

Using uReply activity in an introductory first aid casualty scenario game for junior secondary school students

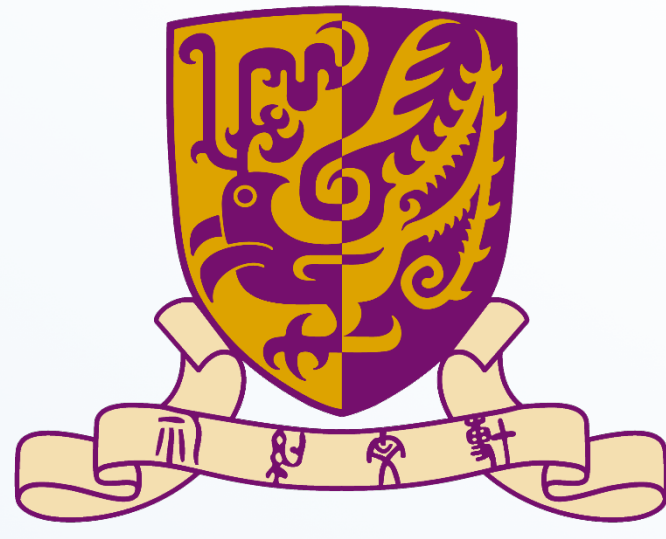
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Introduction

Game-based learning for small group classes can foster active and experiential learning, teamwork, problem solving and critical thinking skills.¹

Educational goals of first aid training for junior secondary school include knowledge and skills in calling emergency number, choking, recovery positioning, wound and burn care, stopping bleeding and managing minor injury to bones, muscles or joints.²

We developed and assessed a 2.5 hour introductory non-resuscitative first aid course for 140 secondary school students (11-12 years old). This included a 0.5 hour game-based formative assessment component, designed to facilitate student's integration and application of first aid knowledge and decision-making skills.

First aid casualty scenario game

After practical first aid skills training (1.5 hours) by volunteer physicians, students formed small groups (4-7 students/team) to compete with one another by responding to a case study scenario (Table 1). Each group answered 8 multiple choice questions (MCQs) using uReply (single-item session component) on iPad devices. This was followed by instructors assessing students' role play of injured classmates and first aid responders for treating minor abrasions, ankle sprain, choking and scald injury using first aid kits.

Table 1. Game-based (formative assessment) casualty case study scenario

Scenario		
You and your classmates are going camping in Sai Kung Country Park on a sunny day. Suddenly, one of your classmate sprains his ankle while hiking and falls down. He has abrasions to both knees. At lunch, another classmate chokes when eating a fish-ball. A third classmate accidentally pours boiling water onto his forearm, resulting in second degree scald (burn) injury. How would you respond?		
MCQs (Choose the best answer)	Responses (*correct answer)	
Q1. Which of the following is not an objective for first aid?	A. Confirm patient is dead*	B. Preserve life
Q2. What is the most important first step when performing first aid treatment?	A. Assess airway of patient	B. Count number of patients
Q3. Which of the following injuries has the top priority to receive treatment?	C. Prevent worsening of injuries	D. Prepare first aid equipment
Q4. What is the most effective way to stop bleeding?	C. Assess scene safety*	D. Direct pressure*
Q5. Cyanosis refers to the mouth and mucosa of patients turning into what colour?	A. Knees abrasion	B. Forearm scald injury
Q6. Which of the following is not an ideal improvised dressing?	C. Choking*	D. Sprained ankle
Q7. Which of the following is not a correct management for ankle sprain?	A. Indirect pressure	B. Direct pressure*
Q8. Which of the following is an appropriate management for scald wound?	C. Cover wound	D. Haemostatic powder
Q9. Minor abrasions to knees	A. Yellow	B. White
Q10. Ankle sprain	C. Red	D. Blue*
Q11. Choking	A. Clean bed sheet	B. Clean handkerchiefs
Q12. Scald injury	C. Plastic bag*	D. Clean towels
	A. Massage ankle*	B. Rest ankle
	C. Ice compression	D. Elevate ankle
	A. Puncture blister	B. Apply soy sauce onto wound
	C. Irrigate wound with plenty of running water*	D. Tear off clothing sticking on wound
	Correct treatment (instructors mark Pass/Fail)	Total score: ____/12

Experience of secondary school students

- During the morning session, 70 students (12 small teams) used the uReply software together in a large learning space classroom. Of the 8 groups that answered all 8 MCQs correctly (Figure 1), Team "MarieCurrie" was the fastest.
- Due to unforeseen changes, 70 students (12 small teams) in the afternoon session completed all MCQs on paper with their allocated instructors in their individual classrooms. All 24 teams completed ≥2 of 4 skills assessments satisfactorily (Figure 2).
- The median (IQR) team score was higher using the uReply software compared to the paper format (12 [10-12] versus 10 [9-11]; Figure 3).
- Most students (95%) strongly agreed or agreed to the statement "The course learning outcome to perform first aid to deal with choking, bleeding, sprain/strain and burns was met."

Figure 1. Student small group ranking results after completing 8 MCQs.

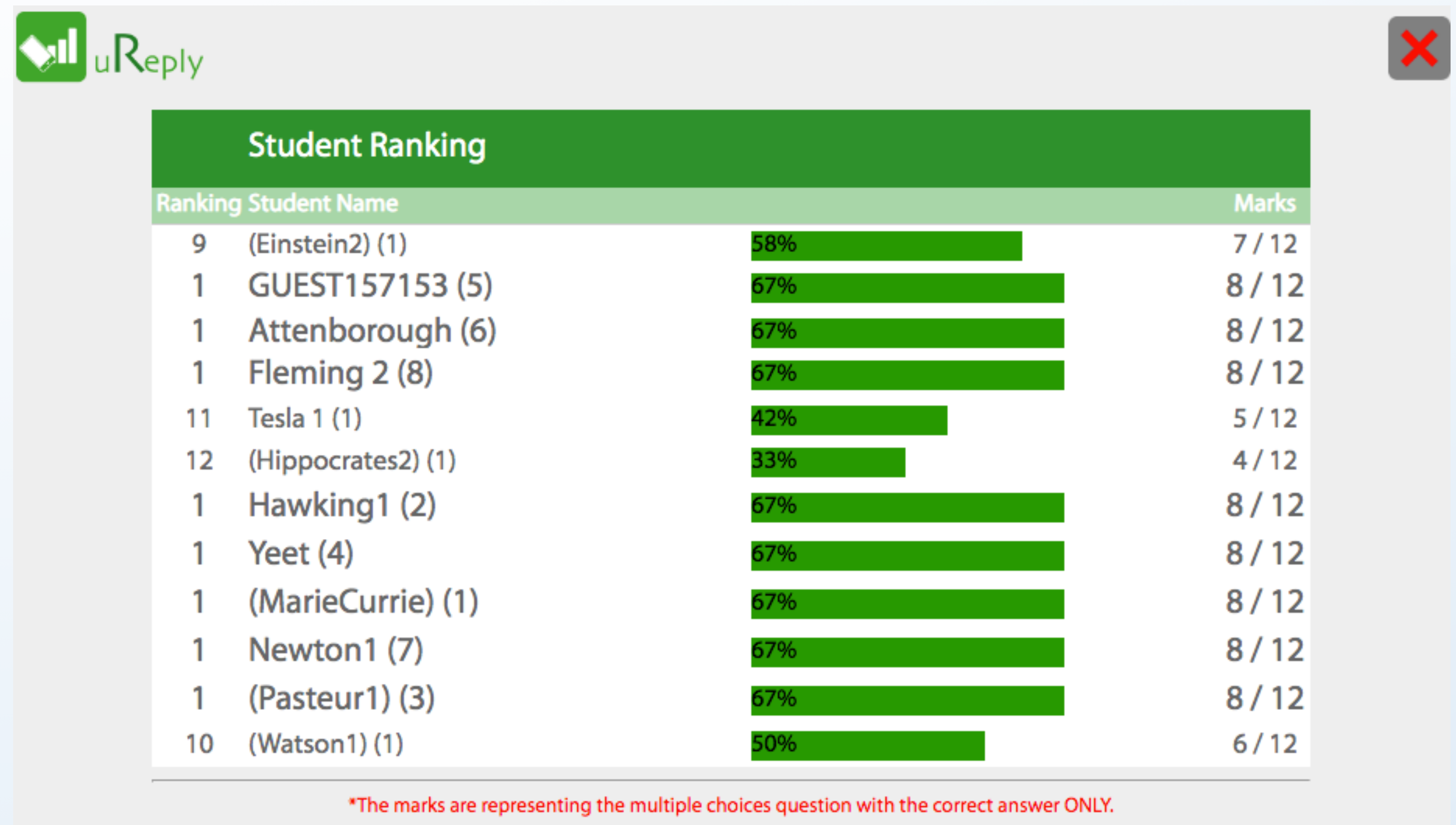


Figure 2. Formative first aid skill assessment of students by an instructor

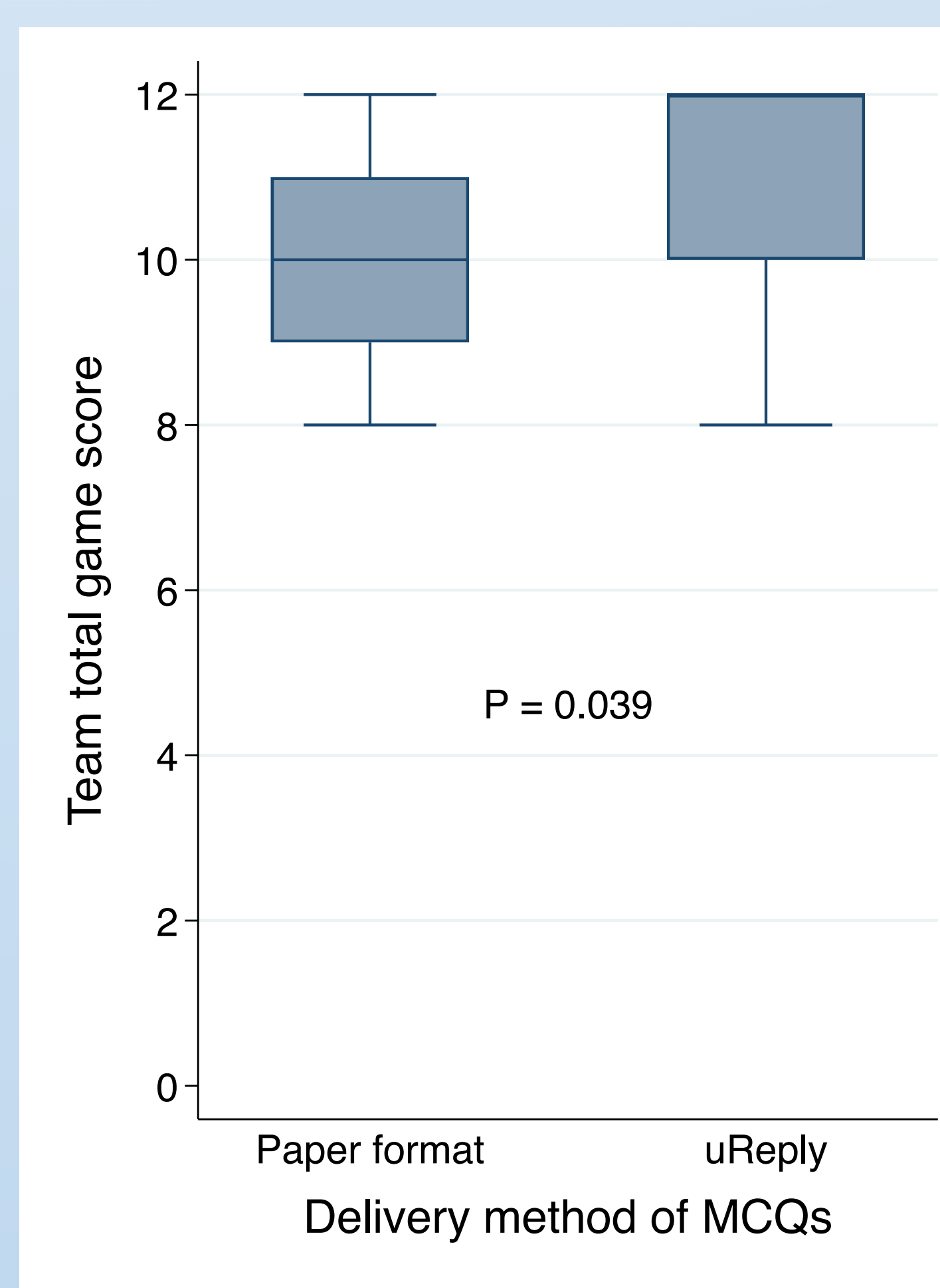


Figure 3. Box plots showing difference in team total game score by delivery method of multiple choice questions, adjusted for within team correlations

Further improvements

To enable more flexibility for teams to work at their own pace competitively, uReply activity ranking in the multiple-item session component is suggested in the next update.

References

1. Patel J. Am J Pharm Educ 2008;72:21.
2. De Buck E, et al. Resuscitation 2015;94:8-22.

Acknowledgement

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Contact us

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