Information Aptitude Scale Development for Vocational High School in Taiwan

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Abstract
To strengthen the foundation for national information development, Taiwan government has persistently implemented information education at different levels of school. This research is a three-year project on “Research on the Development of Information Aptitude Scale,” sponsored by National Science Council of Taiwan. It was designed primarily to develop an information aptitude scale appropriate for application in junior high and vocational high schools in Taiwan so as to help students understand whether they are equipped with the ability to enroll in information-related departments and to pursue a career in information. This article separately describes the three stages of developing the scale for vocational high schools. During the first year test questions for the information aptitude scale were written, and the reliability and validity of scale test questions were analyzed during the second year. Now the third-year sub-project is being conducted, focusing on establishing norms and interpreting test results of the scale.

Introduction
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Development of the Scale
The three stages of developing the Information Aptitude Scale for Vocational High School are described as follows:

1. Stage I – development of scale questions

The researcher examined how local and foreign scholars defined information aptitude and how information aptitude was measured locally or in other countries, and talked in person with information experts, including six professors from University. On-line interview was also conducted with 100 professors and associate professors of information engineering, information science, information management who taught in Taiwan universities. Based on the information gleaned as above, it was concluded that information aptitude should include: insight, logical ability, problem-solving ability, integration and organization, and subject ability. 877 students from 11 senior high schools including Taipei Municipal First Girls'High School and 399 students from 14 junior high schools including Kaohsiung Municipal Jui Feng Junior High School were administrated the preliminary test.

2. Stage II – checks on reliability and validity

Kuder-Richardson reliability was .87, split-half reliability was .77, and test-retest (four weeks apart) reliability was .674. The scale whole test reached a significance level, indicating excellent reliability of the scale test. With respect to validity, the test scale showed no significant correlation with the scores on Chinese but had a significant correlation with the scores on mathematics and computer courses, each achieving .01 significance level. The product-moment correlation coefficients fell between .667 and .777, indicating the internal consistency of the Information Aptitude Scale for Vocational High School.

3. Stage III – establishment and explanation of norms

This research used the students enrolling in 181 public and private vocational high schools in Taiwan area in 2002 academic year as the population of measurement. A sample of students was obtained through stratified random sampling and cluster sampling. A sample of 2480 students was selected to build up the norm. The research tools included “Information Aptitude Test” and “Computer Attitude Scale.”

Conclusion
This research provide local vocational high school students with an indigenous aptitude test tool so as to help them understand themselves and to provide teachers with a criterion when they guide or assess students. Therefore, the development of this scale is very useful and educationally meaningful.