Nursing Self-Training System

Recently, it is required more and more nursing care service, as the seriousness of aging problem is increasing. However, the requirement is prevented by the shortage of nursing teachers. One way of solving this problem, is to provide a self-training system which is able to automatically measure the performance of the train and provide the evaluation results as almost the same precision with the nursing teachers' (Fig.1). In nursing activities, to master the appropriate procedures is quite important for not only the patient but also the nurse to prevent from injury, especially in heavy tasks. Since of that, to automatically distinguish the appropriate and inappropriate procedures is requested. For the purpose, we established the camera system with depth camera sensors Kinect(Microsoft co., Ltd.) for nursing activities training of transferring patient from bed to wheelchair. In addition, we used color information to deal with the problem of image overlap between the trainee and the patient(Fig.2). The evaluation item is defined by the discussed with the nursing teacher and the reference form text book and the evaluate criteria of each item is quantified by experiment. The performance of the system is examined by the controlled trials. The average accuracy of transferring training is up to 85.8%. Also, the effect of system is examined (Fig. 4).

Keywords：Self-training system, evaluation, kinect

References

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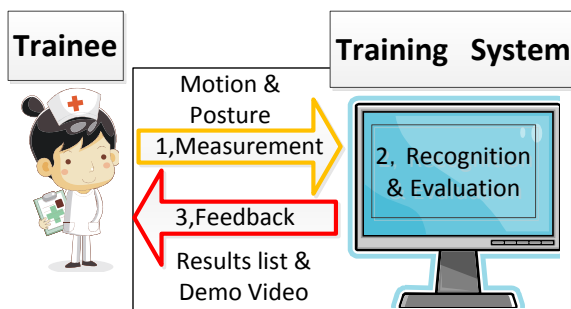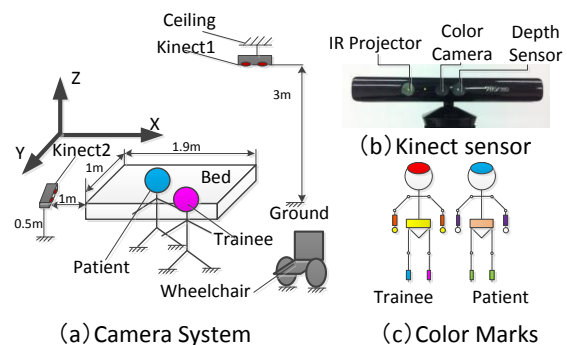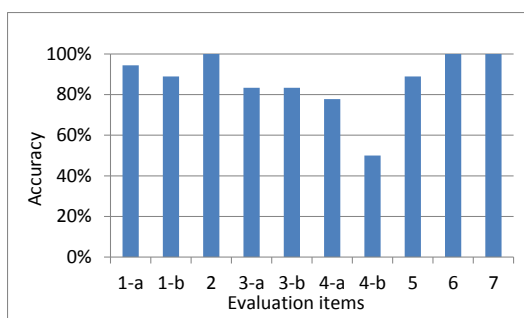
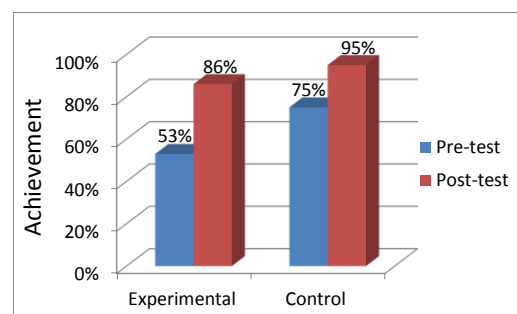Fig. 1 System Image

Fig. 2 Camera System

Fig. 3 System accuracy

Fig. 4 Training effect