Pharmopoly: Gamification in MPharm teaching

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Gamification is the use of game mechanics to promote engagement and enjoyment in a variety of tasks for the purposes of learning. This interactive and collaborative approach when applied to healthcare education improves student knowledge and understanding, and further develops communication and interpersonal skills in a range of settings. The benefits of these activities rely on well-designed games, based on the "laws of learning" and the "laws of good game design"

Aims: The aim of this project was to enlist final year MPharm students to develop a pharmacy-based game that provide an interactive, peer led learning activity, to increase student engagement and attainment within key areas of the MPharm curriculum.

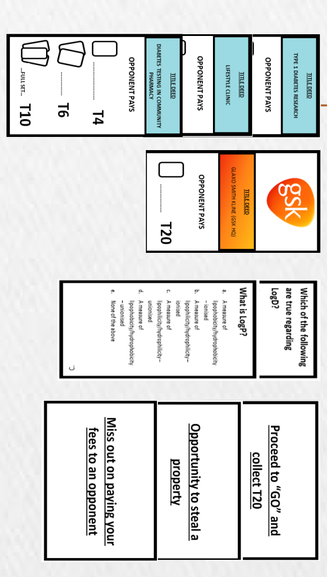
Method: Final year students surveyed their peers (107 participants). This identified pharmaceutical/medicinal chemistry and pharmacokinetics as areas of difficulty, which guided the content, and design of the games. Game prototypes were developed and tested within the development group. Beta testing with small groups of students from final year was conducted (3 groups, 8 students per group). Feedback was collected from each test in the form of a group interview and individual questionnaire post-test to assess engagement and effectiveness. The final product of this process is the game Pharmopoly described below.

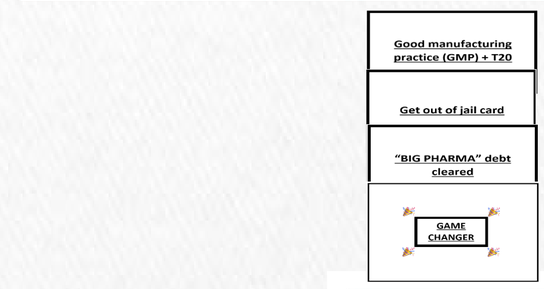
Board Design

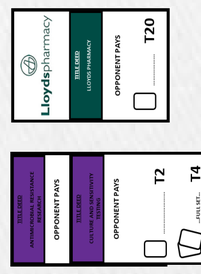
By focusing on maintaining key aspects of 'Monopoly's' gameplay the board was re-designed to include aspects of pharmacy and increase the overall appeal to our target audience. Each property consisted of an element of pharmacy: a pharmaceutical company, a specialist hospital, a potential career progression and other clinics. As in classic monopoly several positions have specialised functions such as prison and free parking. These features were retained to maintain the game play elements they support but renamed along pharmacy themes.

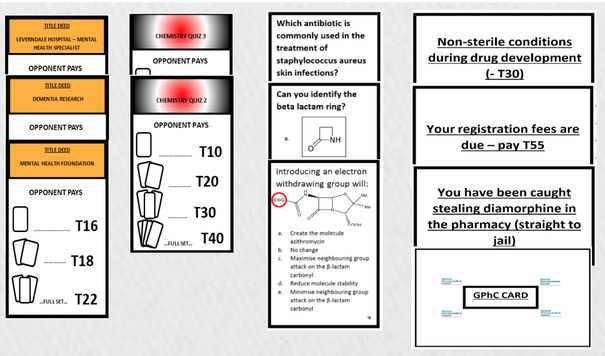
Pharmopoly tablets

'Monopoly' money has become 'Pharmopoly' tablets. The tablets act as a currency in the game and have been designed to make students aware of pack sizes and tablet appearance.

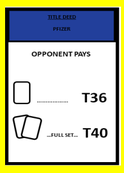








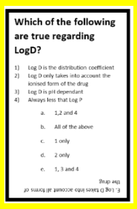
Property Card



As with classic 'Monopoly', properties have colour variation. In 'Pharmopoly' the colours represent a specialty that the students have covered during the course. The game-based learning was achieved using questions relating to specialist aspects of the course matched to a colour.

Question Banks

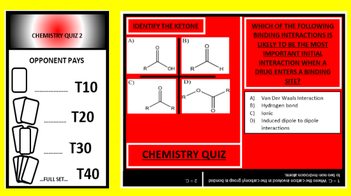
Question banks were developed for each specialist subject. Lectures, workshop, and laboratories formed the basis of each question bank. Questions were set in a range of styles mirroring formats used in formal exams.
For players to invest in a property they must answer a question correctly.



Game changer and GPhC cards

'Community Chest' became 'Game Changer' cards. These were designed to change the game in the players favour by giving them a reward. 'Chance' cards became 'GPhC' cards, which provided problems for players which may reflect poor pharmacy practice or complications that may occur during a pharmacist's career.

Chemistry Quiz



The chemistry quiz was designed to promote a deeper understanding of the course chemistry content which was highlighted as a major requirement of the game. The medicinal quiz took the place of the train stations on the 'Pharmopoly board' which allowed four opportunities for players to be quizzed on this topic. Each quiz consisted of two questions which must both be answered correctly to gain the property card.

Results: This project produced a versatile new game - "Pharmopoly" which fits in our integrated spiral curriculum. The game mechanics place particular emphasis on the chemistry and pharmacokinetic, providing a fun and novel way for students to engage with course content. Pharmopoly represents a versatile teaching tool, which can be used to target specific year groups and subjects through development of appropriate question banks while maintaining the game mechanics. Testing in larger teaching settings is planned for the coming academic year to allow a fuller assessment of the impact and effectiveness of game as a teaching tool.

Conclusion: This game provides a fun and engaging teaching tool while supporting the achievement of key learning outcomes, as demonstrated through the positive student responses in our post-test evaluations. These results add further support to the growing body of literature that gamification can an effective tool in healthcare education.

References
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