

Techno Emotive Pedagogy: A Strategic Enabler for Catalyzing Sustainable Learning and Living in the Post-Pandemic Educational Landscape

Soorya Narayanan and M. N. Mohamedunni A. Musthafa

ABSTRACT

In this era of digitalization, the imbibition of technology in all walks of life is immensely felt. In a fast-pacing world, a desirable demand for an easy life makes it necessary for the burgeoning of technological prospects. Moreover, technology would have acclimatized the education sector one day or the other, like Scandinavian countries, for sure: but this anticipation was met rapidly during the pandemic period. As a consequence, most educationists felt the necessity for an alternative to leverage the learning loss across the globe. Technology performed the role of a Godmother to forge our country as 'Vishwa Guru' and save pedagogical principles from the clutches of the devastating pandemic. Educational resources began flooding from various technological tools like water flowing from the reservoir while lifting the shutters of a dam. A serious concern that knocks this scenario is 'will this amalgamation of technology and education remain harmonious, or this synchronization will be able to resolve all the ethical or ontological questions of Homo sapiens in the post-pandemic period'? At this juncture, there is the relevance of a shift from techno-pedagogy to techno-emotive pedagogy. Techno-emotive pedagogy is potentially sound to function as a sustainable approach in the field of education by embracing life skills to adapt to the fast-changing modern society. Undoubtedly, technology would be enthroned as the ultimate dependent variable of education, but without neglecting the emotional canvas. It relies on the strong footing that humans are essentially more emotional than intellectual. A single-track system of techno dependence neglecting the organismic emotional contour of individual and social tenets of humans will result in chaos. This paper intends to present techno-emotive pedagogy as a pedagogical experimentation and innovation in the teaching and learning process by utilizing an exploratory approach to the various emotional handicap that intruded on the learning and living system due to the single strategic path adopted during the covid period by analyzing the empirics from the education stakeholders. An attempt is also made to design and develop an instructional strategy that is synchronized with this paradigm. The findings showed that techno-emotive pedagogy plays as a strategic enabler in catalyzing sustainable learning and also the derivatives of this attempt are expected to contribute to a sustained strategic system for learning and living.

Keywords: Covid-19, digitalization, strategic enabler, sustainable learning and living, techno emotive pedagogy, techno pedagogy.

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I. INTRODUCTION

Modern society has witnessed various revolutions such as the agricultural revolution, the Industrial Revolution, and currently the newest "digital revolution" and the creation of a new kind of "information society." The information revolution is transforming how people connect and govern themselves and how cultures worldwide define what constitutes economic success. Since the beginning of the industrial revolution, prosperous civilizations have aspired to raise living standards and achieve economic prosperity. Industrial society has been characterized by the division of

labor, massive factories, and hierarchical management. The Scientific and technological revolution preceded the industrial revolution. Most educationists agree that education in this era has to concentrate more intently on communication ability, critical thinking, creativity, innovative ideas, and acquaint yourself with new technologies more important than ever for personal and national progress. Beyond the industrial revolution, the contemporary economic, social, and technological tendencies are described by the term "information revolution." A great remarkable shift occurs in every field of development. As per the millennium development goals, it intends to build a framework at the national and international levels that will foster new

technologies, specifically information technology, which is a fuel for development. To develop new-era skills students will need digital-age competencies. The world has entered an age when information is central to technology, economy, work, and culture. It opened a new vista for every nation to merge its educational system in a modernized and globalized manner. While the future generation demands a quality of life by setting certain criteria for their standard of living. It reflects various aspects of the social revolution. At this point, there is a dire need to support the learners to acquire technical knowledge and develop the skills necessary to cope with their life problems by balancing their intellectual and emotional aspects. So, there should be a paradigm shift in instructional methods to fulfill the needs of present and future generations.

II. TECHNO PEDAGOGY: STRATEGIC ENABLER FOR THE 21ST-CENTURY CLASSROOM

One of the most significant and enduring traits of the 21st century is changeability. The world is changing through technology. It ties individuals together globally. As a result, new deals, ideas, and dimensions are being introduced into every aspect of human life. Our educational system is always changing as the demands vary. In this 21st century, Technology plays a magnificent role in the field of education. Thus, our familiarity with the phrase ‘Techno-pedagogy’ increased, and it became the most accurate predictor of the teaching-learning process.

It is evident that technology paves a new way in our educational context. No doubt it is interactive, entertaining, and has wide applications. But technology itself is incapable of solving all the problems of human beings by reaching out to their emotional contours rather than their intelligence. The life skills that determine human beings’ living conditions may also be affected by the intervention of technology in a pedagogic approach. A question in this scenario is whether this integration between the teaching-learning process and technology remains euphonious in the post-pandemic era. This rationale makes yet another horizon to a pedagogical transaction that is techno-emotive pedagogy.

III. COVID -19’S IMPACT ON DEVELOPING NATIONS ‘EDUCATIONAL SYSTEMS: A REVIEW

Due to the COVID-19 epidemic, schools, universities, and other educational institutions all over the world shuttered. Students’ actual physical presence in a genuine classroom is prohibited during that time. Therefore, in this scenario, the teaching-learning process must rely heavily on technological resources, tools, and devices from both teachers and pupils. Technology ensures the flow of various online learning platforms; the pandemic served as a blessing in disguise to catalyze the speedy transition of the world into a paperless society. The promise of technology to the educational sector during the pandemic was materialized through a technologically driven support system. A starving pedagogical system during the pandemic could satiate its hunger by feeding on technology. Teachers must be updated on techno-pedagogical abilities to meet the needs of today’s learners (Rao & Jalajakshi, 2021).

The Covid-19 pandemic has abruptly changed many facets of the globalized world, upending everything in its path. The disruption of economies and societies resulting from it exacerbates the current worldwide education crisis and unprecedentedly impacts the educational system. Up to 90%+ of the world’s students have had their education completely interrupted at some point as a result of the global COVID-19 shutdown. This implies that everything has been stopped, even services that were in a place like food access, which has often encouraged pupils to attend school. Covid produced substantial setbacks in many developing nations whose educational systems were already confronting a learning crisis. In the context of developing countries like Bangladesh, India, Kenya, and the Philippines, it represents an increase in a dropout rate that is already quite high. Initially, there was astonishment among the countries on how to address educational needs. Many countries adopted closing the institutions as the immediate strategy. Then there has been a sudden emergence and shift to online education. There have been wider disparities evidenced among the countries in institutionalizing online education as an alternate system mainly due to the paucity of infrastructure and the digital divide.

Many developing countries are skeptical of internet schooling. A considerable percentage of students from lower-income households cannot afford the internet and gadgets required for online education due to a lack of technological infrastructure and other barriers. Numerous challenges have impacted the educational system as a result of the terrible pandemic, ranging from curriculum modification to school closures. De Alwis and David (2020) found that in Malaysia, there is a shortage of positive attitudes and literacy among teachers, as well as a lack of internet connectivity in rural areas of Nepal. In India’s urban areas, there is a dearth of 4G compatibility for live-streaming online lessons. (Harsha & Bai, 2020). The inability of pupils from low-income households to purchase high-speed internet, the absence of human interactions, the insecurity of personal information, etc. (Jena, 2020). Many poor-country households do not provide an adequate learning environment, forcing students to learn in their living rooms or bedrooms, which is extremely unproductive (Owusu-Fordjour *et al.*, 2015). The most significant barriers to universal access to online education in developing countries like Bangladesh include a lack of acceptable internet speed, gadgets, expensive mobile data costs, the family’s financial position, and the student’s mental health. (Ramji M. & Sultana A., 2020).

IV. THE TECHNOLOGICAL IMPACT OF THE COVID-19 PANDEMIC

The tentacles of technology grabbed the field of education much earlier though it couldn’t take education completely into its folds. The stable pool of education has been experiencing an undercurrent of technology for ages, but it couldn’t bring any remarkable random movement in the stagnant body of knowledge due to many inertias. However, when the traditional classroom was threatened by the Covid -19 pandemic, it was technology that played a revolutionary role. Since the COVID-19 epidemic, people can only maintain their socio-emotional connections through digital

networks. As a result of the outbreak, there have been rules, limits, and orders to stay indoors. In response, people stayed inside, shops and companies shut down, playgrounds went empty, and the use of digital devices skyrocketed around the world. There is a lot of pressure for everyone, regardless of age, to use internet resources. Traditional offline pursuits such as learning, buying, working, and socializing are rapidly being replaced by their online counterparts. Digital technology, which enables communication and virtual interactions on social media platforms utilizing the internet, is the use of electronic equipment to store, generate, or analyze data (Vizcaino *et al.*, 2020). As a silver lining, digital technology has helped the socially alienated keep in touch with friends and family. Although there were many platforms and technologies before the catastrophe, their relevance to our day-to-day lives surged substantially during the pandemic. Following the outbreak, this is likely to be a constituent element in our life.

V. DIGITAL DIVIDE AS THE PRIME HINDRANCE

The digital divide, a persistent social and information disparity, is one of the digital revolution's most frightening and unexpected outcomes. The educational disparities and the learning crisis even become deeper due to the outbreak of covid. The Covid-19 issue exacerbates socioeconomic gaps in classrooms. Students have been experiencing inequality in their access to education due to differences in the availability of resources among the various socioeconomic classes as well as residents in rural and urban areas due to different levels of digital literacy and access to ICT infrastructures, radio, television, and computers (Sayani Ghosh *et al.*, 2021). The National Education Policy (NEP) acknowledges the persistent digital exclusionary practices that are common among India's impoverished urban, tribal, caste, and religious communities (Kasturirangan *et al.* 2019).

Some schools may have an abundance of digital tools and instructional aids. Institutions with insufficient ICT infrastructure and instructional resources serve students from underprivileged backgrounds (Di Pietro *et al.*, 2020). The majority of the time, private schools perform better than public schools. Not all students have equal access to digital tools and educational materials. Parents with more financial means send their children to schools with better digital infrastructure, and teachers who are more adept at exploiting digital technology can only survive. The affluent elite and the deprived class both have access to information and communication technology, yet there is a significant difference between them in developing nations (Venkatesh & Sykes 2013). Studies have found evidence to support this, including low participation rates due to isolation and a lack of connection in online classrooms, poor internet connectivity, electric device availability, etc. (Surkhali & Garbujia, 2020). The digital revolution makes marginalized and disadvantaged individuals even more vulnerable by amplifying socioeconomic disparities including the expanding rural-urban divide.

VI. COVID-19'S PSYCHOLOGICAL IMPACT

The coronavirus epidemic has compelled academic institutions to adopt a digital mindset in curriculum delivery necessitating a shift. Due to COVID-19, the teaching-learning process has undergone a drastic change that has brought about certain advantages, difficulties, and disparities. Humans need social interaction, and being socially connected also boosts mental well-being. The epidemic also caused unprecedented levels of anxiety, sadness, uncertainty, and negative emotions such as impatience and aggressiveness (Rajkumar, 2020). Woday *et al.* (2020) conducted a survey and the results of that study indicated that when schools are closed, students have elevated levels of stress, anxiety, and depressive illnesses. that students experience significant levels of stress, anxiety, and depressive disorders while schools are closed. During COVID-19, adolescents and college students confronted significant mental difficulties (Ziyuan Ren *et al.*, 2021). While careful (and attentive) use of technology is associated with well-being, excessive screen time has been related to a number of negative mental health effects, such as psychological difficulties, poor emotional stability, and an increased risk of depression or anxiety (Allen *et al.*, 2019; Aziz Rahman *et al.*, 2020; Ministry of Human Resource Development, 2020). In China, 0.9% of respondents reported having severe anxiety, 2.7% reported having moderate anxiety, and 21.3% reported having mild anxiety, according to a cross-sectional survey (Cao *et al.*, 2020).

Gaining expertise is crucial to preventing major harm to college students' mental health during the next pandemic outbreak because COVID-19 won't be the last pandemic. The uncertainty looming large during the lockdown has caused stress, fear, and anxiety (Sahu, 2020), which also affects the students. Stress, discomfort, and anxiety are the important impacts of the Digital divide associated with COVID-19 on mental health. It is worthwhile to investigate the pedagogical practice during the pre-covid era when the world order speculatively expected a techno-driven system compatible with the learning requirements of the twenty-first century.

VII. TECHNO EMOTIVE PEDAGOGY: PEDAGOGICAL EXPERIMENTATION

Emotions have a profound effect on every aspect of human cognition. Focusing on a particular thing makes one feel a certain way and often leads to motivated action. All parts of one's mind are influenced by one's emotional experiences, making them particularly relevant in the classroom. Emotional effects should be carefully considered when building educational courses to promote learning and long-term retention of the material as well as maximize learner engagement (Shen *et al.*, 2009). Human cognitive functions, including attention (Vuilleumier, 2005), learning and memory (Phelps, 2004; Um *et al.*, 2012), reasoning (Jung *et al.*, 2014), and problem-solving (Isen *et al.*, 1987), are all influenced by emotions, and they are all crucial aspects in an educational area. An individual's cognitive development is in charge of fostering their intellectual skills like concept formulation, understanding, thinking, reasoning, and emotional expression. These are all interrelated. Since emotional development depends upon the physical as well as

psychological well-being of an individual, our instructional approaches place equal emphasis on both the intellectual and emotional development of students. The process of learning is significantly influenced by emotions. As is clearly evidenced from the foundational work of Bloom, there is significant overlap between the cognitive and emotive domains, especially in levels four and five, and that cognitive objectives are frequently employed as a means of achieving affective objectives. The affective domain, which focuses on emotions, values, motives, attitudes, and dispositions, describes the emotional processes of learning (Bloom, 1964).

Emotions impact the learning processes and results, and they can also be evoked by them (Valentine *et al.*, 2012). Motivation, self-control, and focus are all channels via which one's emotional state might affect their academic performance (Pekrun *et al.*, 2002). Studying students' emotions in an instructional context is very important (Frenzel *et al.*, 2007). According to Goleman (1995), an individual has two rational minds, one that aids in our thought processes and the other which regulates feelings. Both aid in the storage of knowledge and the ability to affect feedback, behavior, actions, and human thought. If students' emotional intelligence is strong, their confidence in their information technology skills will be high; conversely, if students' emotional intelligence is low, they will feel less confident in their information technology skills (Najib Ahmad Marzuki *et al.*, 2015).

Emotions are fundamentally intertwined with cognitive skills, have a bearing on them, and are essential for learning. If educators are aware of the factors that interact with emotional states to impact learning, they can utilize this knowledge to enhance the instructional process. Because learning and emotions are inextricably linked. Whether emotions guide or influence the event, they can promote or inhibit learning. Strong positive or negative emotional states are contagious and can spread to others in a learning environment. In either a face-to-face or an online setting, the emotional moods of students and teachers can impact one another. Educators must be aware of the role emotions play in both teaching and learning to develop more successful learning environments. Additionally, they must comprehend how both individual and group emotional states can impact the learning environment and experience. Interest, wonder, curiosity, passion, innovation, participation, and pleasure are all desirable learning emotions. These improve focus and attention by turning on the brain's reward system, making the experience appealing. The learner's motivation is influenced by both pleasant emotions and the learning states they facilitate. Motivation can be thought of as the drive and passion behind learning. Negative emotional states, such as worry, tension, depression, apathy, disengagement, concern, fear, etc., are at the opposite end of the emotional spectrum and can impede learning processes, reduce motivation to learn, and impede the development of positive learning dispositions. This may have a negative impact on a student's educational experience and present teachers with problematic classroom conditions and dynamics. In this sense, it will be fantastic if we bring an educational technique that may support a student's emotional well-being.

Emotional intelligence (EI) is introduced by Daniel Goleman as the capacity to deal with disappointment, manage

stress, and reinforce optimism. Self-awareness, self-motivation, impulse control, humanistic qualities, and mood management are the essential parts of emotional intelligence that should be considered to improve communication and IT skills. Emotions are typically quite ethereal. Research on the correlation between students' emotional intelligence and technological proficiency is crucial at this time. At every stage of the learning process, some e-learning technologies are very interesting in generating an environment favorable to forming happy emotions and encouraging constructive interpersonal interactions. With rising recognition that students are not logical automatons those who only function at the cognitive level, the emotional dimensions of learning have attracted more attention recently. Through interpersonal interaction, humans perceive one another's emotional state, either consciously or unconsciously. Such an endeavor is expected to necessitate evolving new pedagogical experimentation – Techno emotive pedagogy as a strategic enabler to catalyze sustainable learning and living.

VIII. TECHNO EMOTIVE PEDAGOGY PATHWAY

To address the issues of emotive aberration caused due to the Jurassic dominance of technology to meet the emergency, there is a need for an illustrious explanation of the praxis approach where there is ample scope for correlating emotion and technology at micro and macro levels. While analyzing stages of collaborative learning by Daniel and Walker and experiential learning by Kolb, prompted the researcher to propose a new technique based on techno-emotive pedagogy. Fig. 1: Illustrate the sequential steps followed. Fig. 2 constitutes the various activities included in each stage of the Techno Emotive Pedagogy - instructional strategy (TEP-IS). A description of each phase is also presented.

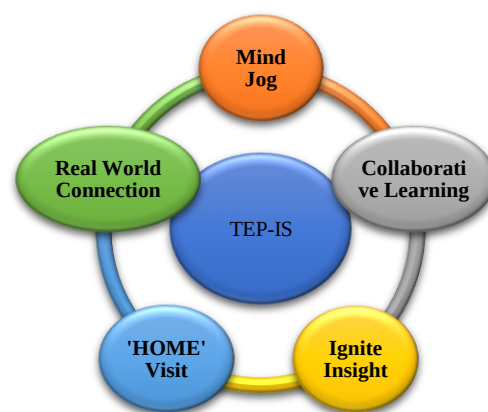


Fig .1. TEP-IS: Techno emotive pedagogy-instructional strategy.

Phase I–Mind Jog: A multi-strategic approach utilizes here that includes cognitively stimulating exercises like brainstorming, Gamification, Ice breaking situations, etc. employed to encourage healthy behaviors of kids to keep their cognitive abilities.

Phase II–Collaborative Learning: Socio-emotional interactions are deliberate exchanges between group members that aim to convey feelings and influence how others see them and the socio-emotional atmosphere. Various collaborative learning strategies can activate the emotional

well-being of students in a classroom environment.

Phase III-Ignite Insight: In this phase, Students will identify patterns in their emotional life and reactions and recognize similarities in others. Self-reflection and meta-cognitive techniques can significantly improve a student's educational experience. They will be more conscious of their thought processes and are more likely to be engaged, in-depth learners.

Phase IV- 'HOME' Visit: Here 'HOME' is the acronym used for 'How to Monitor Emotion'. Students become capable of monitoring and regulating their emotions in this phase. Students prepare their self-portfolio and assess their progress.

Phase V-Real World Connection: Here, students are more engaged in the real-world experience. The most effective strategy to build a connection to the actual world is to encourage pupils to be active both mentally and physically.

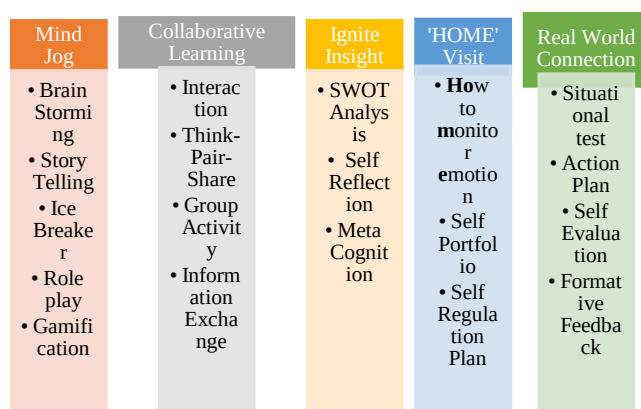


Fig 2. Activities incorporated in each stage of TEP-IS.

As a response, emotions have the power to influence our decision-making, our well-being, and the well-being of others. As a result, emotionally aware technology could be useful.

IX. CONCLUSION

Our world currently enjoys the pinnacle of technology and modern resources. Education is reviving its digital footing and becoming a digital industry. The Covid -19 pandemic's outbreak acted as a major motivator for the quick spread of technology over the entire planet. Technology would undoubtedly become the dominant source in the teaching-learning system. Most developing countries have to capitalize on their human resources i.e., prospective citizens as enterprises. This needs a strong synchronization of cognition and emotion by binding the same through the tool of transformative technology. Then only the future generation is expected to be strong, confident, flexible, and resilient and be able to adapt during any difficult time. Bringing attention to the part that feelings play in the learning process can enrich and enliven both the classroom and the learning process. Integrating the emotional facet into techno pedagogy will reflect a new perspective on the entire teaching-learning process. So, techno-emotive pedagogy is potentially sound to function as a sustainable approach in the field of the teaching-learning process by embracing the necessary life skills to adapt to the fast-changing global society.

CONFLICT OF INTEREST

Authors declare that they do not have any conflict of interest.

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