

CLOUD BASED LEARNING PLATFORM

Milestone 5 Update

Grant # AID-OAA-F-13-00033

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Update on project implementation including any challenges encountered, and plans to mitigate them.

All milestone deliverables have been achieved, expect for receiving scores of first mid-term examinations.

Challenges Encountered: We are unable to utilize the examinations conducted at the first school site. Pixatel will be conducting examinations of the Treatment and Control groups moving forward to ensure validity of results. The first test is scheduled for October.

Delivery of report outlining results of teacher training, kicking off pilot at 2nd school site.

Teacher training was conducted in March by Prof. Supreet Kaur and follow-up training has been conducted by Jasjit Singh, SVP of Pixatel Field Operations over the past month. Below is the protocol that has been finalized for the second school site. Additional training was conducted by Prof. Heather Schofield during her field visit in August.

The tablets have been installed in a classroom dedicated for tablet usage. Math class will be held in this room. The room has a blackboard (for traditional instruction) as well as the tablets set up. The teacher will have the flexibility to decide what portion of class time to dedicate to instruction on the chalk board and practice on the tablets.

A Pixatel field staff member will be based at the school. This person will ensure the tablets are fully charged, trouble shoot problems during the initial piloting period, and manage the syncing of tablets with the cloud server. This will help ensure that we receive early indicators of any issues.

Tablet Installation

- 35 Tablets have been installed in the dedicated classroom for mathematics instruction and will be used by students in grades 3, 4, 5.
- Wifi is accessible in the classroom for syncing the software with the Cloud Platform
- Each student in the treatment group has been assigned to a tablet based on their Roll Number.

Time Allocation

Class time is structured so that students spend 35-minute periods on a given subject each day. The teacher will assign treatment group students tablet instruction time on an average of three days a week for half of the class time.

Monitoring Protocols

- Each student has been assigned a unique userid and password to access the application.
- The software and the cloud platform will monitor how often the tablets are used and track each student's progress.
- Each teacher will be able to view student progress on a daily basis and monitor areas where students are exceling or doing poorly.

Integrate Punjab Board Standard into application.

Punjab Board Curriculum has been integrated with the Math Whiz application

Delivery of first midterm exam scores highlighting student status at 1st school site.

This has been pushed to October. The school administered exams but teachers gave different test to each section, different standards were used for grading and some sections were not given sufficient time to finish the exam. To address this issue for the future, Pixatel has instituted a protocol with school administration to have Pixatel staff work with teachers to conduct future tests to ensure validity of the results.

Phase 2 (Curriculum integration and field visits) completed.

Phase 2 Curriculum integration has been completed. Prof. Heather Schofield, from University of Pennsylvania, who is part of the Monitoring & Evaluation team, did a field visit at both schools in August. Her notes based interviews with teachers, administration, and students is included as Appendix 1 to the report.

Delivery of Platform support for managing multiple school standards.

Functionality to support management of multiple school standards has been integrated into the application. Screenshots of the editor are included below:

Image 1. Curriculum Editor

PIXATEL Organization **Curriculum** Settings Logout: pixadmin

Curriculum

Search For Curriculums

Templates Class Curriculum

Curriculum Name	Status	Type	Action
Grade 3 Curriculum Template	Active	Template	    
Grade 4 Curriculum Template	Active	Template	    
Grade 5 Curriculum Template	Active	Template	    

Image 2. Category Definition

PIXATEL Organization **Curriculum** Settings Logout: pixadmin

Grade 3 Curriculum Template

Edit Categories

[+ Create Category](#)

Category	Action
Shapes	   
Data Handling	   
Patterns	   
3 Digit Numbers	   
Addition	   
Subtraction	   
Addition & Subtraction	   
Multiplication	   
Division	   
Measurement	   
Money	   

Image 3. Subcategory Definitions

PIXATEL Organization **Curriculum** Settings Logout: pixadmin

Grade 3 Curriculum Template > 3 Digit Numbers

Edit Subcategories

[+ Add Subcategory](#)

Subcategory	Action
Read and Write 3 Digit Numbers	    
Comparing numbers	    
Place and Face Value	    
Even and Odd Numbers and Skip Counting	    

Image 4. Achievement Definitions

PIXATEL Organization **Curriculum** Settings Logout: pixadmin

[Grade 3 Curriculum Template](#) > [Shapes](#) > Identifying Shapes

Achievements

[+ Create New Achievement](#)

Active Disabled [Filter](#)

Achievement Info				Achievement Criteria				
Name	Text	Icon	Status	Mastery Index	Score	Complexity Score	Num. Quizzes	Action

Appendix 1

Punjab Field Visit notes from Prof. Heather Schofield.

- **Non-cognitive skills might also improve**
 - After the visit, I'm definitely more convinced that use of the tablet may improve both confidence and attention span. There seem to be multiple pathways for this. For example, kids were often really on the spot in the traditional model teaching where the teacher would ask individuals to stand up and respond to a question or work it out on the blackboard. Many students just seemed too intimidated by being in front of the class to even try and guess. Tablets made it much less stressful to just try and work the question out even when they weren't certain. So, there is not only the reinforcement of doing well because the questions have dynamic difficulty, but also, because ex ante students have potentially greater willingness to try in the first place.
 - Teachers also mentioned other positive changes in non-cognitive skills. For example, they mentioned that the most disruptive students had become much calmer and less likely to disturb others. However, the structure of the room may also have influenced this as well because students were spread around the outer edge of a big room. But, regardless there were positive spillovers to all of the children in the room from the improved behavior and focus.
 - Finally, a catchy phrase that a teacher used was that the tablets helped kids get over "math-phobia" and enjoy the material rather than find it daunting.

- **Other potential benefits**
 - Teachers also mentioned that students really enjoyed using the tablets and so were more likely to attend. Given that baseline attendance rates are typically around 80-85% there is substantial scope to improve.
 - Students were more likely to do their homework. Again, we'll need to dig into whether this is due to assigning less homework when students get a lot of practice from the tablets or whether it is due to students being more motivated and finding the work less taxing, but it was interesting to hear multiple teachers report this.
 - An interesting comment from a teacher was that knowing the immediate feedback of getting the answer right/wrong was coming very soon made a big difference to the focus the kids had in approaching the questions. This is in sharp contrast to homework which might often be graded a few days later. It was really pretty incredible how focused the kids were on the tablets.

- **Helping those who are furthest behind the most**
 - A few teachers mentioned that the weakest students are both benefiting the most from the tablets. There seemed to be a few factors contributing to this:
 - The dynamic difficulty of the tablets let them start at a level more suited to them rather than the "average" student who the teacher was typically targeting in practice with the whole class.
 - As above, these students seemed more comfortable trying to work through things at their own pace without people watching.
 - The positive feedback from doing well on something made them really excited to practice and learn. Sometimes students would stand up and call the teacher over just to show her how well they had done on something.

- **Tablets help teachers use classroom time more effectively.**
 - Periods are quite short (about 35 minutes) so teachers don't have a lot of time to provide instruction and practice.
 - The typical methods of practice are: 1) to ask a question and everyone responds in unison, 2) have a single student respond in front of the whole class, 3) have each student work in a notebook which the teacher then checks one by one. All of these methods are incredibly slow. In the non-tablet classrooms we observed, classes typically completed about 5 or 6 practice questions. The classes with tablets made it through at least twice as many.
 - The technology also saves teacher time in checking the students' practice since the computer does that automatically. So, the teachers were able to provide more detailed feedback and explanations in those classes.