

Aperture Bioscience Laboratories

Progress Report 6 for NICView: A Virtual NICU Simulation

Due: 2/13/15

Professor Walker

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Background of the project

Considering the new regulations that limit work hours for medical residents, these residents do not have the same real case experience as in the past. Therefore, this reduces patient safety, because the residents do not experience a large and varied amount of cases. In order to solve this problem, our project will involve developing a simulation game that can be played at the resident's home. By playing this game, the residents will be able to gain experience by going through different scenarios, which addresses the issues of volume and variety of cases and patient safety.

Achievements since the last report

Since the last report, the team had a meeting with Dr. Krakauer in order to discuss the scope of the project. During this meeting, Dr. Krakauer decided that it would be better to focus on lower order medical knowledge. This will result in the scenarios testing basic medical skills, such as when to do chest compressions and intubation. The improvement by the residents will be determined by measuring the time that it takes the resident to make the medical decision. The expected results are that the residents will take less time to make the decision in the second scenario after playing the first. Also, the pre- and post-test questions will focus more on information related to these specific actions, and the pop-up messages in the game will be learning tools. The last thing learned from this meeting is that the simulation doll is not the current standard of fixing the issue of inexperience in residents. Due to issues with costs, this method is not available to all residents. Therefore, according to Dr. Krakauer, the only way to fix the issue is for the residents to spend more time in the hospital. This will be very important to consider when designing the game.

There has also been progress in the areas of programming and graphic design. Pam has finished coloring the baby that will be used in the game, which is shown in the figure below.

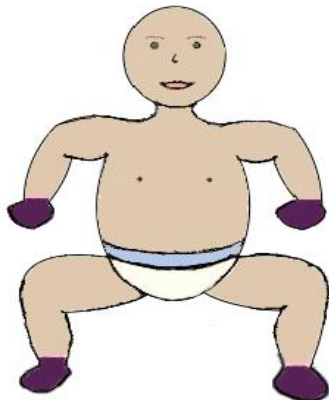


Figure 1: Baby Design after Coloring

As far as programming, Jenn has finished programming the code that allows the user to click on the medical equipment and drag it. The sample code is shown below.

```
void Update () {  
    x = Input.mousePosition.x;  
    y = Input.mousePosition.y;  
  
    //Use Raycast to determine if object is under the mouse when mouse button down  
    Ray ray = Camera.main.ScreenPointToRay(Input.mousePosition);  
    RaycastHit hit;  
    // Casts the ray and get the first game object hit  
    //if game object is clicked  
    if (Physics.Raycast (ray, out hit)) {  
        //Debug Code  
        Debug.Log ("This hit at " + hit.point);  
        transform.position = Camera.main.ScreenToWorldPoint(new  
Vector3(x,y,10));  
    }  
}
```

Deviation from the plan and corrective action

Looking at the expectations from last week, deviations from the plan occurred in the fact that the first scenario has not been programmed. However, since all of the scenarios has been flowcharted, Amy and Caitlin will help Jenn with programming, and Lindsey will help Pam in designing the graphics. By reassigning these resources, this will help our team to be able to accomplish the rest of the goals on schedule.

Plan for Next Week

The plan for next week involves making more progress in the area of programming. Amy and Caitlin will be working on programming the inventory, which will hold all of the medical equipment. Lindsey will download GIMP and help Pam in the coloring of the medical equipment. Also, Lindsey will create rubrics that will show the current points allocation for each scenario. This will allow Dr. Krakauer to see where the points are being given. She will then assign new point values that will directly correlate with the amount of time that it took for the resident to make the decision.

Assessment of Progress

Considering the current progress, the team is a little behind the expected schedule. Because of this, the team has decided to look at ways that will help to make the project more feasible. By using these methods and continuing to monitor our progress, we will be able to finish the project on time.