

Poster: Testing the Efficacy of an SMS-Based Tutoring System

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Abstract:

This research project will explore the use of SMS messages as a means to measure student learning outcomes as well as the potential of a virtual tutoring system for primary school students. The main objectives of the research are to assess: (a) whether student learning outcomes can be remotely measured via SMS as a substitute to standardized testing, (b) check if SMS-based tutoring can help improve student learning outcomes, and (c) whether SMS based tools can improve parental involvement in student development in underserved areas.

Introduction:

It is difficult and costly to frequently conduct standardized assessment. Low cost mobile phone technology can be used to conduct standardized assessments more frequently. The focus of my research is testing the efficacy of an SMS-based testing and tutoring system in an underserved community setting.

Research Design:

- The sample population consists of two public schools and our target group is students who have recently been promoted to grade 5.
- Consent forms and basic biographical and socioeconomic details have been collected from 85 parents thus far.
- A base line survey has been conducted to measure current learning level of students in English and Mathematics.
- We have divided the student sample into three groups: Experimental group A (SMS Based Testing & Tutoring), Experimental Group B (only SMS Based Testing), and Control Group C (no SMS Based testing or tutoring).
- Robocalls + SMS based testing/tutoring will be conducted for 2 months where two remote quizzes will be conducted per week per subject.
- An end line survey will be conducted to measure the learning outcomes at the end of the experiment and we will analyze the possible findings.

Procedure:

Software has been developed for initiating the SMS based quiz and tutoring. Software is working as follows:

1): Teacher initiates a session by writing (grade level and subject) e.g. 5 E ('5' represent 5th Grade & E represent

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English Subject) and Sending the message on a given number.

2): Teacher gets a list of topics via SMS and selects the Serial Number of the topics.

3): Teacher replies with topic serial number via SMS.

4): Teacher gets a response that the topic and its related questions have been sent to her/his students.

5): A robocall is initiated to the contact numbers of the parents of the students in the class. The content of the robocall explains the purpose of the test, and requests parents to hand the phone to their child.

6): Questions are sent via SMS and the child has to respond to the question via SMS within a given time period.

7): If student gives a wrong answer to the question, a tutor tip will automatically be generated and sent via SMS (to Group A only), and the next question will be easier. If the student gives a correct response, the next question that is slightly more difficult is sent via SMS. Each quiz has 5 questions.

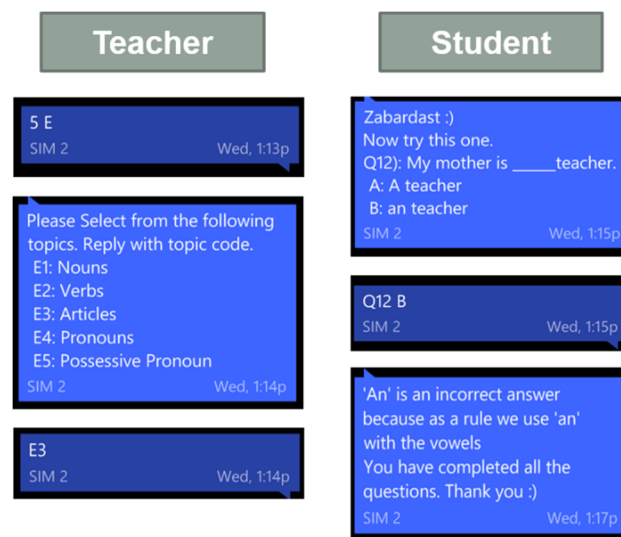


Figure 1: Screenshots of SMS based quiz

Progress and Future Work:

The software system has been designed and tested. Figure 1 shows screenshots of the flow of the system. A databank of SMS length questions created for English and Mathematics by the Punjab IT Board with knowledge experts will be used. After a two-month pilot, an endline survey will be conducted, and the results will be published.