

# A STUDY ON THE INFLUENCING FACTORS CONCERNING THE WILLINGNESS OF JUNIOR HIGH SCHOOL TEACHERS IN MIAOLI COUNTY TO CONCURRENTLY UNDERTAKE THE SCHOOL'S ADMINISTRATIVE WORK

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## Abstract

This study is set out to probe into the influencing factors concerning the willingness of junior high school teachers in Miaoli County to concurrently undertake the school's administrative work. With the junior high school teachers in Miaoli County as the subjects of study, it is devoted to the investigation of such influencing factors concerning the willingness of these teachers to concurrently undertake the school's administrative work as stress in the administrative work, compensations and benefits, school leadership and personal factors. On the basis of relevant literature review and the "Modified Delphi Method", as well as expert consensus, the indicators for the influencing factors were summarized, analyzed and integrated into a hierarchy. The "analytic hierarchy process" was then used to obtain the weight of the indicators for the influencing factors concerning the willingness of junior high school teachers to concurrently undertake the school's administrative work, based on which a weight system was established. According to the results, the influencing factors concerning the willingness of junior high school teachers to concurrently undertake the school's administrative work could be arranged hierarchically as follows according to their degree of perceived importance: stress in the administrative work, compensations and benefits, school leadership and personal factors. And the indicators for the influencing factors could be ranked as: workload, the school's organizational climate, duty allowance, interpersonal relationship and health state. It is hoped that the results of this study could be used as references for educational administrative authorities and schools in their efforts to stabilize the school operations and improve the school's administrative defects.

Keywords: Teachers working concurrently as administrators, school administration, willingness to work

## Introduction

Education is the basis of everything and the foundation for a country's development. As the promoters of school

education, teachers are not only supposed to "teach, instruct and explain", but even more expected to cultivate sound personality of the students and implement the plans and goals of the educational reform. In recent years, the educational reform policies have kept changing. For the substantive implementation of 12-year compulsory education, a large number of new educational policies have been issued. In the face of the newly established adaptive enrollment, remedial teaching measures and remedial teaching exams etc., the weight of the originally onerous administrative work is even more unbearable. The administrative input of teachers undertaking concurrently the administrative work is an important indicator of whether the goals of our national education could be achieved [1-2]. As our society keeps changing drastically, teachers are forced to deal with vigorously aggressive youth in school and be professionally challenged and questioned by people outside the circle. As a result, they have to struggle more in the teaching, student management and class management. Moreover, school administration is an onerous and yet trivial work. Working concurrently as the director or head of the various first-line administrative offices and sections in the school, the teachers are required by their superiors to implement the various educational policies issued by the Ministry of Education and school development plans proposed by the headmaster, and to address such a variety of issues as teaching and schooling pressure and student problems by their subordinates. Under such a context, the value of a study on the teachers' willingness to concurrently undertake the school's administrative work is more outstanding.

## Literature Review

The Delphi Method or Delphi Technique was a method developed in 1950 by an American company, RAND Corporation, to avoid such defects in group discussions as subordination to authority or blind obedience to the majority in group discussions. It has been widely in use ever since and is now the most commonly used method to address

complex decision making problems. The Modified Delphi Method [3-5] is similar to the traditional Delphi in terms of implementation and mode of statistics. It retains the gist and advantages of the original Delphi where the experts are allowed to exchange ideas and voice their opinions anonymously and the complicated procedure involved in a questionnaire survey is simplified by replacing the open-ended questionnaire for the first round with the structured questionnaire developed directly in research plans or expert interviews on the basis of the research findings in relevant literature review.

The Analytic Hierarchy Process (AHP) was a method developed in 1971 by Professor Thomas L. Saaty of University of Pittsburgh mainly to facilitate decision making when the circumstances are not clear or there are multiple evaluation criteria [6]. According to Saaty, the situations to which AHP could be applied include: planning, generation of alternative plans, selection of optimal plans or policies, resource allocation, determination of demand conditions, forecasting -- risk assessment, priority setting, performance appraisal, system design, guaranteeing system stability, optimization, conflict resolution and risk assessment [7-8].

School administration is the effective, economical and systematic management of the affairs other than teaching aimed to achieve educational goals. Such affairs could be divided into registry services, student affairs, general affairs, human resources and public relations, whose administration is comprised of such stages as planning and decision-making, communication or coordination, leadership or motivation, organization, the review and reform of practices [9]. School administration is the support and leadership of school education, by which school education could develop in the right direction and the school will be equipped with sound facilities and resources, thus enhancing the quality of teaching in a more effective manner and achieving the goals of school education. School administration is suggested to have the following characteristics: (1) school administration is the locomotive of the reform and development of school education; (2) school administration should support and lead school education; (3) school administration is indispensable to the development of school education in the right direction; (4) school administration refers to the methods dealing with all educational resources of a school including the persons, affairs and objects involved; (5) it calls for the effective support of school administration to enhance the quality of teaching; (6) the goal of school administration, like the goal of school education, is to "aid every individual to achieve their unique potential that they may make their unique contribution to society" [10-12]. Since students constitute the bulk of school and the goal of students is "to learn things", "school administration" should uphold the promotion of "students to learn" as the main principle and the enhancement of the teachers' quality of teaching as the ultimate goal.

## Research Method

### A. Research subjects

The research subjects in this study are divided into two parts: the Delphi Expert group and the research subjects of AHP (junior high school teachers). The success of a Delphi-based study depends to a large extent on the professional qualities, participation intention, etc. of the experts selected for this purpose. Dalkey (1967) suggested that the smallest error value and greatest group reliability would be obtained when the expert panel consisted of more than 10 people. During the selection of Delphi expert panel, therefore, since the research subjects including the junior high school directors, group heads and teachers experienced in concurrently undertaking the administrative work and education experts and scholars with practical educational administrative experiences were more homogeneous than heterogeneous in nature, the number of experts was determined to be 12.

### B. Research sampling

This is a regional study based on snowball sampling. It began by contacting the teachers who are willing to participate in the study via telephone. These teachers were then asked to provide lists of qualified respondents, who were then asked to provide their lists of qualified respondents, so on and so forth until the sample size grew like a snowball. The questionnaires were distributed via the Internet.

### C. Research tools

This study used two research tools: the questionnaire for experts in a modified Delphi process and the AHP questionnaire. In order to probe into the willingness of junior high school teachers to concurrently undertake administrative work, literature on the willingness to concurrently undertake administrative work, school administration etc. was gathered and summarized to formulate the questionnaire for experts in a modified Delphi process and the AHP questionnaire to be used as the research tools.

### D. Research process

The research process of this study could be divided into the following three steps:

Step 1: Determine the research topic.

Step 2: Establish the evaluation criteria via the Modified Delphi Method. On the basis of gathering and reviewing relevant literature and conducting expert interviews, a

preliminary criteria hierarchy was built consisting of a target layer, a criteria layer and a sub-criteria layer covering the influencing factors defined by expert consensus. After this preliminary criteria hierarchy was analyzed through a modified Delphi questionnaire, an effective and complete criteria hierarchy was set up.

Step 3: Design, distribute and collect the AHP questionnaire after the criteria hierarchy was confirmed. The AHP method was used to organize the data and decision analysis software was used to analyze the weight of the evaluation criterion for each decision. With the weights obtained, a table was formulated containing all the influencing factors to be selected. Based on the results of this study, conclusions were arrived at and suggestions were proposed. Figure 1 shows the research process of this study at its various stages:

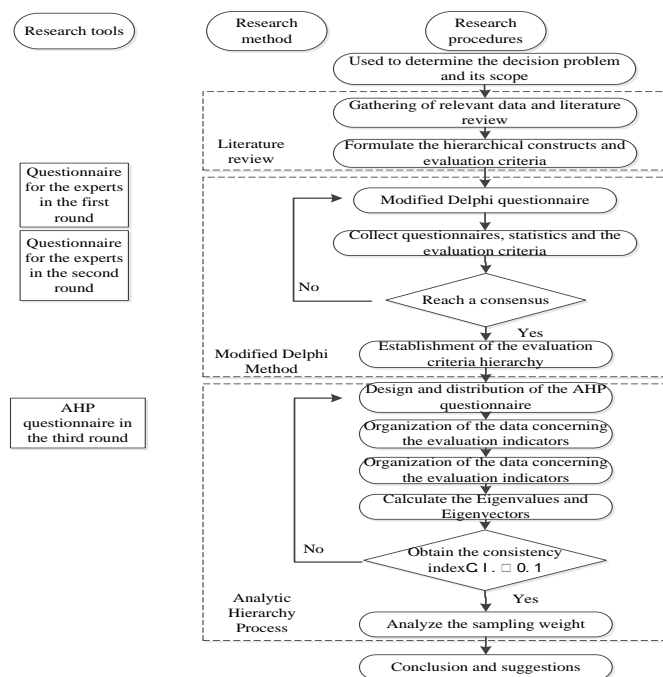


Figure 1. Research process

### E. Research procedures and implementation

On the basis of relevant literature review and with the support of relevant theories, research methods in this study are designed in such an objective manner as to generate the following four major constructs of the influencing factors concerning the willingness of junior high school teachers to concurrently undertake the administrative work: stress in the administrative work, compensations and benefits, school leadership and personal factors. They are hereby elaborated as follows:

**Stress in the administrative work :** According to literature review, the sources of the stress in administrative work are complicated and varied in nature. This study compiles the observations of relevant scholars and divides the sources of the stress in administrative work into the five categories of educational policies, workload, interpersonal relationship, professional knowledge and skills and internal conflicts.

**Compensation and benefits :** On the basis of relevant legislation and literature review, the researcher conducts a deeper investigation of the extra compensation and benefits enjoyed by the teachings undertaking concurrently the administrative work. They are duty allowance, vacation subsidy and teaching hours respectively.

**School leadership :** This study measures school leadership from its three constructs of organizational climate in the school, principal leadership mode and school size.

**Personal factors :** Based on the gathering and compilation of relevant literature, the influencing factors "on the personal level" concerning the willingness of teachers to concurrently undertake the administrative work include: the information ability of the teachers as an individual, career planning, family support, health conditions, etc.

After gathering and summarizing relevant literature on teachers' concurrently undertaking the administrative work and referring to the studies of various scholars, the indicators for the influencing factors concerning the willingness of junior high school teachers to concurrently undertake the administrative work are established and the constructs and evaluation criteria for the AHP analysis are preliminarily formulated, as are shown in Table 1:

**Table 1. Preliminary hierarchical constructs and evaluation criteria**

First layer	Second layer	Third layer	
Target	Criteria	Sub-criteria	
The influencing factors concerning the willingness of junior high school teachers to concurrently undertake the administrative work	A.Stress in the administrative work	A1.Educational policies	
		A2.Workload	
		A3.Professional knowledge	
		A4.Interpersonal relationship	
		A5.Internal conflicts	
	B.Compensation and benefits	B1.Duty allowance	
		B2. Vacation subsidy	
		B3.Teaching hours	
	C.School leadership	C1.Organizational climate in the school	C2.Principal leadership mode

		C3. School size
D. Personal factors		D1. Information ability
		D2. Career planning
		D3. Family support
		D4. Health conditions

A quantitative analysis was performed on the modified Delphi questionnaire and a questionnaire for experts was used to collect data, on which a statistical analysis is then conducted via MS Excel in order to work out the mean and standard deviation. From the results of such data analysis, it was possible to discern the degree of convergence and difference of the experts in terms of the question items. This process is hereby elaborated as follows:

**Mean :** Mean represents the degree of importance attached to the various constructs and evaluation criteria for the "influencing factors concerning the willingness of junior high school teachers to concurrently undertake the administrative work" by each expert. The scoring of the questionnaire for experts in the first round is based on the five-point Likert-type scale. In order to summarize the overall agreement between the experts and scholars, when the score of a certain factor is above "3.5" (between neutral and agree), we would say an agreement has been reached among all the scholars and experts and deem the degree of agreement as 70%. The factors with a mean of over 3.5 in terms of perceived importance will be included as the question items in the final questionnaire. In the second round, the mean of each factor in the questionnaire for experts is set as "3.8" and above, which means a 75% agreement.

**Standard deviation :** Standard deviation shows the degree of dispersion among the opinions of the Delphi experts on the various constructs and evaluation criteria for the "influencing factors concerning the willingness of junior high school teachers to concurrently undertake the administrative work". The greater the standard deviation is, the more it means that the opinion has been distracted from the topic. Therefore, this study will delete a question when the standard deviation is higher than 1.

Based on the feedbacks from the Delphi questionnaire in the second round, four constructs were placed in the second layer while the number of evaluation criteria in the third layer is found to comply with Satty's suggestion that each layer shall contain no more than seven factors. According to the results of the Delphi questionnaire in its second round, which was taken as the AHP framework AHP, four constructs and 13 evaluation criteria were included in the research framework of the study on the influencing factors concerning the willingness of junior high school students to concurrently undertake the administrative work, as is shown in Figure 2:

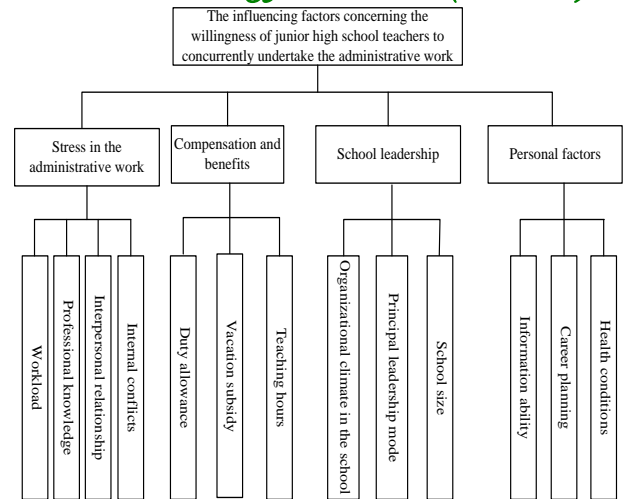


Figure 2. Hierarchy of the influencing factors concerning the willingness of junior high school teachers to concurrently undertake the administrative work

## Empirical Analysis

This study is set out as an empirical analysis of the influencing factors concerning the willingness of junior high school teachers in Miaoli County to concurrently undertake the administrative work and analyze and probe into these influencing factors by conducting a questionnaire survey on them on the basis of the opinions of junior high school teachers in Miaoli County and using the modified Delphi method and AHP. A total of 60 questionnaires were sent out, 54 of which were collected. Since all 54 of these collected questionnaires were valid, the collection rate of valid questionnaires was 90%. 28 of these questionnaires were filled out by men and 26 by women.

A data analysis was conducted after converting the results of the questionnaires as they were filled in by the respondents into quantitative ones. The geometric mean and weights of the criteria in each layer was firstly obtained in a pairwise comparison, on the basis a pairwise comparison matrix was established to obtain the Eigenvectors and Eigenvalues. A consistency test was then conducted to see the acceptance of the results. After a comprehensive analysis, the weights of the factors are ranked in Table 2, from which it is possible to further understand the relative importance of the various influencing factors. They could thus serve as the basis of the teachers' self-assessment in their decision-making process as to whether to undertake concurrently the administrative work or not.

**Table 2. A Comprehensive Analysis of the Importance of the Various Factors**

Criterion	Criterion weight	Sub-criterion	Sub-criterion weight	Comprehensive weight	Rank
Stress in the administrative work	0.4273	Workload	0.5031	0.2150	1
		Professional knowledge	0.1811	0.0774	6
		Interpersonal relationship	0.2030	0.0867	4
		Internal conflicts	0.1129	0.0482	10
Compensation and benefits	0.1722	Duty allowance	0.5397	0.0929	3
		Vacation subsidy	0.2425	0.0418	11
		Teaching hours	0.2178	0.0375	12
School leadership	0.1897	Organizational climate in the school	0.5099	0.0967	2
		Principal leadership mode	0.3722	0.0706	7
		School size	0.1178	0.0224	13
Personal factors	0.2108	Information ability	0.3320	0.0700	8
		Career planning	0.2895	0.0610	9
		Health conditions	0.3785	0.0798	5

According to the above results of the questionnaire for the junior high school teachers, it is found that the importance of the stress in the administrative work is mostly highly perceived by the teachers in their selection of the influencing factors concerning their willingness to concurrently undertake the administrative work. In the section on the major criteria, "stress in the administrative work" scores a distinctive 0.4273, nearly 50% of all, thus showing its great influence. In the investigation of individual factors, "workload" is the most highly valued item in the basic analysis of the stress in administrative work. Likewise, the most highly valued item in the basic analysis of compensation and benefits is "duty allowance", that in the basic analysis of school leadership is "the organizational climate in the school" and that on the personal level is "health conditions".

Based on the overall weights of the four major evaluation criteria and thirteen sub-criteria, the top five factors are workload (0.2150), organizational climate in the school (0.0967), duty allowance (0.0929), interpersonal relationship (0.0867) and health conditions (0.0798) respectively. Taking

up 57% of the total weight, these five evaluation criteria are thus placed in the category of the influencing factors of [high perceived importance] concerning the participation of junior high school teachers. The 6th to 9th places are respectively taken up by professional knowledge and skills (0.0774), principal leadership mode (0.0706), information ability (0.0700) and career planning (0.0610). Accounting for 28 % of the total weight, these four evaluation criteria are thus placed in the category of the influencing factors of [middle perceived importance] concerning the participation of junior high school teachers. The rest factors, therefore, are deemed as of [low perceived importance] concerning the participation of junior high school teachers, as is in Table 3.

**Table 3. An Analysis Sheet of the Perceived Importance of the Various Criteria for the Junior High School Teachers**

Weight Rank	Degree of perceived importance (ratio)	Criteria evaluation	Comprehensive weight assignment
1	High degree of perceived importance 57%	Workload	0.2150
2		Organizational climate in the school	0.0967
3		Duty allowance	0.0929
4		Interpersonal relationship	0.0867
5		Health conditions	0.0798
6	Middle degree of perceived importance 28%	Professional knowledge	0.0774
7		Principal leadership mode	0.0706
8		Information ability	0.0700
9		Career planning	0.0610
10	Low degree of perceived importance 15%	Internal conflicts	0.0482
11		Vacation subsidy	0.0418
12		Teaching hours	0.0375
13		School size	0.0224

## Conclusion

With junior high school teachers from Miaoli County as the subjects of research, this study summarizes and analyzes the influencing factors concerning the willingness of junior high school teachers to concurrently undertake the administrative work on the basis of literature review, brainstorming and a modified Delphi questionnaire. Another questionnaire survey is conducted via AHP to collect data, based on the analysis and discussion of which we have further probed into the current situation concerning the participation of junior high school teachers in administration. We have thus obtained the weight of such influencing factors concerning the teachers' willingness to concurrently undertake the administrative work as "stress in the administrative work", "compensation and benefits", "school leadership" and "personal factors", as well as the weights of the various sub-criteria. After ranking the influencing factors concerning the teachers' willingness to concurrently undertake the administrative work according to their weights, the following results are generated in the later analysis and discussion of the data gathered via the questionnaire:

According to the analysis sheet of the perceived importance of the various influencing factors concerning the willingness of junior high school teachers to concurrently undertake the administrative work and the order of the weights of indicators for the influencing factors, these factors are divided as follows: approximately 57% as of high perceived importance for junior high school teachers, approximately 28% as of middle perceived importance and approximately 15% as of low perceived importance for the teachers.

1.The influencing factors of "high perceived importance" concerning the willingness of junior high school teachers to concurrently undertake the administrative work come in the order of: workload, organizational climate in the school, duty allowance, interpersonal relationship and health conditions, among which two are the constituents of the construct of stress in the administrative work.

2.The influencing factors of "middle perceived importance" concerning the willingness of junior high school teachers to concurrently undertake the administrative work come in the order of: professional knowledge and skills, principal leadership mode, information ability and career planning.

3.The influencing factors of "low perceived importance" concerning the willingness of junior high school teachers to concurrently undertake the administrative work come in the order of: internal conflicts, vacation subsidy, teaching hours and school size.

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