Understanding Pre-primary Quality in Tanzania

Data from the MELQO study

Tara Weatherholt, PhD
Objective

- Using MELQO classroom quality data from Tanzania to explore issues in equity in education
- Rich data set of quality of early learning environments
- How does pre-primary classroom quality in Tanzania differ by geographic location, specifically classrooms in urban and rural areas?
MELQO Overview

Overall Goals

• Promote feasible, accurate, and useful measurement of children’s development and learning and the quality of their pre-primary learning environments

• Designed to be implemented at scale with emphasis on feasibility for low- and middle-income countries

Tools

• Complementary suite of instruments
  – Child development assessment (MODEL)
  – Assessment of early learning environment (MELE)

• Rigorous adaptation and testing

http://ecdmeasure.org/melqo-overview
MELQO in Tanzania

- Conducted in April 2017
- 70 schools in Mainland Tanzania
  - 48 rural and 22 urban
  - Nationally representative at pupil-level
- Classroom observation of pre-primary quality (MELE)
  - Instruction
  - Interactions
  - Materials
Family SES by Urban/Rural School Location

- **High SES**
  - Rural: 19%
  - Urban: 81%

- **Low SES**
  - Rural: 85%
  - Urban: 15%
Poverty measure = 2010 estimates of proportion of people per 1km$^2$ living in poverty as defined by global MPI

http://www.worldpop.org.uk/data/summary/?doi=10.5258/SOTON/WP00290
# Measures of Quality

<table>
<thead>
<tr>
<th>Instruction (10)</th>
<th>Interactions (4)</th>
<th>Materials (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching of number concepts</td>
<td>Teacher engages in positive interactions</td>
<td>Writing utensils</td>
</tr>
<tr>
<td>Teaching of characteristics of objects</td>
<td>Teacher engages in negative interactions</td>
<td>Exercise books</td>
</tr>
<tr>
<td>Teaching of pre-writing skills</td>
<td>Children ask questions or express their ideas</td>
<td>Learning areas</td>
</tr>
<tr>
<td>Teaching of pre-reading skills</td>
<td>Teacher ignores children’s questions or statements</td>
<td></td>
</tr>
<tr>
<td>Children work alone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children work in small groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher works one-on-one</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher works with children as whole group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher conducts circle time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher individualizes instruction</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Findings for Instruction by Urban/Rural

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher works one-on-one</td>
<td>$X^2 (1) = 4.03, p = .05$</td>
</tr>
<tr>
<td>Teacher individualizes instruction</td>
<td>$X^2 (2) = 15.51, p = .00$</td>
</tr>
<tr>
<td>Teaching of number concepts</td>
<td>$X^2 (2) = 4.52, p = .12$</td>
</tr>
<tr>
<td>Teaching of characteristics of objects</td>
<td>$X^2 (2) = .11, p = .95$</td>
</tr>
<tr>
<td>Teaching of pre-writing skills</td>
<td>$X^2 (2) = 1.27, p = .53$</td>
</tr>
<tr>
<td>Teaching of pre-reading skills</td>
<td>$X^2 (3) = 6.57, p = .09$</td>
</tr>
<tr>
<td>Children work alone on their tasks.</td>
<td>$X^2 (1) = 0.47, p = 0.49$</td>
</tr>
<tr>
<td>Children work in pairs or small groups</td>
<td>$X^2 (1) = 0.81, p = 0.37$</td>
</tr>
<tr>
<td>Teacher works with children as whole group</td>
<td>$X^2 (1) = 1.45, p = 0.23$</td>
</tr>
<tr>
<td>Teacher conducts circle time</td>
<td>$X^2 (1) = 0.54, p = 0.54$</td>
</tr>
</tbody>
</table>
Teachers work one-on-one with children.

Significantly more urban classrooms were observed to have teachers working one-on-one with pupils than rural classrooms.

$X^2 (1) = 4.03, p = .045$
Teacher individualizes instruction and interactions to meet the needs and abilities of all children.

Significantly more rural classrooms were observed to have teachers show no awareness of students with different needs, as compared with urban classrooms.

![Bar chart showing the comparison between urban and rural classrooms.](chart.png)

- **Urban (n=22)**
  - 27% show no awareness
  - 64% occasionally support
  - 9% support

- **Rural (n=48)**
  - 67% show no awareness
  - 17% occasionally support
  - 17% support

\( X^2 (2) = 15.51, p = .00 \)
## Findings for Interactions

<table>
<thead>
<tr>
<th>Interactions</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children ask or express their ideas</td>
<td>$X^2 (1)= 4.48, p = .03$</td>
</tr>
<tr>
<td>Teacher engages in positive interactions</td>
<td>$X^2 (2)= 0.81, p = 0.7$</td>
</tr>
<tr>
<td>Teacher engages in negative interactions</td>
<td>$X^2 (3)= 1.33, p = 0.7$</td>
</tr>
<tr>
<td>Teacher ignores children’s questions or statements.</td>
<td>$X^2 (1)= 0.33, p = 0.6$</td>
</tr>
</tbody>
</table>
Children ask questions or express their ideas.

45% of urban classrooms were observed to have children to ask questions or express their ideas compared to 21% of rural classrooms.

\[
X^2 (1) = 4.48, \ p = .03
\]
# Findings for Materials

<table>
<thead>
<tr>
<th>Materials</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing utensils</td>
<td>( t = 2.21, p = .03 )</td>
</tr>
<tr>
<td>Exercise books</td>
<td>( t = 2.27, p = .03 )</td>
</tr>
<tr>
<td>Learning areas</td>
<td>( X^2 (1) = 10.64, p = .001 )</td>
</tr>
</tbody>
</table>
Average percent of class that has exercise books.

Urban classrooms have exercise books for a significantly higher mean percentage of their pupils than rural classrooms.

- Urban: 46%
- Rural: 24%

$t = 2.27, p = .03$
Average percent of class that has writing utensils.

Urban classrooms have writing utensils for a significantly higher mean percentage of their pupils than rural classrooms.

* t = 2.21, p = .03
Is the classroom organized to have learning areas?

More classrooms in schools in rural locations were observed to have learning areas than those in urban schools.

\[ X^2 (1) = 10.64, \quad p = .001 \]
## Summary of Findings

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Interactions</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching of number concepts</td>
<td>Teacher engages in positive interactions</td>
<td>Writing utensils</td>
</tr>
<tr>
<td>Teaching of characteristics of objects</td>
<td>Teacher engages in negative verbal interactions.</td>
<td>Exercise books</td>
</tr>
<tr>
<td>Teaching of pre-writing skills</td>
<td><strong>Children ask or express their ideas</strong></td>
<td>Learning areas</td>
</tr>
<tr>
<td>Teaching of pre-reading skills</td>
<td>Teacher ignores children’s questions or statements</td>
<td></td>
</tr>
</tbody>
</table>

- **Children work alone**
- **Children work in small groups**

**Teacher work one-on-one**

**Teacher individualizes instruction**

**Teacher conducts circle time**

**Teacher works with children as whole group.**
Discussion of Findings

• Instruction
  • Little variation in teacher practice overall
  • Urban teachers slightly more skilled in difficult pedagogical techniques

• Pupil-Teacher Interactions
  • Teacher-led interactions are consistent across urban and rural areas.
  • Difference found in child-led interaction.

• Materials
  • Rural classrooms are under-resourced in certain types of materials (e.g. exercise books, writing utensils) but do have learning areas which can rely on local materials (e.g. stones)
  • Overall, observational data showed that very few classrooms used the learning areas [n=3 (4.3%) of classrooms].
Cultural norms of children’s behavior

• Children asking questions and expressing ideas is more common in urban classrooms than rural

• Emerging research on cultural norms
  • Study in the Gambia: Qualities such as respectfulness, obedience, and being dutiful are less commonly cited by caregivers to describe children who have lived in the city versus children who have not lived in the city (Jukes, Zuilkowski, & Grigorenko, 2017).
  • Study of socio-emotional characteristics in Tanzania: Differences in the value of curiosity in children between teachers and caregivers between urban and rural (Jukes et al., 2018)
Conclusion

• Overall, quality in urban and rural schools in our sample is similar.

• Inequitable quality favoring urban classrooms
  • Teachers’ practices reflecting individual attention to children
  • Materials found in stores

• Cultural differences by urban and rural location of schools may influence aspects of critical thinking and curiosity
Special Thanks

• Ministry of Education, Sports, and Technology of Tanzania
• UNICEF
• World Bank
• Dubai Cares
• DataVision, International
Partners and collaborators

• Brookings Institution
• INEE
• International Rescue Committee
• New York University
• PAL Network
• RESULTS
• RTI International

• UNESCO
• UNESCO Institute for Statistics
• UNHCR
• UNICEF
• USAID/ ECCN
• University of Arizona
• Wittgenstein Centre
• World Vision
Steering Committee

• Carina Omoeva, FHI 360 (Co-Lead)
• Eric Eversmann, Save the Children (Co-Lead)
• Carol da Silva, Save the Children
• Stephen Luke, FHI 360
• Amy Mulcahy-Dunn, RTI
• Anne Smiley, FHI 360

• Communications Coordinator:
  • Jane Sullivan

LEARN MORE:
www.educationequity2030.org

FOLLOW US
@equity2030  |  #equity2030

SUPPORT US
educationequity@fhi360.org
THANK YOU!

LEARN MORE
www.educationequity2030.org

FOLLOW US
@equity2030  |  #equity2030

SUPPORT US
educationequity@fhi360.org