1177/0973184920976433

18.   Kidd, Warren.& Murray, Jean. (2020). The Covid-19 pandemic and its effects on teacher education in England: how teacher educators moved practicum learning online Available at: https://www.tandfonline.com/doi/full/10.1080/02619768.2020.1820480

19.   Manihar Situmorang, SyawalGultom, Abdul Hamid K, Abil Mansyur Panjaitan & Winsyahputra Ritonga (2018) University-government collaboration model to improve school teacher competence in North Sumatra, Indonesia, *International Journal of Training Research*, 16:3, 249-266, doi: 10.1080/14480220.2018.1576324

20.   Nycz, M. & Cohen, E.B. (2007).The basics for understanding e-learning. In Principles of Effective Online Teaching; Buzzetto-More, N.A., Ed.; Informing Science Press: Santa Rosa, CA, USA, 1–17.

21.   OECD. (2020). Education Responses to COVID-19: Embracing Digital Learning and Online Collaboration.   Available   at: http://www.oecd.org/coronavirus/policy-responses/education-responses-to-covid-19-   embracing-digital-learning-and-online-collaboration-d75eb0e8/ [Retrieved June 8,2021)

22.   Pokhrel, Sumitra&Chhetri, Roshan. (2021). A Literature Review on Impact of COVID-19 Pandemic on Teaching and Learning .Higher Education for the Future. 8.234763112098348.doi. 10.1177/2347631120983481

23.   Sullivan, Colleen, (2017). Teaching skills all educators should foster. Teach Hub.com Available at   :   https://www.teachhub.com/professional-development/2017/05/5-teaching-skills-all-educators-should-foster/

24.   Survey Report.(2018). Workforce Development Needs   Skilling: A National Imperative.The Australian Industry Group. Available at: https://cdn.aigroup.com.au/Reports/2018/Survey_ Report_WFDNeeds_Skilling_Sept_2018.pdf

25.   Sun, L.; Tang, Y.; Zuo, W. (2020). Coronavirus pushes education online. Nat. Mater. 19, 687.

26.   Taylor, A. (2005). What employers look for: The skills debate and the fit with youth perceptions. *Journal of Education and Work*, 18(2), 201–218.

27.   Tham, C.M. & Werner, J.M.(2005). Designing and Evaluating E-Learning in Higher Education: A Review and Recommendations. J. Leadersh. Organ. Stud.5, 11, 15–25.

28.   UNICEF Press Release.(2020).Teachers: Leading in crisis, reimagining the future. Available at: https://www.unicef.org/press-releases/teachers-leading-crisis-reimagining-future.

❖◆❖