Concept Note and Research Proposal

Integrating Digital & Livelihood Upskilling with Community Teaching: A Pilot to Improve Household Incomes and Learning Outcomes among Women Teachers from the Sundarbans

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Background & Rationale

In the rural Sundarbans, women serve as teachers in community-based coaching centres where primary school children access free education. These women face challenges such as limited digital literacy, minimal exposure to structured pedagogy, and restricted economic opportunities. Consequently, their teaching capacity is underutilized, and their households remain financially vulnerable.

This project introduces a **weekly urban training hub** in Kolkata, designed to combine **teacher upskilling** with **livelihood development**. By strengthening both income generation and teaching quality, the program aims to drive sustainable upward mobility for the teachers, their students, and the wider community.

Objectives

1. Equip women teachers with **basic computer and digital literacy**.

2. Strengthen **lesson preparation and pedagogy** to improve student learning.

3. Develop **livelihood and micro-enterprise skills** to diversify household income.

4. Create a **scalable model** linking women's empowerment, education quality, and community development.

Methodology (Pilot)

- **Participants:** 4 women teachers from rural Sundarbans.

- **Location:** Weekly 5-hour sessions at Kolkata office.

- **Activities (weekly):**

  - 1.5 hrs → Basic digital literacy training.

  - 1.5 hrs → Lesson preparation for coaching centre.

  - 2 hrs → Livelihood/enterprise training (production, small business skills).

- **Support package:** Lunch, travel reimbursement, stipend, partial teaching salary, seed funding, and technical mentoring.

- **Duration:** 12-month pilot with quarterly monitoring.

Expected Outcomes

- Teachers gain **functional digital skills** and weekly lesson plans.

- **Improved student engagement and learning** in literacy/numeracy.

- Women initiate **income-generating activities**, contributing to household resilience.

- Community members (parents, students) exposed to enterprise opportunities.

- Documented pilot model for replication across similar rural contexts.

Budget Snapshot (12-month pilot, 4 participants)

- Recurring support (stipend, travel, meals, salary supplements): ~ ₹3,00,000

- Seed funding & enterprise support: ~ ₹80,000

- Training materials, monitoring & administration: ~ ₹50,000
  Total Estimated Pilot Budget: ~ ₹4.3 lakh

Impact Potential

This pilot links **education, empowerment, and enterprise** in one model. By raising women teachers' skills and incomes, the project strengthens community education quality and builds pathways for **long-term upward mobility** in the Sundarbans. If successful, the model can scale to include more women, parents, and students, catalyzing a broader socio-economic transformation.

Research Opportunities

1. Introduction & Justification

Rural women, especially those in remote areas like the Sundarbans, often face multiple intersecting disadvantages: limited digital literacy, constrained economic opportunities, and under-resourced educational settings. Empirical literature indicates that women's educational levels amplify effects on child health and household wealth. For example, Miller et al. (2017) show higher women's education is significantly associated with better child growth (HAZ scores) and increased household wealth. PMC

Teacher Professional Development (TPD) that includes digital instructional integration and sustained mentorship improves teachers' attitudes, confidence, and usage of technology in instruction. A recent systematic review (Amemasor et al., 2025) finds that effective TPD programs are ones with hands-on digital training, collaborative environments, ongoing support, and relevance to teacher classroom needs. Frontiers

Moreover, livelihood interventions for women that integrate training, asset support, and market linkages have shown positive earnings and consumption effects when scaled. The "Supporting Women's Livelihoods at Scale" program in Zambia is one such example. NBER

Thus, integrating digital upskilling, teacher pedagogical support, and micro-enterprise/livelihood creation replicates evidence-based best practices and addresses gaps where combined interventions are fewer.

2. Research Questions

1. How does weekly training in digital literacy, pedagogical preparation, and livelihood skills affect the household income of participating women teachers after 12 months?

2. What impact does this integrated upskilling have on measurable student learning outcomes (literacy, numeracy) at their rural coaching centers?

3. What are the challenges and facilitators in sustaining both teaching effectiveness and small business activities of women teachers under this model?

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3. Methodology

Design: Mixed methods pilot (n = 4 women teachers) over 12 months, with baseline, midline (6 months), and endline (12 months) assessments.

Intervention Components:

- Weekly 5-hour sessions combining digital literacy (1.5 hrs), pedagogical preparation (1.5 hrs), livelihood/business training (2 hrs).

- Support: stipend, travel reimbursement, lunch, seed funding + technical assistance.

Data Collection:

- **For teachers:** digital competency tests, pedagogical practice observation, income tracking (from teaching + enterprise).

- **For students:** basic assessments in literacy and numeracy (baseline/midline/endline), attendance, engagement metrics.

- **Qualitative:** interviews with women participants, parents, and observations of business processes.

Comparison: Although the pilot may not involve a formal control group, teacher performance and student outcomes will be compared to baseline and historical data from similar coaching centers (if available). Qualitative data will help attribute causality, identify contextual constraints.

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4. Expected Outcomes

- Improved digital literacy and preparedness to use digital tools among teachers.

- Better lesson planning and pedagogy, as evidenced by teacher observations and student engagement.

- Increased household income via enterprise revenue + stipend/salary, potentially reducing economic precarity.

- Enhanced learning outcomes among students (improved literacy/numeracy scores) and stability of coaching attendance.

- Insights into scalability: what support, cost, and modifications are needed to expand to more teachers or even include students/parents.

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5. Evidence from Literature Supporting the Components

Component	Supporting Study & Findings
Digital Literacy & Digital Instructional Integration	Systematic review by Amemasor et al. (2025) shows TPD programs with hands-on digital training, ongoing support and relevance are more effective in improving teacher attitudes and actual usage of digital tools. [Frontiers](#)
Livelihood / Enterprise Support	"Supporting Women's Livelihoods at Scale: Evidence from a programme implemented by government of Zambia" (Botea et al. 2023) shows income and consumption increases from scaled livelihood program, especially when asset transfers and business support are included. [NBER](#)
Women's Traditional Economic Activities & Household Economy	Jabeen et al. (2020) in Pakistan find that rural women's small economic activities (stitching, poultry, home-based production) significantly contribute to household income and savings, and are constrained by market access and social norms. [MDPI](#)
Digital Literacy's Correlates & Predictors	Xu et al. (2025) in *Scientific Reports* (a high impact-open access journal) find that factors like self-efficacy, Internet attitudes, organizational support, and social media competence are strong predictors of digital literacy among teachers. [Nature](#)

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6. Proposed Timeline & Budget

- **Months 0-1:** Baseline data collection; recruitment; provisioning seed funding/tools.

- **Months 2-11:** Weekly interventions; midline at Month 6; ongoing mentoring; monitor enterprise progress.

- **Month 12:** Endline evaluation; cost‑effectiveness/lessons for scaling.

Estimated Budget: ~ **₹4.3 lakh** for 12-month pilot for 4 women teachers (as earlier estimated) — covering training, stipends, reimbursement, seed funds, monitoring.

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7. Significance & Innovation

- **Integration of multiple components** (digital, pedagogy, livelihood) in one weekly intervention is less common, especially with rural women teachers.

- Emphasis on teacher well-being and household income as a lever for improving education quality—moving beyond just inputs in the classroom.

- Local relevance: the Sundarbans context with high travel burdens, remoteness, and weak connectivity means findings will be especially valuable for similar geographies globally.

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8. Limitations & Mitigation

- **Small sample / absence of randomized control group** — limits generalizability; mitigate with rich qualitative data and baseline comparison.

- **High travel burden** — may reduce sustainability; consider occasional remote check-ins or rotating hub closer to participants over time.

- **Market risks for enterprises** — to mitigate: ensure early market testing, partnerships with local aggregators or buyer networks.

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9. References

1. Amemasor, S. K., Oppong, S. O., Ghansah, B., Benuwa, B.-B., & Essel, D. D. (2025). A systematic review on the impact of teacher professional development on digital instructional integration and teaching practices. *Frontiers in Education*. [Frontiers](#)

2. Botea, I., Brudevold-Newman, A., Goldstein, M., Low, C., & Roberts, G. (2023). *Supporting Women's Livelihoods at Scale: Evidence from a nationwide livelihood program implemented by the government of Zambia.* NBER Working Paper No. 31625. [NBER](#)

3. Jabeen, S., Haq, S., Jameel, A., Hussain, A., Asif, M., Hwang, J., & Jabeen, A. (2020). Impacts of Rural Women's Traditional Economic Activities on Household Economy: Changing Economic Contributions through Empowered Women in Rural Pakistan. *Sustainability*, 12(7):2731. [MDPI](#)

4. Miller, L. C., et al. (2017). "Women's education level amplifies the effects …" [child health, wealth, etc.] (PMC article) [PMC](#)

5. Xu, S., et al. (2025). "Exploring factors influencing digital literacy among higher-volume staff / teachers" *Scientific Reports*. [Nature](#)