Technostress and its Impact on Educational Communication among Higher Education Teachers − A Conceptual Study

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Abstract

Classroom communication plays an ultimate binder cementing multi-level teacher-learner interactions to their varied functions, which also interestingly has been leveraging itself with progressive techno-academic leap. Post pandemic, both the meaning of 'classroom' and 'communication' in an academic milieu invited wider scope for investigation. Moreover, classroom communication ranging from conventional, online, hybrid, flipped, to asynchronous or synchronous-natured classrooms, reflecting the pressing need on teacher/ facilitator to acclimatize with corresponding delivery strategies (i.e., adapting classroom communication) is surmounting. Fascinatingly to this challenge, technology added fuel both in the sense of flexibility and tests for teachers impelled them to re-skill themselves. Soon, a segment of teachers claiming their technological literacy as techno-pedagogy fathomed how digital pervasiveness is the 'new normal' of education and comes with its own set of tall expectations; studies supporting on mounting mismatch of techno-literacy indicated its less effective implementation causing technostress among teachers across the globe. Hence, by looking closer one can analyze the process, through injecting or assimilating technological tools into teaching practices has no purposeful meaning unless it meets the goal of knowledge enrichment. Thus, educational communication in its wider sense seeks recalibration. This could be through inspecting it from teachers' side to redress the slowly slipping purpose of education and fading away of teachers' autonomy, deluded by alarming technological overdependence among substantial learners. The present conceptual research study attempts to understand how the higher education teachers' educational communication stands impacted by technostress and its related aspects. Moreover, it aims to address whether the enriching knowledge deliverance causes higher education teachers' technostress with respect to classroom interaction. Also, an interesting intersection for future classroom deliverances by higher education teachers and ways to tailor such deliverances confronting possible (newer) technostress sources in the teaching-learning context will be the broader scope of the study.

Keywords: Higher Education Teachers, Technostress, Knowledge Deliverance, Educational Communication**.**

Introduction

The art of communication in classrooms plays a significant role in transcending from the oral tradition of ancient education (gurukul) system in a country like India to present techno-driven interactions. Moreover, by trying to explore deeper into teachers' classroom deliverances it inadvertently goes beyond scaffolding, planning and organizing curriculum prescribed content. Weaving through a common inconspicuous thread the teacher simultaneously customizes his/her content deliverance for different learner preferences evoking interest, ensuring engagement, carefully considering and plugging possible gaps (mitigating possible misinterpretations), together establishing classroom discipline; all extended through that invisible tool of 'communication'/ classroom deliverances (Mallick, 2022).

Eventually, with passage of time between the teacher and learner in addition to classroom communication (deliverances), technology tiptoed as a mediator. Now, this technological integration in the teaching-learning system can be analyzed from two perspectives. Firstly, the required knowledge of the existing-cum-evolving digital tool(s) and secondly, finding a purpose of implementing the tool(s) as a medium to reach bigger educational goals (Mallick, 2022). Therefore, to execute the two digital competences for teachers gained attention as a much-needed skill for meeting rapidly transforming techno-academic milieu. However, considering knowledge of digital tools most learners avail an advantage over a major group of in-service higher education teaching fraternity with respect to early technological exposure, whereas many in-service teachers (presently in higher education) adapted technology while experiencing conventional education themselves. For the latter to keep pace with every evolving digital tool can be challenged in its own way. Nonetheless, identifying only required techno-tools as medium and integrating them optimally for enriching knowledge will align teacher-learner-curriculum objectives more effectively. However, it would automatically demand the teacher towards utilizing corresponding classroom communication skillfully. Thus, an integration of technological tools (devices, platforms, software and allied designed for education) with educational communication through enriching knowledge deliverance is the aim.

Literature Review

An interesting 2018 study by Major et al. highlights on 'dialogic teaching', drawing attention on how classroom interactions and technologies interact to mark future classroom preparedness. The study found that classroom delivery comes as the commonest tool conveying information, instruction and feedback bridge between the teacher and the taught. More with techno pervasive times such classroom interactions turn prone to newer interpretations, filled with challenges and contingencies. The Discourse Analysis, Sociolinguistics, Conversation Analysis and Sociology lays the foundation to classroom interaction (extended as educational communication) regulating teacher's deliverances in the context. Also, classroom deliverance has been always intended to refine learner participation through critical order thoughts, reasoning, improving articulation, initiating 'interthinking' (Littleton & Mercer, 2013), and acquiring connotation/ symbolism related activity (Twiner et al., 2010). Nevertheless, technology aided conventional classrooms to transform, but interweaving it to the real purpose of education, especially considering the role of classroom interaction (educational communication) remains a gap. Teaching and technology have a long way to go, provided the priorities are clear and aligned i.e., to engage, educate, enrich and

evolve learners with transforming times. It is for the same purpose the teachers' digital competency to be strengthened beyond digital literacy.

Teachers' Digital Competency (TDC): Reappraising Digital Proficiency

Projection of future teaching-learning expects teachers' digital capabilities to play an instrumental role guiding learners, shaping right use of technology and advancing techno-pedagogy extensively. As a highly featured concept, communication and its collaborative possibilities seem promising in this regard. Fallon (2020) refers to a study conducted by Janssen et al. in 2013, which identified twelve elements comprising digital competence for teachers to focus on incorporating technologies in learners' everyday academic life for: working on creative causes, aware decision making, right understanding of technological impact on society, develop professional and personal performances, maintaining balanced perspective on technological innovations, and collaborating knowledge development (Communication & Collaboration) are to list among the few. Accordingly, teachers' digital competence expanding over classroom communication shall integrate awareness, practices and personal improvements for learners, which are known as 'supportive' competencies (Janssen et al., 2013) who indulge in technology mostly without realizing its implications. Moreover, mediating between learners and technology, teachers' goal of delivering knowledge enrichment will render a new direction for educational communication in the techno-academic era.

Since the right understanding of utilizing technological medium to collaborate, mutually co-create (as teacher and learner) and consciously use the (digital) platform meeting educational objectives is the goal of education. Hence, the digital competency framework should extend itself beyond teacher adaptability, not only for newer digital tools but also for teachers being able to enrich learners through educational communication. This clearly indicates the difference between digital literacy and competence (Mallick, 2022), the need for reappraising teachers' digital proficiency. Furthermore, transitioning from mere technical knowledge of digital tools to perpetuating a wider socio-cultural impact through digital competence (Fallon, 2020; Janssen et al., 2013), and will be the new way to adopt (teachers') digital proficiency. In other words, to ensure teacher sustainability and autonomy, which stands challenged amidst contemporary advances of techno-academic times; enriching knowledge deliverance through wider scope of educational communication is the pressing need (as a form of digital proficiency) in the current context. Therefore, selectively analyzing the selective existing frameworks aiding teachers' educational communication is quite necessary.

Mapping Teachers' Educational Communication on Selected Digital Competency Framework

Educational communication includes a wide array of communicative objectives in the teaching-learning context. It is purposeful, productive and practical, implying knowledge creation, promoting new knowledge (through understanding) and building skills towards a practical process. In teaching-learning context, educational communication extends through teachers' classroom deliverances and should help gain competency for teachers to sustain technological onslaughts by developing those traits from digital competency frameworks. Few selected digital competency frameworks are analyzed towards looking for those traits:

a) DECK framework (Fisher et al., 2012) is found drawing on engaging classroom interactions to stimulate 'distributed thinking and knowing, engagement & motivation, community & communication' and abilities to build information (knowledge building). Fallon (2020) describes the framework as a 'pedagogical tool' causing 'reflective conversations building understanding' purpose of learning with technology.

b) PIC-RAT framework (Ottenbreit-Leftwich & Kimmons, 2018) advocates for transforming curriculum to adapt more active interaction suiting learner needs. Thus, their conceptual model of the study seeks 'progression' to administer techno-centric pedagogy and its aligned curriculum design. Gathering consideration for teachers to innovate on traditional resources, the framework paves the way for reinventing educational communication for more enriched classroom (inter)actions.

c) ISTE framework (ISTE, 2017) chalks out seven broad digital competencies for teachers: digital leadership, commitment to continued personal learning, digital learning environment designing, effective facilitator, digital data analyst, digital citizenship and digital collaboration. Furthermore, the framework envisions teachers to impart on digital citizenship for learners to build 'digital behaviours', adapting to corresponding curriculum and pedagogical changes.

d) T-PACK framework (Mishra & Koehler, 2006) based on the study conducted by Shulman (1986) discusses confluence of pedagogy, content knowledge and technology. Also, Ndongfack (2015) identified structural issues with T-PACK which somehow does not deeply integrate technology into the teaching-learning process. This framework establishes the need for pedagogy, content, knowledge and technology separately, but its integrative possibilities for teaching as a holistic process is not explored (ISTE, 2017).

e) UNESCO ICT Competency framework (UNESCO, 2018 & 2023) expects teachers to be equipped to blend collaborative and creative learning functions into technological tools for teaching learners develop skills and participate in social citizenship responsibilities. The framework emphasizes eighteen ICT (Information & Communication Technology) competencies to improve educational policies, curriculum support, assessment plans, administration and professional development. Interestingly, communication and its collaborative power to extend the identified competencies have no mention in the list.

Interaction, engagement and learning have always been an integral part of classroom practices. Technological pervasiveness challenges this equation with its evolutionary and assistive ardour and sets a precedent on both teachers and learners alike to progress with its pace. Taking the former, teachers' classroom interaction and deliverance goes beyond setting connections of pedagogical contents through technological tools.

The aforesaid frameworks reflect how teacher as a doer can explore multiple functions with his/her educational communication abilities, like: stimulate engagement and thinking for community communication (DECK framework), transform classroom interactions into opportunities for knowledge enrichment (PIC-RAT framework), practice to instilling 'digital behaviours' (ISTE framework), identify and explore every avenue of teaching-learning process, which policy framers may have under credited (in T-PACK framework) while analyzing teacher technology confrontation. Knowledge dissemination (either emanating from the teacher or initiated by the teacher) enables academic support, plans and strategies to

transform learning into knowledge enrichment. Teachers are therefore entrusted with this responsible task of transforming teaching with time and technology, but technostress can be a hindrance.

Teaching with Technostress

Technostress is a circumstantially derived stress caused by over human-machine interaction that compromises productivity and commitment towards work (Ragu-Nathan et al., 2008). Especially, after the turbidity it experienced during pandemic times Indian higher education context with its changing modalities would be suitable to explore under this milieu, more relevant because technostress needs proper handling considering its application over an advanced grade/ level (Wang & Li, 2019). Also, from existing literature some notable abruptness reported in this regard include under-preparedness (Sareen & Nangia, 2020), deficit techno-academic alignment (Nambiar, 2020), challenged novelty for techno-academic modalities (Mishra et al., 2020), stunted learner orientation (Mobisha et al., 2021), to mounting work-pressure in teaching-learning (Elangovan et al., 2021). Moreover, referring to the same, Richard Lazarus Transactional Model of Stress' proposed in 1966 laid importance on resource-mapping in a circumstantial backdrop. This clearly resonates with the teachers' condition here who do suffer from resource deficit, further pressing the need to explore technostress in the context. Some consequential situations like conflicting-roles (Wang et al., 2008), inner struggle against situational demands (Joo et al., 2016) finally culminating in techno-denials (Ozgur, 2020) in lieu of digital apprehensions caused the compromised teaching and will affect concerned teachers' classroom deliverances too.

Educational Communication

Teaching to a major part is deliberating, mediating between the text and the learner to bring collaboration, ideation, analyses, and implementation. So, it is a daunting experience when strategies are unexplored, amiss, overdone, adding discord to instructional transactions (Ferguson et al., 2019). The 'collaborative communication' (Grooms, 2003) has been an interplay of content-technology-instruction attempted to make teaching-learning more interactive, participative, and purposeful (Long et al., 2014). A related study in Lithuania (2019) found from teacher respondents how pedagogical competence, planned assessments and interactive abilities paved significant academic exchanges (Navickienė et al., 2019). Also, to blend the whole is a humongous task exuding anxiety, fatigue and fear of psychological harm contracted from overindulging in digital media (Estrada-Munoz et al., 2020). Thus, identifying components controlling and impacting educational communication to avoid potential technostress among higher education teachers is a need in the Indian context.

Knowledge Deliverance

The higher education teachers' digital competence goes beyond just fine-tuning technological modalities, as it will only partially answer the continuing gap between teacher, technology and technostress. The gap persists because technological assimilation into academics is turning prone to digital prevalence, in contrast to aiding knowledge deliverance. Deluge of Edtech, educational software, learning applications, technology driven teaching-learning platforms, interactive-engaging-participative techno-teaching alternatives necessarily shifted the focus on the channel / medium, rather highlighting the purpose. This very purpose of enriching

knowledge deliverance through educational communication can hold the key to reorienting teachers to claim their fading autonomy threatened by implicit advances of technology and its applications.

Need & Relevance

With evolving technologies making their way into classrooms bridging teachers and learners, it would set its own parameters for interaction. For instance, Search Engine Optimization (SEO) would allow a special linguistic approach to ensure effectiveness. The recent ChatGPT would expect tailored prompting for better search or aid from Artificial Intelligence. The human-machine interaction is getting leveraged at a faster pace, and academia would eventually get regulated by contracting a change in teaching-learning through this lens. With the altering notion of classrooms (conventional, hybrid, flipped and others), the very form of communication which conforms in continuance of technological adaptations will turn more stressful for the teacher as a stakeholder. Hence, the need for educational communication (classroom interaction) to extend knowledge enrichment through classroom deliverance can strike a balance with more purposeful blending of technology to teaching, provided possible technostress creators are identified and mitigated for effective adaptation of teachers into the techno-teaching-learning environment.

Objective

To conceptually understand and explore the possible technological challenges in educational communication impacting higher education teachers with technostress

Methodology

The present study has conceptually reviewed various literatures from journals, books, websites, etc. for better understanding. Hence, descriptive research design has been adopted to explain the observation and rationale accordingly.

Observation & Rationale

Blending technology with classroom deliverances render multiple knowledge enrichment avenues: past literature finds interactional opportunities (dialogue activities') augmenting asynchronous peer interaction, (Hoadley & Linn, 2000), involving learners over micro-blogging (Singleton, 2016), and aiding learner express point-of-view considering audience awareness. Teacher's mediating role (between technology and learner interaction) is more instrumental while scaffolding comprehension for imparting situational communication, for subject knowledge and developing technological skills (Khoo et al. 2016). Among many instant messengers like 'WhatsApp' finds a special reference (Bouhnik & Deshen, 2014) facilitating effective teacher talk and guidance along with Google Classroom posts, and quick exchange of emails. In all this technology mediated contexts moderated by teacher's deliverance improves learner comprehension of analyzing context, purpose and use of communication appropriately. Together, encouraging learners to contribute on a common digital platform does enhance quality of work, allows peer learning (often without formal classroom interaction), inspires shy/ slow learners' participation, and overall motivating an enriched learning experience (Bouhnik & Deshen, 2014; Maher, 2012). Since the potential of

technology lies in its assisting or restricting affordances (Linell, 2009), familiarity with devices and their functioning impacts interaction (Singleton, 2016). Among multiple ways technology assists communication, study finds digital technology extends as: object of communication, subject / participant of interaction and as tool of interaction (Beauchamp & Kennewell, 2008). Nevertheless, keeping the appeal for newer applications or technological tools on one side, practically mapping each to their purposeful usage is both time consuming and challenging for teachers (Khoo et al., 2016; Singleton, 2016).

Today, technological challenges can be widely separated with regard to learners and teachers. The former may stumble against technical skill gaps (Beauchamp & Kennewell, 2008; Sins et al., 2011), unfamiliarity, knowledge, understanding and affordance of exploring experimenting (Falloon & Khoo, 2014). Moreover, between technology and learners, the value association a learner lauds upon technology are often selective, superficial, governed by the need for grades. Thus, digital tools work as dependable sources and do not aid in enhancing learning, superseding learning objectives (Kershner et al., 2010). Therefore, the teacher's technical/digital competence is far more than exposure to basic technical knowledge, frequent retooling, matching evolving technological affordances and its access (Beauchamp & Kennewell, 2008). Considering the present times, the teacher's role in extending the cause of education goes beyond incorporating tech-tools in the classroom. It has a sociocultural function to play, where he/she ensures that digital tools not only influence learner activity but also adds to their knowledge construction and understanding (Major et al., 2018). Classroom interaction, especially teacher deliverance with the aid of technology, holds profound power for enriching knowledge in the sociocultural perspective (of education). Under the broader purview of educational communication, all these interactions, mostly influenced by varied technological tools, seek teachers to overcome technological challenges (mental and physical) for reinstituting the balance between teacher, learner and technology.

Suggestions

A full-fledged study can be conducted by drawing respondents from academic institutions (schools, polytechnics, colleges and varsities) using mixed methods (qualitative & quantitative methods) to identify the different facets of educational communication and technostress. Also, this will provide more insights and better prospects about teachers undergoing technostress and its challenges in educational communication towards effective classroom deliverance. As primary users of technology the teachers and technostress have multiple layers in academia the onus on teachers and learner community is more for identifying its right understanding and usage. Since teachers stand at the forefront being keepers of education, to retain its purposefulness and regulate technology to be only a supportive intelligent tool, their digital competence also has to be in sync thereof. Keeping this in view, the researcher insists on mapping technological interferences in educational communication to consider corresponding technostressors incurred by higher education teachers, analyzing those factors for planning robust technology-teacher-training components, designing more pragmatic orientation programs allowing teacher autonomy and learner engagement. All the aforesaid suggestions are placed for digitally balanced and academically sound educational communication.

Conclusion

Technological disruptions will inevitably affect teachers along with their teaching-learning practices. Communication is the bedrock of this practice and thus there is a sheer necessity to identify the possible interruptions (technostress) to it. Moreover, to equip higher education teachers gaining insights into technological possibilities in terms of educational communication could open-up the avenues for better policy framing in teachers' digital competence. Also, contesting technology would be a futile act unless collaborative measures were adopted between human teachers (also learners) and intelligent technologies. Therefore, identifying the gaps for accommodating teachers' sustenance as technology storms its way into academia would add value through this research outlook.

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