XCOT:
X-Standard, X-Classroom Observation Technology

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Clearwater Program Evaluation

GeoCACHE (ATE 1304872) Mesa Community College/ N. Ariz. University
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Virtues of Observation in Evaluation

- Face Validity
- Addresses Complex Experience
- Easy to Communicate
- Fills Critical Role in Logic Models
- Allows Quantifying Quality
- Appropriate for “Practice” Standards
Observation Vices

Inter-rater Unreliability
Unrepeatable Events
Poor Variable Specification
Cumbersome Data
Time Intensive
XCOT Approach to Observation

- Compact **presentation** of variables
- Simple **recording** on tablet or laptop
- Links between **standards** and **classroom characteristics**
- Automated data **aggregation** and **scoring**
- **Inexpensive**, available technology
- **Adaptability** to new contexts
- **Training** in context
Using the XCOT to *describe* lessons:

- % time spent in each role, grouping, and technology use
- % of the class engaged
- Total standards addressed
- All narrative notes
Using the XCOT to analyze lessons:

• Correlations / proportions. *(To what extent is lesson engagement related to teacher roles or classroom configurations?)*
• Predictions. *(Does frequency of professional development predict the likelihood of addressing standards in the classroom?)*
• Comparisons. *(Are more standards addressed by different groups or over time in the same group?)*
• Exploration. *(How do teachers explain changes in observed practices?)*
• New ideas. *(What would it take at middle grades to increase student abilities to demonstrate standards in high school?)*
Change in Standards, Teacher Roles, and Technology Use, 2013-2015

Fig. 1: # Standards Addressed

Fig. 2: Teacher Roles

Fig. 3: % Time with Technology Use
Training approaches

In-school, real-time

- Observe in pairs
- Discuss differences
- Repeat each period, rotating pairs
- Analyze inter-rater agreement
- Revisit/revise training and/or protocol

<table>
<thead>
<tr>
<th>Period</th>
<th>Teacher</th>
<th>Observers</th>
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</tr>
<tr>
<td>5</td>
<td>2</td>
<td>1,4</td>
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</tbody>
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Substitutions to cover additional standards and observers.

- Videos
- Lesson plans
- Scenarios
Training target
Agree on 80% of indicators on first rating.*

*(Not a statistical limit, just a practical level that experience shows can usually be resolved in discussion and review of standards.)*
For More Information:

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