

Thesis Title      The Automatic System of Educational Philosophy for Instructors  
and Administrators of Vocational Education

Thesis Credits    6

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### Abstract

The purposes of this research were to develop the automatic system of educational philosophy for instructors and administrators of vocational education by using computer program. The instrument used in this study consisted of: questionnaire concerning Perennialist, Idealist, Realist, Experimentalist and Existentialist, Five patterns describing the meaning of the whole 5 philosophies of education, and the Educational Philosophy Manual. The population were vocational administrators; for example, directors the assistant directors, the heads of electrical departments and 253 electrical instructors from 77 technical colleges.

The data were analyzed by using percentage(%), arithmetic means ( $\bar{X}$ ), t-test and Neural Network.

The result of the study could be concluded as follows:

1. The model of educational philosophy could be classified into 5 patterns which were: 1) Perennialist 2) Idealist 3) Realist 4) Experimentalist and 5) Existentialist.
2. The characteristics of automatic system of educational philosophy were performed by using the analyzed results from Neural Networks. The steps of analysis would be shown as follows:

1. The sum value of the input signal was fed into neural network as in :

$$\text{net}_{pj} = \sum_{i=1}^n w_{ji} x_{pi} + b_j$$

2. The learning equation of neural networks was delta rule learning as in :

$$w_{ji}(t+1) = w_{ji}(t) + 2\mu \varepsilon_{pj} x_{pt}$$

3. The input value of hidden layer was :

$$\text{net}_{pj}^h = \sum_{i=1}^n w_{ji}^h x_{pi} + \theta_j^h$$

4. The adjusted weight of the output layer was :

$$w_{ji}^o(t+1) = w_{ji}^o(t) + \eta \delta_{pk}^o i_{pj} + \alpha [\Delta w_{ji}^h(\text{old})]$$

5. The error of pattern from the whole output node was :

$$E_p = \frac{1}{2} \sum_{k=1}^M (t_{pk} - o_{pk})^2$$

3. In order to test the performance of the proposed system, 201 data from the whole 5 educational philosophy patterns were used for learning and 199 data were used for testing. The result showed 85.00% of the recognition rate.

4. When the educational philosophy of instructors and administrators of vocational education compared, it was found that there was no significant difference.

**Keywords :** Neural Networks / Model / Educational Philosophy / Learning / Testing