Abstract

Neural Network (NN) is one of the most important branches of AI that has been applied to an increasing number of real-world problems of considerable complexity from the financial markets to real estate, medicine and education. The most commonly used is multilayer perceptron with back propagation that is capable of representing non-linear functional mapping between inputs and outputs. In this paper, such a net is used to forecast the information technology competency among teacher trainees in the teaching institutes. The system has been developed as a web-based self-assessment information system that can be used to obtain a model for predicting the information technology competency. The system functions as an instrument that generates questionnaires as well as performing rubric assessment online. The data will be entered online using the web as a medium. This data will be fed into the NNsimulator to obtain a suitable model. Once the model is obtained, it will then be used to predict the information technology competency among the teacher trainees. The data was collected from various teachers’ training institutions in Malaysia. The findings indicate that the most suitable forecasting model comprises of eleven input nodes, five hidden nodes and one output node. The performance of the selected model obtained with an accuracy of 99.
77%. Hence the results show that the developed system can be used as a tool to assist decision-making in education.

References


Index Terms

Computer Science
Neural Networks

Keywords
Modeling
Information Technology Competency
Neural Network
Prediction