Connected learning in disconnected spaces: the CLIx’ experience of designing learning technologies that work for all
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Abstract: In this presentation, drawing upon our experiences from a large scale technology enabled educational intervention - Connected Learning Initiative (CLIx) in India, we propound two arguments: first, pedagogic underpinnings of educational technologies play critical role in developing effective learning solutions; second, design considerations of technology architecture play vital role in creating transformative EdTech solutions.

Aproposing the arguments, we share the experiments and lessons learned from the design, development and deployment of gStudio powered CLIxPlatform - a Next Generation Digital Learning Environment (NGDLE) for school students and teachers. We would also demonstrate and discuss how thoughtfully designed open standards compliant, digital learning system architecture is engendering innovations for connected learning in disconnected space in the remote districts and underserved communities across India.

1. Pedagogic underpinnings shape the efficacy of EdTech solutions:
   - Empowered Teacher
   - QualityEducation
   - Collaboration
   - Learning from mistakes
   - Authentic Learning
   - Constructionism

2. Design:
   - Design Based Research (DBR)
   - Deploy & Implement
   - Review & Revise

2. The "Lego" approach of designing learning technologies:
   - We integrated existing/external open-source apps and created a mashup model of gStudio powered CLIxPlatform - a Next Generation Digital Learning Environment (NGDLE). Therefore, although CLIxPlatform may sound as a riveting (yet another platform!) it is, however, not a "walled garden". It allows interoperability. By making it compliant with open-standards such as LTI, QTI, OSI, SCORM and API we are ensuring that the CLIxPlatform become 100% interoperable with other open-standard compliant platforms.

3. Implementing connected learning in school:
   - OpenAssessments
   - Learning Apps
   - gStudio Platform
   - CLIx Learning Platform
   - demo-cliX.tiss.edu

4. Goal: Quality at Scale!

   RAJASTHAN
   - Schools: 300
   - Teachers: 101
   - Students: 1,000
   - Learning: 248
   - Adoption: 13,277
   MIZORAM
   - Schools: 200
   - Teachers: 80
   - Students: 15,000
   - Learning: 154
   - Adoption: 4400
   TELANGANA
   - Schools: 300
   - Teachers: 300
   - Students: 1,800
   - Learning: 1,589
   - Adoption: 36,000
   - Learning: 10,080
   CHHATTISGARH
   - Schools: 300
   - Teachers: 47
   - Students: 900
   - Learning: 139
   - Adoption: 27,000
   - Learning: 4680

5. Milestones:
   - Sept 2016
   - May 2017
   - June 2017
   - Sept 2017
   - June 2018

6. Features:
   - 1. Designed for collaborative and connected learning with interactivity:
     - Gallery, e-Notes, Workspace, Apps, Buddy, Feedback, co-creation features.
   - 2. A virtual maker-lab.
   - 3. Buddy-login with concurrent user login on single computer for collaborative learning.
   - 4. Rugged, Robust, Versatile. Aggregator:
     - CMS + LMS + OERrepository = LMX
   - 5. Open-source and open-standards compliant => interoperable.
   - 6. Lego modelled design - integrate, embed, extend.
   - 7. Supports internationalization and multilingualism.
   - 8. Learning data and analytics.
   - 10. Opportunistic use of internet for updating content and data collection.

7. Challenges:
   - 1. Inadequate ICT infrastructure inhibits outcomes.
   - 2. EdTech needs to take teachers along.
   - 3. Designing learning solutions for diverse learners and learning contexts especially in resource constraint.
   - 4. Making the design universal and accessible for all learners.
   - 5. Learning from learning analytics.
   - 6. Integrating ICTs in education is still a growing field and requires a pedagogical and policy shifts.

8. Proof of Concept(WIP):
   - Collaboration
   - Innovation
   - Research
   - Teacher
   - Scale
   - Adoption
   - Learning outcomes
   - Systemic change

References and Acknowledgement

The CLIx Learning Platform is a product of the Connected Learning Initiative (CLIx), an initiative led by Tata Institute of Social Sciences, Mumbai, India, the Support Centre for Digital Learning, University of California, Berkeley, and supported by the Bill & Melinda Gates Foundation (BMGF) through the Gating Innovation Research (GIR) Fund.

We sincerely thank CLIx technology team members whose collective work is depicted in this poster. We also thank other CLIx colleagues for review and feedback.

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References:
3. 2017 King Hamad Bin Isa Al-Khalifa Prize for the Use of Information and Communication Technology (ICT) in the field of Education.

Acknowledgement:

Tata Institute of Social Sciences, Mumbai, India
clix.tiss.edu

Winner of UNESCO’s 2017 King Hamad Bin Isa Al-Khalifa Prize for the Use of Information and Communication Technology (ICT) in the field of Education.

Innovation Research
Collaboration
Teacher
Research
Teacher
Adoption
Learning outcomes
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