



Microlearning to Macro Impact: Rethinking Teachers' Capacity-Building for Developing Required Competencies in Indian HEIs Ecosystem

Pratima Khandelwal*

¹Founder and Lead Facilitator, FlyHigh Educational Excellence Services,
Bangalore, Karnataka, India, Email: pratima.k.flyhigh@gmail.com

Poorna Shankar

²Dean Artificial Intelligence and HoD Computer Engineering,
Indira College of Engineering and Management, Pune, Maharashtra, India, Email: poornashankar07@gmail.com

Satish Polshettiwar

³Department of Pharmaceutical Sciences, School of Health Sciences and Technology,
Dr. Vishwanath Karad MIT-World Peace University, Pune, Maharashtra, India, Email drsatishpolshettiwar@gmail.com

Bhagyashree S R

⁴Dean Research & Professor Dept. of Electronics & Communication Engineering
ATMECE, Mysuru, Karnataka, India, Email: dr.bhagyashreesr_dean@atme.edu.in

Abstract

This paper redesigns teachers' capacity building in Indian higher education spaces by deeply examining the shift from episodic generic/domain specific Faculty Development Programs (FDPs), or Leadership Development Programs (LDPs) to reinforced and more modular microlearning learning ecosystems. Drawing on the author's extensive practice of designing and delivering large-scale, high-engagement training interventions for diverse educator cohorts, the study proposes a pragmatic framework that integrates bite-sized learning, contextual application, and reflective practice.

The paper argues that traditional capacity building models often face limitations in effectiveness, engagement, sustained impact and measurable outcomes, particularly in contexts characterized by differential needs, digital disparity and competencies and time constraints. Thus, institutionalizing the concept of microlearning—designed and designated as short, focused, and action-oriented learning capsules—enables more accepted, doable and personalized pacing, and immediate classroom transfer. Evidence-informed reflections from multiple offline, online and blended programs (serving cohorts of up to 50 participants in a batch) are used to indicate and qualitatively illustrate how such microlearning pathways, when aligned with the contemporary and needed themes such as innovative andragogical approaches, digital pedagogy, AI integration in classrooms, emotional intelligence, sustainability, and design thinking, can significantly enhance teacher's learning and instructional design suiting their classrooms.

A key contribution of the paper is the proposed 'Micro-to-Macro Impact Model', which plots the progression from individual learning interventions of teachers, then mapping it collectively towards institutional transformation through integrating the efforts, peer sharing and learning, some iterative practices, and customized assessment mechanisms. The study also highlights the role of digital platforms and professional networks (including LinkedIn-enabled knowledge sharing) in extending learning beyond formal training spaces. By encompassing microlearning within the broader discourse of NEP 2020 and outcome-based education, this paper offers a scalable, adaptable, and practice-driven approach to reimagining teacher capacity building for future-ready academia.

Keywords: Microlearning, Capacity Building, Digital Pedagogy, Blended learning, andragogical approaches, AI integration

1. Introduction

The Indian higher education system is witnessing significant changes amidst evolving global changes and technology-based disruptions. Along with this, the recommendations of NEP 2020, rapid technological advancements, and evolving learner expectations are carving new dimensions. The role of teaching fraternity is increasingly advancing to function as co-learners, facilitators, co-creators, and designers of learning experiences rather than mere transmitters of knowledge or mere providers of the same (UNESCO, 2021; OECD, 2021).

Despite sustained efforts through the conventional FDPs, faculty enrichment programs, students' development initiatives or even the leadership development programs (LDPs), and Domain-Specific Programs (DSPs), concerns persist regarding their long-term effectiveness and scalability of the training and related outcomes (World Bank, 2022). These programs often remain episodic, happening sporadically, mainly for the documentation needs and insufficiently aligned with classroom challenges and associated realities.

© The Author(s) 2026

M. Raymer et al. (eds.), *Proceedings of 18th National IQAC Conference (ICon 2026) on Reimagining Quality Assurance in Higher Education: Technology, Inclusion and Outcome-Based Innovation*, Advances in Social Science, Education and Humanities Research 1033,

https://doi.org/10.2991/978-2-38476-618-5_22

This paper discusses and strongly suggests a transition toward **synchronous, continuous, scaffolded and microlearning-based capacity-building ecosystems**, grounded in actual need-based implementation, thus customizable and scalable pedagogical/andragogical practices.

2. Reviewing the conventional gains and pains amidst call of the change

Teacher's capacity and professional development

Effective teacher professional development is characterized by participant centric exploratory, experimentative and experiential approaches, sustained engagement through activity-based training, contextual relevance derived out of case studies, and collaborative learning (Darling-Hammond, 2020). However, traditional models of sporadic theme based FDPs with no or low impact analyses post the training often fail to ensure transfer of learning or gains by the teachers into their classroom practice as existing workload or work profile has limited space to incorporate newness, mis- match of the time period of the training in the academic session, limited learning capacities, limited extrinsic motivation and allied factors in terms of lack of accountability and absence of any impact analysis post the training.

Digital transformation and Pedagogical shifts

Digital transformation has reshaped and is bound to add the element of agility in teachers and their teaching practices, requiring them to integrate technology meaningfully (Bond et al., 2020). Frameworks such as TPACK emphasize the intersection of pedagogy, content, and technology (Mishra et al., 2022). These need to be more frequently incorporated into the teaching-learning practices. This calls for handholding, mentoring of teachers and space to fail and retry or remerge. Pedagogical shifts in higher educational setups is also significantly affected by peer collaboration, bottom-up approach of learning curve and space for appreciation and acceptance.

Microlearning

Microlearning aligns with andragogical (learning means by adults) principles by offering self-directed, flexible, and problem-centered learning experiences (Hodges et al., 2020). It has been shown to improve retention and engagement. It allows the learner to be more self-dependent, be self-aware and thus be more responsible to navigate learning.

AI in Education

Artificial Intelligence is increasingly positioned as a co-pilot in education, enabling personalization and adaptive learning (Luckin et al., 2022; Holmes & Tuomi, 2022). Presently this a vast area of more exploration and learning, adapting and emerging.

3. Methodology

This study adopts a **conceptual and practice-based approach**, drawing on:

- Design and delivery of customized, and well-spaced teacher training with reinforcement and impact analysis
- Drawing segments and takeaways from the data collected through digital tools and observations from cohorts with teacher-participants ranging from 12 -100 numbers in a batch
- Reflective practice by each participant and participants' feedback during, at the end and after some days (a week to 15 days)
- Analysis of engagement patterns in offline, online and in blended formats

The chosen methodology is interpretive, focusing on deriving and acquiring frameworks from lived practice of facilitation, and training rather than empirical experimentation.

4. Limitations of Traditional Capacity Building Models

Episodic nature

Most of the training episodes are primary source of the collected data, thus are sporadic, and only few are reinforced with impact analysis studies. As also reported by Darling-Hammond (2020), short-term interventions lack reinforcement, leading to low retention in the learning and limited cognitive engagement.

Limited contextualization

It's commonly observed that the conventional training especially on pedagogical and andragogical interventions is designed in generic rather than specific ways. While these are rarely customized, and have broad/wider coverage, leaving limited scope to cater to needs of participating teachers. Generic content reduces applicability across disciplines (World Bank, 2022).

Passive learning structures

Lecture-based approaches limit engagement (Bond et al., 2020) and is one of the huge limitations. Most of the training delivered in online mode are more commonly one way delivery of the contents. The offline mode has higher impact owing to higher scope of interactions and scope to ask and answer the questions and beyond.

Digital divide and disparity

The digital disparity as seen amongst participating teachers in terms of gadgets (hand-held devices/laptops and allied) along with the efficiency of using the same is widely seen. Most of the teachers are digital immigrants, thus need more support and scaffolding in being able to use digital and/or AI based tools and means. Bozkurt & Sharma (2020) have also reported the variations in digital competency affect learning outcomes.

5. Rethinking Capacity Building: Agile and Reinforced Learning

Teachers as co-learners: With high rate of disruption and fast evolving technologies, industry needs and rapidly changing market dynamics, teachers at HEIs also must adopt roles as co-learners and co-pilots. Fullan (2023) has indicated the same in his study while mentioning the need of fostering collaborative knowledge creation by the teachers.

Reinforced learning ecosystems: Learning should be continuous, iterative, and embedded within practice, then it's sustainable, else it can slowly become redundant. This was never more applicable than today.

Alignment with emerging needs: Capacity building in academia, particularly for those in HEIs, needs to integrate AI, sustainability (via SDGs and allied means) and digital pedagogy (UNESCO, 2023).

6. Suggested means to enhance the outcomes of enabling teachers' training

a. Microlearning as a scalable strategy: Microlearning, a strategic learning approach delivering learning content in small (bite sized, for a few minutes) and focussed means for specific learning objectives. It enhances retention, engages learners, and fits into busy schedules, making it ideal for today's training needs. Its commonly used formats are short videos, quizzes, text snippets, and games, thus offers a flexible and scalable alternative to traditional learning/training models. It has immediate applicability

Implementation in practice: Microlearning can be commonly used for Modular FDP structures, hands-on/tool-based demons, and the best being key reflective exercises.

Impact on engagement: Studies have indicated: Microlearning enhances participation and retention, particularly in large cohorts (Bond et al., 2020).

b. Exploratory and engagement-based pedagogies

Experiential Learning: One of the best ways to learn via enhancement cognitive engagement is learning-by-doing (experiential). Highly effective examples are working on case studies, applying simulations, gamification for revision or for enhancing challenges in an incremental way. Selwyn (2021) has documented the same in his research work.

Inquiry-Based Learning: To encourage critical thinking and problem-solving (Mishra et al., 2022), inquiring the matter in a systematic way has proven results.

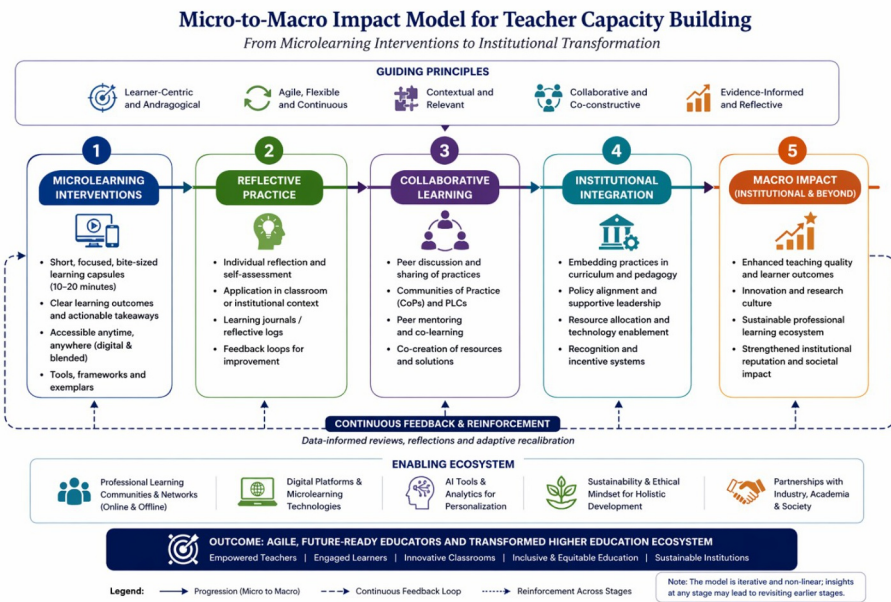
AI-enabled engagement: With emergence of AI tools, personalized and adaptive learning (Holmes & Tuomi, 2022) is coming up in a big way.

Integration of AI and digital pedagogy: AI is redefining teaching practices by enabling key newer means of learning and assessing the outcomes of learning via assessments. Today personalized learning pathways are a reality; assessments are being automated, new content generation through generative AI and making inclusive adoption of these AI tools and digital literacy at HEIs is paving new pathways of learning. These aspects have been discussed in the studies of Luckin et al. (2022) and Redecker (2021).

c. The Micro-to-Macro Impact Model: This conceptual paper proposes a five-stage model:

1. **Microlearning Units** – Short, actionable modules
2. **Reflective Practices** – Individual and peer reflection
3. **Collaborative Learning** – Communities of practice
4. **Institutional Integration** – Curriculum and policy alignment
5. **Macro Impact** – Enhanced student outcomes and institutional growth

This model bridges individual learning and systemic transformation {reference drawn from 3 stage model as indicated by Fullan (2023)}.



7. Discussion

The proposed framework addresses key gaps in traditional capacity building by reinforced learning via micro levels, enhancing the scalability, promoting the much-needed sustained engagement, and enabling the contextual applications of the learning. This makes it as a robust means of starting micro steps and aim the macro level

changes. It aligns with NEP 2020's emphasis on flexibility, interdisciplinarity, and outcome-based education (UNESCO, 2021). Following are the anticipated implications:

- a. **For Educators:** Teachers can adopt agile, reflective, and collaborative mindsets
- b. **For Institutions-** Embed microlearning into FDP design and promote peer learning ecosystems
- c. **For Policymakers:** Support continuous professional development models

8. Conclusion: Reimagining teacher capacity building requires a shift toward **continuous, microlearning-driven ecosystems**. By integrating AI, fostering collaboration, and promoting teacher agency, institutions can achieve sustainable transformation. The 'Micro-to-Macro Impact Model' offers an effective, scalable and adaptable framework for future-ready education, much needed in today's and emerging Indian panorama and Indian HEI ecosystems.

References

- Bozkurt, A., & Sharma, R. C. (2020). Emergency remote teaching in a time of global crisis due to Coronavirus pandemic. *Asian Journal of Distance Education*, 15(1), i-vi. <https://doi.org/10.5281/zenodo.3778083>
- Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020). Mapping research in student engagement and educational technology in higher education: A systematic evidence map. *Educational Technology Research and Development*, 68(4), 1863–1887. <https://doi.org/10.1007/s11423-019-09687-3>
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2020). Effective teacher professional development: A critical review of the research. *Educational Research Review*, 31, 100352. <https://doi.org/10.1016/j.edurev.2020.100352>
- Fullan, M. (2023). *The new meaning of educational change* (6th ed.). Teachers College Press. <https://doi.org/10.7312/full20000>
- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *Educause Review*. <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>
- Holmes, W., Tuomi, I., & Porayska-Pomsta, K. (2022). Artificial intelligence in education: Promise and implications for teaching and learning. *Computers and Education: Artificial Intelligence*, 3, 100037. <https://doi.org/10.1016/j.caeai.2022.100037>
- Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2022). *Intelligence unleashed: An argument for AI in education*. Pearson Education. <https://doi.org/10.4324/9781003033276>
- McKinsey & Company. (2023). *The future of learning and work: Implications for education systems*. McKinsey Global Institute. <https://www.mckinsey.com>
- Mishra, P., Koehler, M. J., & Cain, W. (2022). What is technological pedagogical content knowledge (TPACK)? *Journal of Education*, 193(3), 13–19. <https://doi.org/10.1177/002205741319300303>
- OECD. (2021). *Teachers and leaders in a changing world: TALIS 2018 results (Volume II)*. OECD Publishing. <https://doi.org/10.1787/19cf08df-en>
- Redecker, C. (2021). European framework for the digital competence of educators: DigCompEdu. *Publications Office of the European Union*. <https://doi.org/10.2760/159770>
- Selwyn, N. (2021). *Education and technology: Key issues and debates* (3rd ed.). Bloomsbury Academic. <https://doi.org/10.5040/9781350145586>

UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing. <https://unesdoc.unesco.org/ark:/48223/pf0000379707>

UNESCO. (2023). *Guidance for generative AI in education and research*. UNESCO Publishing. <https://doi.org/10.54675/UZOS7801>

World Bank. (2022). *Teacher professional development around the world: The gap between evidence and practice*. World Bank Publications. <https://doi.org/10.1596/978-1-4648-1919-3>

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2020). Systematic review of research on artificial intelligence applications in higher education. *International Journal of Educational Technology in Higher Education*, 17(1), 1–27. <https://doi.org/10.1186/s41239-020-00205-x>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

