

Title: Construction and application of the virtual simulation laboratory in clinical pharmacy

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What problem was addressed: Clinical pharmacists in China, as in many other countries, perform a broad range of activities above and beyond dispensing medications. One of their most valuable services is performing clinical interventions, where they identify an actual or potential drug-related problem and take actions to resolve it. Clinical pharmacists play the key role on helping doctor use medicines rationally. There are not enough clinical pharmacists in the Chinese medicine system. And this situation will continue for a long time in the future. Clinical pharmacist training requires a clinical environment, but in reality, that resource is insufficient for students. The tension between the doctors and patients has a negative impact for clinical training.

Becoming better clinical pharmacists will improve society's satisfaction, it also improves the health in shortening the hospital stay, decrease the adverse drug effects and reduce the medical cost. To provide a computer-based learning method for pharmacy practice that is engaging and less labor-intensive.

Theory of change:

- This project is to changing the faculty feel reaction or satisfaction of clinical pharmacy training session;
- This project will change students learning knowledge, skills and attitudes;
- This project is about to change and improve the schools organization practices or policies on clinical pharmacists education.

Outcomes:

For this project build, we expect some outcomes on different aspect and different term.

Outcomes issues:

- Create the authentic scenario;
- Students possess adequate knowledge and skills, greater confidence and satisfied among students.
- Maximize teaching opportunity;
- Economize teaching resources;
- Inter-professional collaboration among pharmacists, doctors and nurses.

Timeline

The project is about in 6 steps to accomplish what it designs for:

1. Apply for a found to support;
2. Form project team, including staffs and students;
3. Apply for a room to be a virtual simulation lab;
4. Collection and screening clinical cases;
5. Construction the proper clinical scenario by internal hyperlinks in PowerPoint;
6. Evaluate the project with questionnaire.

Processing update**Funds support:**

Already applied for the Guangdong Province Education Fund

Already applied for the teaching project “Teaching reform of Southern Medical University”

All the two funds are ready for the project.

Team established:

Set up teaching reform group of 6 members Including teacher, doctor, and administrator.

Four of them are experienced teachers on pharmacology. And rest one is a clinical doctor and the other is education administrator.

Virtual Lab:

The virtual lab is ready; the lab is about 40 square meters independent office equipped 30 computers for teaching. Both the hardware and software are ready for project.

Students group:

This project needs to recruit two different students groups to evaluate the project results.

One is for the project to using new teaching program and other one is set up to compare with the old teaching program.

On our project design, we will recruit 80 students from clinical pharmacy major. We are going to divide these students into 2 groups randomly. The first group is going to study the clinical cases with papers. The second group will be training in the virtual lab.

All the evaluation and assessments of the project data will be statistical analyses by SPSS Statistics 20.

One chance:

Eric sent me a helpful literature:

Ivan Bindoff, Doctor of University of Tasmania, Australia, developed a computer-based simulation of community pharmacy using the Unity 3D game development environment. By some sharing information with Ivan’s study, we will get benefit for our project processing.

Clinical cases:

Based on our teaching experience, we have already prepared some clinical cases for this project.

- Antiasthmatic drugs;
- Diabetes Mellitus Management;
- Antihypertension drugs;
- The drug therapeutic for hyperlipidemia
- Dosage regimen design

Pilot Results:

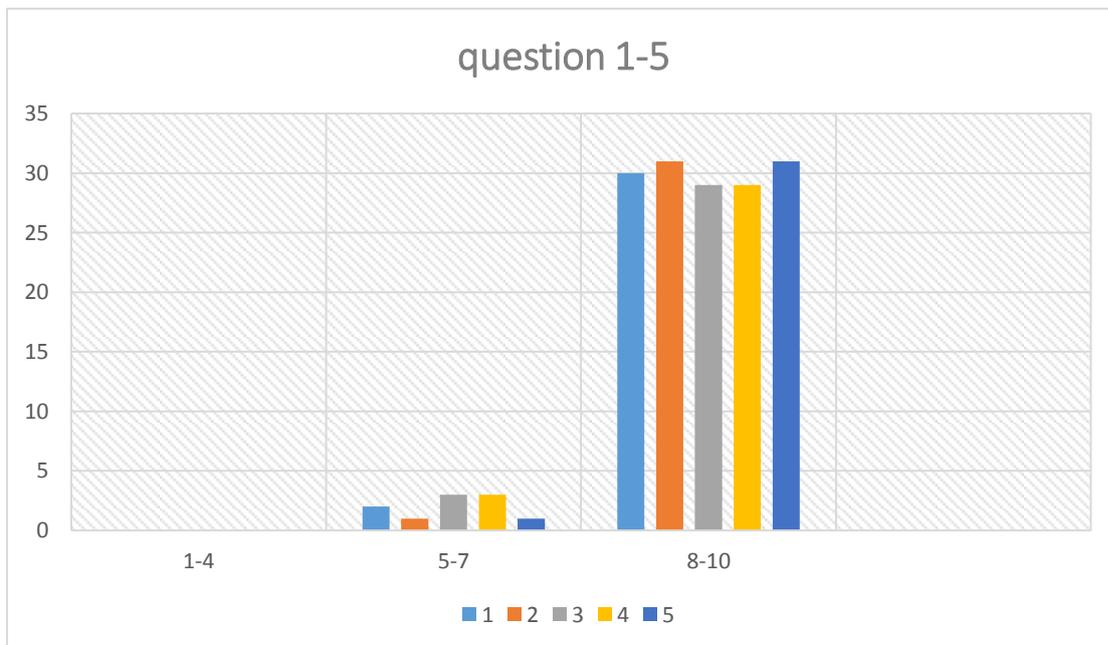
We will setup this project for next semester, but we have already released some teaching

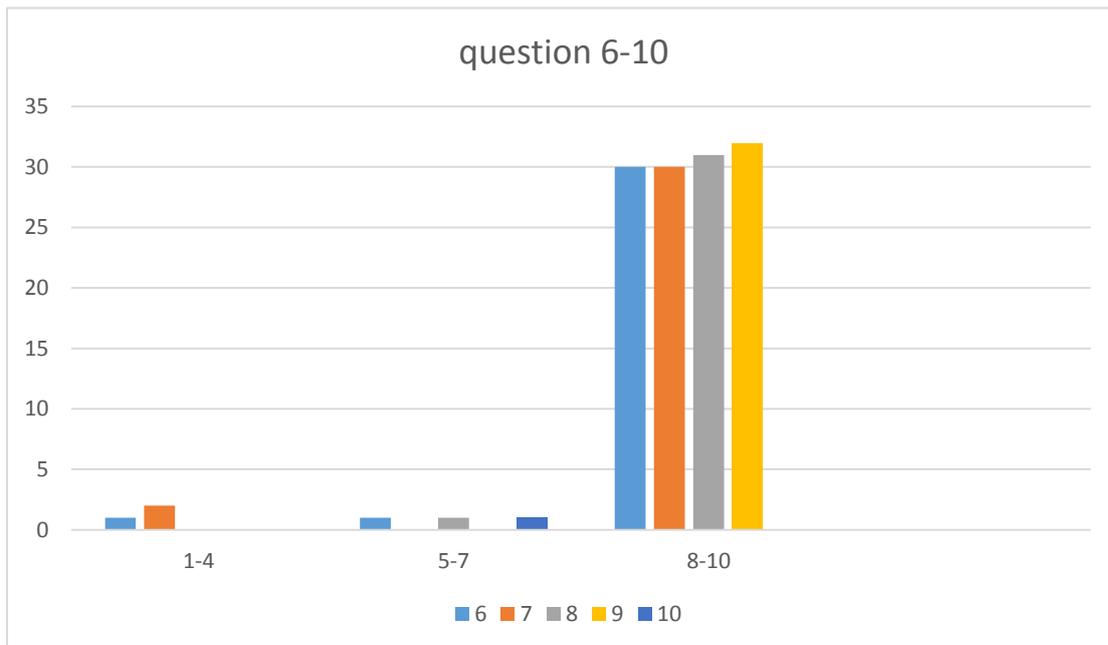
cases to a small group students (32 people involved, 12 grade 2 students and 20 from grade 3). After that we designed a survey for this group of students on the new teaching program.

Survey chart:

| No. | Question of the program | Positive | Negative |
|-----|---|----------------------|----------|
| 1 | The whole impress of the new program | 10 9 8 7 6 5 4 3 2 1 | |
| 2 | Can you grasp the main issue of the program? | 10 9 8 7 6 5 4 3 2 1 | |
| 3 | How about the teaching content | 10 9 8 7 6 5 4 3 2 1 | |
| 4 | Is this program vivid enough to draw you attention? | 10 9 8 7 6 5 4 3 2 1 | |
| 5 | Do you feel the program fulfills your need? | 10 9 8 7 6 5 4 3 2 1 | |
| 6 | The program time suitable for the teaching contents | 10 9 8 7 6 5 4 3 2 1 | |
| 7 | Is this program clear enough for you study? | 10 9 8 7 6 5 4 3 2 1 | |
| 8 | Do you learn what you need? | 10 9 8 7 6 5 4 3 2 1 | |
| 9 | Can you get the enough feedback when you need? | 10 9 8 7 6 5 4 3 2 1 | |
| 10 | Do you feel this sort of case training is better than the tradition case study? | 10 9 8 7 6 5 4 3 2 1 | |

The survey results charts are showing below.





We can say much of the feedbacks from these results are positive for our project. We can learn some from this result.

1. Most of students preferred new program much better than the tradition ways.
2. The students show a lot of interesting on this new program.

Above all, we can be optimistic enough on our project for the next semester.