

A MODEL BASED ON COST OF QUALITY AND LEARNING CURVE TO OPTIMIZE THE NUMBER OF REPETITION IN OPERATION SKILL TRAINING PROGRAM

ABSTRACT

One of the prominent factors in an operation skill training is repetition of action. The number of repetition has to be determined in such a way so that the training can be cost-effective. This study proposes a mathematical model to determine the optimal number of repetition in an operation skill training by considering the cost. The model was developed based on the concept of cost of quality and the learning curve. In this model, the level of skill is measured based on how fast a trainee perform a certain operation. The model can also be used to estimate the cost of training and to design the training's target. A case study in a twist drill manual-sharpening training program was conducted to show the implementation of the model. Based on the case study, it was found that the optimal number of repetition was 26 with 14 minutes target of operation time and \$ 264 of training cost. This study provides an alternative solution to optimize the operation skill training by not only prioritizing the proficiency but also considering the cost-effectiveness aspect.