Uptake of ICT: Challenges
- Lack of access and support
- Teacher beliefs
- Availability in local language
- Consumers vs. producers of knowledge
- Problem of scale and diversity

Uptake of ICT: What has worked?
- Access to computers for personal use
- Continuous engagement in networks
- Online courses

Research questions
1. In what ways and to what extent did the participating teachers engaged with the different modes of the course?
2. What were the outcomes of the teachers’ participation in the blended course?

Theoretical framework
- Technological pedagogical content knowledge (Mishra and Koehler, 2007)
- Mobile based chat groups to support community of practice (Wenger, 1988)
- Teachers learn in and from practice (Ball and Cohen, 1999)

Reflective mathematics teaching course
- Implementation across 4 states for around 600 teachers

Table 1: Teachers’ participation in Chat groups

<table>
<thead>
<tr>
<th>State</th>
<th>Members in chat based communities</th>
<th>Average post/week</th>
<th>Active members (Aug 2017-Mar 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG</td>
<td>28T + 20C</td>
<td>3.56</td>
<td>25</td>
</tr>
<tr>
<td>CG-NVS</td>
<td>23T + 25C</td>
<td>1.38</td>
<td>13</td>
</tr>
<tr>
<td>MZ</td>
<td>19T + 24C</td>
<td>0.25</td>
<td>13</td>
</tr>
<tr>
<td>RJ</td>
<td>64T + 12C</td>
<td>1.69</td>
<td>21</td>
</tr>
<tr>
<td>TS</td>
<td>416T + 20C</td>
<td>15.20</td>
<td>71</td>
</tr>
</tbody>
</table>

Table 2: Implementation of module in states

<table>
<thead>
<tr>
<th>States</th>
<th>CG</th>
<th>CG-NVS</th>
<th>MZ</th>
<th>RJ</th>
<th>TS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools with ICT labs ready</td>
<td>30</td>
<td>0</td>
<td>30</td>
<td>51</td>
<td>85</td>
</tr>
<tr>
<td>Module run in schools</td>
<td>17</td>
<td>0</td>
<td>26</td>
<td>29</td>
<td>26</td>
</tr>
</tbody>
</table>

Findings: Teachers’ engagement
- High participation during the workshop and low participation in online course but greater participation in mobile based communities
- Infrastructure challenges and need for technical support constrained implementation
- Teachers’ with high motivation, positive beliefs for use of ICT and high technical knowledge were able to do the online course and some extent of implementation
- Some teachers used ideas from student module in regular classroom teaching
- Teachers posted photos of student engaging with modules, engaged in conversations seeded every week through problems and discussed pedagogical issues

References:

Attributions for images:
Mobile Shopping List by Muharrem Fevzi Çelik from the Noun Project
discussion by ibnu nasakin hasanah from the Noun Project
e-learning by Delwar Hossain from the Noun Project