#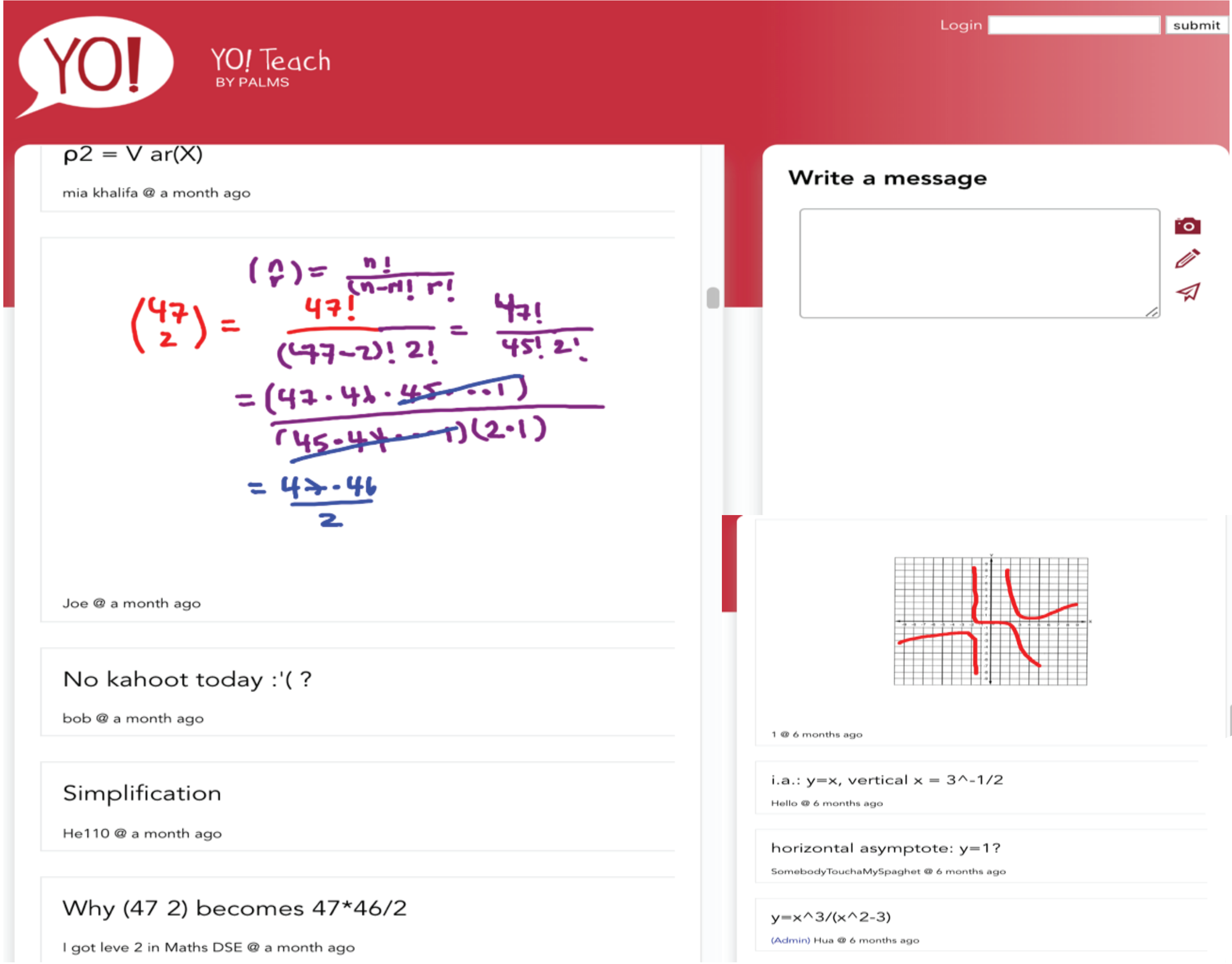 ENHANCING STUDENT ACTIVE LEARNING IN LARGE STEM RELATED CLASSES THROUGH WRITING EQUATIONS AND DRAWING DIAGRAMS USING YOTEACH! AND BADABOOM!

PALMS
Centre for Pedagogic & Active Learning Mobile Solutions
教學與主動學習流動解決方案中心

Dr. Fridolin S.T. TING, Dr. Ronnie H. SHROFF, Lok WONG, Lok; Ndudi EZEAMUZIE, Carter W.H. LAM, Jane, Y. LU

Abstract

It well known that scientists and engineers communicate with each other, with not just the oral and written language, but with equations and diagrams. It is no wonder that STEM related subject teachers and students rely heavily on equations and diagrams when they teach and learn their subject, respectively. However, due to the multitude of problems encountered when teaching large STEM related classes (e.g., low student engagement, limited options for checking student understanding and feedback (in real-time), diversity of students), there is a stark absence of students communicating and engaging with their instructor (or with other students), in class, through the writing of equations and the drawing of diagrams. In this poster, we will describe two new e-tools that will help the teacher and student actively teach and learn in a large STEM related subjects through writing equations and drawing diagrams called YoTeach! and Badaboom! YoTeach! is a web-based online backchannel with drawing functionalities (yoteach.hk) and Badaboom! is a Kahoot! like web-based game learning platform with math/symbol/writing recognition functionality (badaboom.hk). We will show how to use YoTeach! to enhance the simple "question and answer" active teaching strategy; and how to use Badaboom! to increase "problem based collaborative learning" active pedagogy in a large classroom.

YoTeach! By PALMS

Please go to : www.yoteach.hk
TRY IT NOW

BADA BOOM!

Inspired by the gamified quiz app, Kahoot!, "Badaboom", is a game-based classroom response system that integrates a "game approach" into the traditional lecture class by incorporating different gaming elements such as goals, rules, competitions, timing, reward structures and feedback through problem-solving activities.

NEW FUNCTIONS ON YOTEACH! CLOUD

NEW FUNCTIONS

DELETE ROOMS
As an administrator, you can delete your own rooms anytime.

DOWNLOAD TRANSCRIPTS
As an administrator, you can download your transcripts of your room anytime, and its totally free!

QR CODE
Generate and make available a unique QR code for your students to access your room.
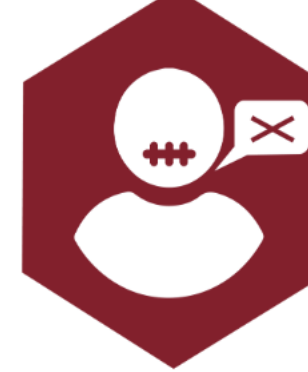
LIKE COMMENTS/ QUESTIONS BUTTON
You can "like" a comment and questions in a room. The comment or question with the most likes may go to the top of the page, if you are in the "voting room" mode.

VOTING/CHATROOM MODE
As an administrator, you can choose either to be in the regular "chatroom" mode, or the "voting" room mode (where students can "like" a comment or question).

ADDITIONAL - TEACHER FEATURES

MUTE STUDENTS AND DELETE MESSAGES
If your students are not using YoTeach! respectfully, you can mute students and/or delete their messages.

STUDENT PARTICIPATION STATISTICS
You can access students' total number of comments and questions on YoTeach! for participation marks.
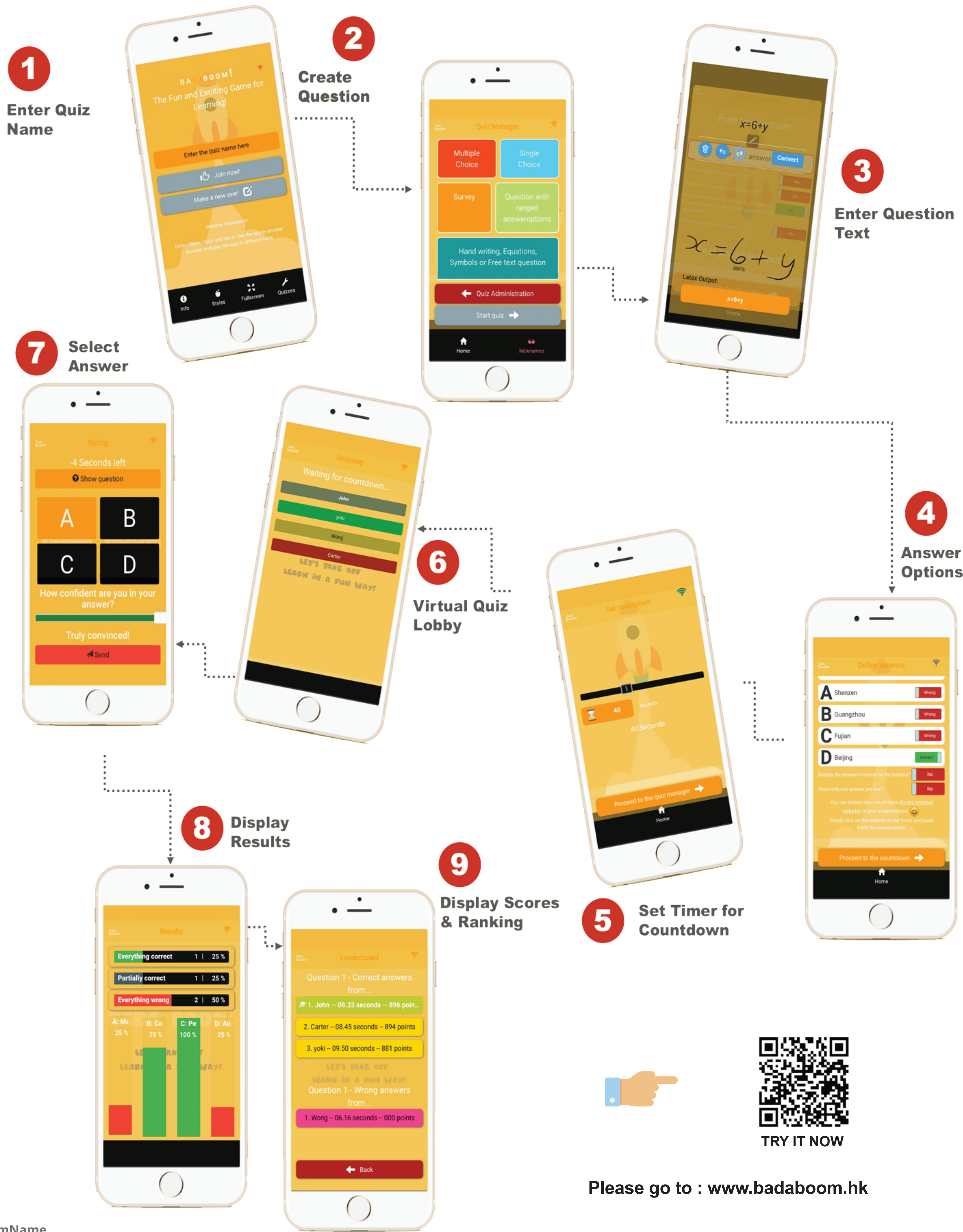
ANNOTATE ON TOP OF MESSAGES/IMAGES
You can click on a message/image and write on top of the message/image to collaborate more constructively by drawing.

SEMI PRIVATE ROOMS
Make your room more private by clicking "Avoid Search", and to access your room after, please go to https://palms.polyu.edu.hk/yo/**YourRoomName**

Badaboom! workflow

1. Enter Quiz Name
2. Create Question
3. Enter Question Text
4. Answer Options
5. Set Timer for Countdown
6. Virtual Quiz Lobby
7. Select Answer
8. Display Results
9. Display Scores & Ranking

Please go to : www.badaboom.hk
TRY IT NOW

Acknowledgements

Collaborating Partners

THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學

PALMS Pedagogic & Active Learning Mobile Solutions 教學與主動學習流動解決方案中心

Educational **D**evelopment **C**entre

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