

Summer 5-25-2013

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## Recommended Citation

Ang, Li, "College Talents Combination Evaluation and its Empirical Study" (2013). *WHICEB 2013 Proceedings*. 47.  
<http://aisel.aisnet.org/whiceb2013/47>

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# College Talents Combination Evaluation and its Empirical Study

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**Abstract:** Carrying out scientific and reasonable evaluation on college talents combination is the premise for evaluating whether the match of each individual talent in an organization is proper. The paper will represent the purposes and significances of talents combination, put forward the evaluation index system for constructing college talents combination, finally establish an evaluation model by using Analytic Hierarchy Process (AHP). Taking the staff of the Office of Academic Affairs of T University as the example, this paper analyzes its successful talents combination.

**Keywords:** Colleges and Universities, Talents Combination, Evaluation System

## 1. INTRODUCTION

Talents combination: in order to achieve the organizational goals, under certain conditions, each individual talent learns from others' strong points to offset its weakness with a reasonable combination and each one performing its duties, such a collection is called talents combination. In today's world with the rapid development of knowledge economy, the requirements on talent are higher and higher, not only the requirements on individual talent, but also the requirements to organize the individual talent together according to certain rules. Scientific and reasonable evaluation will be made on college talents combination using AHP.

## 2. PURPOSES AND SIGNIFICANCES OF TALENTS COMBINATION

### 2.1 The purposes of talents combination evaluation mainly include the following aspects<sup>[1]</sup>:

It can improve the ideological quality of talents combination. It can help each individual talent in the talents combination understand their working potential to fulfill their respective responsibilities more effectively, so as to improve the working quality and working efficiency of talents combination.

It can help each individual talent improve the professional competence, so as to further improve their knowledge level and working capacity.

It can configure each individual talent in organization more properly, so as to make the structure of the talents combination more reasonable.

### 2.2 Significances of evaluation on talents combination

The significances of evaluation on talents combination mainly include the following several aspects:

The evaluation on talents combination enables the departments in charge of the organization and each individual talent of the organization to have certain understanding about the evaluation results of talents combination. Through the evaluation on talents combination, some evaluation index data can be obtained and after the data processing of these indexes, the departments in charge of the organization and each individual talent of the organization can have a full understanding about the problems and achievements in the evaluation of talents combination.

The evaluation on talents combination is to make evaluation on each index of each individual talent of the organization, i.e. investigate and understand the ideological quality, professional competence, achievements and structural condition of each individual talent and make the needed evaluation. The evaluation on talents

combination is to measure whether the collocation of each individual talent of an organization is reasonable.

The evaluation on talents combination is the basic method to put the talents to best and proper use. Through the evaluation on talents combination, establish the evaluation index system for talents combination and provide strong guarantee for development of the organization.

### **3. ESTABLISH EVALUATION MODEL FOR TALENTS COMBINATION EVALUATION INDEX SYSTEM BY USING AHP**

#### **3.1 The main principle of AHP**

Analytic Hierarchy Process (AHP for short) is an easy way to make decisions for some more complicated and ambiguous problems, which is particularly applicable to those problems difficult for fully quantitative analysis. It is a simple, flexible and practical multiple criteria decision-making method proposed by USA operations research expert T.L.Saaty in early 70s. Its characteristic is to systematize each factor in complicated problems by dividing the interconnected hierarchical order, directly and effectively combine the experts' advices and the objective judgment results of analysts according to the subjective judgment structure (mainly pairwise comparison) on certain objective reality and make quantitative description on the importance of the pairwise comparison of elements on the same hierarchy.

#### **3.2 The modeling using the method of AHP can be divided into the following four steps on the whole<sup>[2]</sup>:**

The first step: the establishment of the hierarchy model:

The second step: construction of pairwise comparison matrix: The third step: weight vector calculation and consistency check: The fourth step: combination weight vector calculation and combination consistency check<sup>[3]</sup>:

Determination of evaluation index and weight for college talents combination<sup>[4]</sup>.

### **4. EMPIRICAL STUDY**

In order to examine the correctness of the above evaluation theory and methods, I will take the management personnel of the Office of Academic Affairs of T College for example, and carry out quantitative evaluation to the talents combination of the department by using the mathematical model established in the former chapters<sup>[5]</sup>.

#### **4.1 Introduction to T College**

T College has a group of teachers with high level and a batch of experts and scholars with excellent learning. There are 715 teaching and administrative staffs, 525 full-time teachers, including 42 senior level teachers (41 professors), 127 deputy senior level teachers (122 associate professors), and 157 medium level teachers (150 lecturers). 269 teachers have doctor or master degrees. 73 teachers are doctor or master degrees candidates. 2 experts enjoy special government allowance granted by the state council. There are 1 provincial professor, 1 provincial young and middle-aged backbone teacher, and 1 provincial star teacher. The college employs foreign languages educational experts from Britain, USA and Japan etc as teachers all year round.

#### **4.2 Determination of evaluation object**

Take personnel of the Office of Academic Affairs of T College as evaluation object. The Office of Academic Affairs is the functional department that is wholly responsible for teaching works. There are Academic Affairs Section, Teaching Study Section, Practice and Teaching Section, Teaching Material Section, and Admission Office set below the Office of Academic Affairs. There are 14 personnel, including 2 professors, 1 associate professor, and 6 undergraduates. We choose 11 persons to carry out examination and evaluation, including 2 division chiefs with many years of teaching administration experience, 4 section chiefs, and 5 clerks. For the convenience of evaluation, the 11 members will be called to be division chief 1, division chief

**Table 1. Table of Evaluation Index and Weight for College Talents Combination**

	First-grade index	Second-grade index	Third-grade index
Evaluation Index System for College Talents Combination A	B1. Ideological quality. 0.06	C1 Ideology and moral character. 0.18	D1 Attitude towards the national and collective interests 0.21
			D2 Observe disciplines and law 0.21
			D3 Professional ethics 0.37
			D4 Honesty and integrity 0.21
		C2 Working attitude. 0.82	D5 Entrepreneur spirit 0.19
			D6 Sense of responsibility 0.23
			D7 Initiative and entrepreneur daring 0.19
			D8 Innovation spirit 0.19
			D9 Teamwork 0.19
	B2. Professional competence. 0.22	C3 Knowledge level. 0.18	D10 Educational background (knowledge and academic degree) 0.15
			D11 Basic theory 0.15
			D12 Professional and technical knowledge 0.44
			D13 Scope of knowledge 0.15
			D14 Foreign language proficiency 0.05
			D15 Computer level 0.05
		C4 Working capacity. 0.82	D16 Oral and written communication skills 0.09
			D17 Practical ability 0.05
			D18 Creative-thinking skills 0.29
			D19 Organizational leadership 0.29
			D20 Ability to solve practical problems 0.29
	B3. Achievements. 0.61	C5 Work quality 0.68	
		C6 Work efficiency 0.32	
	B4. Structural condition. 0.11	C7 Specialty structure 0.38	
		C8 Age structure 0.10	
		C9 Knowledge structure 0.37	
		C10 Educational background structure 0.10	
		C11 Sex structure 0.05	

2, section chief 1, section chief 2, section chief 3, section chief 4, clerk 1, clerk 2, clerk 3, clerk 4, clerk 5. Take leaders of the college, leaders of the other functional department, and teachers as evaluation subject. They will accept questionnaire survey about the 11 members<sup>[6]</sup>.

#### 4.3 Analysis of evaluation process and evaluation results

Issue Talents Combination Evaluation sheet aiming at the evaluation subject to carry out questionnaire survey and give scores to the 11 members of the Office of Academic Affairs. About 10 questionnaires were issued, and 7 questionnaires were collected. According to the Talents Combination Evaluation sheet, the survey results are summarized as follows<sup>[7]</sup>:

According to the above evaluation scores, the following data is gained:

##### 4.3.1 Second-grade index evaluation model

- Ideology and moral character (C1)

$$\begin{aligned}
 C1 &= 0.21D1 + 0.21D2 + 0.37D3 + 0.21D4 \\
 &= 0.21 * 93.26 + 0.21 * 92.81 + 0.37 * 93.38 + 0.21 * 92.82 \\
 &= 93.12
 \end{aligned} \tag{1}$$

From the scores, we can find that the ideology and moral character of the organization is excellent.

**Table 2 The Average Score of Each Member in the Talents Combination Evaluation sheet.**

Index code	Division chief 1	Division chief 2	Section chief 1	Section chief 2	Section chief 3	Section chief 4	Clerk1	Clerk2	Clerk3	Clerk4	Clerk5	Average
D1	91.57	94.29	92.86	93.57	93.57	94.29	93.57	93.57	92.14	92.86	93.57	93.26
D2	92.29	93.57	92.14	92.86	92.86	94.29	92.86	92.86	92.14	92.14	92.86	92.81
D3	92.29	93.57	92.86	93.57	93.57	94.29	93.57	93.57	93.43	93.57	92.86	93.38
D4	91.29	94.29	92.86	92.57	92.86	94.29	92.86	92.86	92.86	92.14	92.14	92.82
D5	93.00	93.57	91.43	92.86	91.43	95.00	92.86	93.57	91.43	92.86	90.71	92.61
D6	92.14	94.29	92.14	92.57	90.57	95.00	93.57	93.57	90.71	92.14	90.71	92.49
D7	90.86	93.29	90.71	91.43	90.71	95.00	90.57	94.29	88.57	90.71	88.57	91.34
D8	90.86	94.00	90.71	89.43	90.00	94.29	89.43	93.57	88.43	88.57	87.14	90.58
D9	91.57	93.29	91.43	92.14	90.00	95.71	90.71	94.29	88.43	90.00	87.86	91.40
D10	92.57	81.00	92.14	94.57	90.14	88.43	74.29	91.43	89.14	88.57	89.29	88.32
D11	91.57	92.86	91.43	92.14	89.29	89.29	86.43	92.14	88.57	90.71	88.57	90.27
D12	92.00	92.14	92.86	92.14	91.43	91.43	85.71	92.86	89.29	90.00	90.00	90.90
D13	92.14	94.57	92.86	90.71	92.29	89.29	90.71	93.14	88.57	87.86	87.14	90.84
D14	90.00	76.29	90.00	82.00	91.43	86.14	72.14	88.86	88.43	82.86	93.57	85.61
D15	92.57	92.43	90.71	90.29	87.14	91.86	85.71	91.43	88.43	91.43	87.43	89.95
D16	92.86	93.29	93.57	88.57	91.43	88.29	89.29	92.86	90.00	87.86	86.43	90.40
D17	92.57	92.14	90.14	92.14	87.86	86.86	91.00	90.00	90.00	88.29	85.71	89.70
D18	92.86	93.29	89.43	90.14	89.29	86.43	88.86	90.71	87.14	87.29	84.29	89.07
D19	96.86	96.71	88.71	88.57	88.57	87.71	85.71	89.29	86.43	85.57	82.86	88.82
D20	94.29	94.29	89.43	89.29	88.57	86.14	88.14	91.43	86.43	88.57	82.14	88.97
C5	91.43	93.00	89.20	90.71	87.86	93.00	89.29	93.14	87.86	89.86	87.86	90.29
C6	89.71	92.86	89.29	91.43	88.57	92.14	88.57	92.86	87.86	90.57	89.29	90.29
Index code	The 1st score	The 2nd score	The 3rd score	The 4th score	The 5th score	The 6th score	The 7th score					
C7	90	85	75	85	96	90	90					87.29
C8	90	85	75	85	95	90	90					87.14
C9	95	85	95	85	97	92	90					91.29
C10	90	85	90	85	97	92	90					89.86
C11	95	85	90	90	95	95	85					90.71

- Working attitude (C2)

$$\begin{aligned}
 C2 &= 0.19 * D5 + 0.23 * D6 + 0.19 * D7 + 0.19 * D8 + 0.19 * D9 \\
 &= 0.19 * 92.61 + 0.23 * 92.49 + 0.19 * 91.34 + 0.19 * 90.58 + 0.19 * 91.4 \\
 &= 90.80
 \end{aligned}
 \tag{2}$$

From the scores, we can find that the working attitude of the organization is excellent.

- Knowledge level (C3)

$$\begin{aligned}
 C3 &= 0.15D10 + 0.15D11 + 0.44D12 + 0.15D13 + 0.05D14 + 0.05D15 \\
 &= 0.15 * 88.32 + 0.15 * 90.27 + 0.44 * 90.9 + 0.15 * 90.84 + 0.05 * 85.61 + 0.05 * 89.95 \\
 &= 89.19
 \end{aligned}
 \tag{3}$$

From the scores, we can find that the knowledge level of the organization is good.

- Working capacity (C4)

$$\begin{aligned}
 C4 &= 0.09D16 + 0.05D17 + 0.29D18 + 0.29D19 + 0.29D20 \\
 &= 0.09*90.4 + 0.05*89.7 + 0.29*89.07 + 0.29*88.82 + 0.29*88.97 \\
 &= 90.01
 \end{aligned} \tag{4}$$

From the scores, we can find that the working capacity of the organization is excellent.

#### 4.3.2 First-grade index evaluation model

- Ideological quality (B1)

$$B1 = 0.18C1 + 0.82C2 = 0.18*93.12 + 0.82*90.80 = 91.22 \tag{5}$$

From the scores, we can find that the ideological quality of the organization is excellent.

- Professional competence (B2)

$$B2 = 0.18C3 + 0.82C4 = 0.18*89.19 + 0.82*90.01 = 89.86 \tag{6}$$

From the scores, we can find that the professional competence of the organization is good.

- Achievements (B3)

$$B3 = 0.68C5 + 0.32C6 = 0.68*90.29 + 0.32*90.29 = 90.29 \tag{7}$$

From the scores, we can find that the achievements of the organization are excellent.

- Structural condition (B4)

$$\begin{aligned}
 B4 &= 0.38C7 + 0.10C8 + 0.37C9 + 0.10C10 + 0.05C11 \\
 &= 0.38*87.29 + 0.10*87.14 + 0.37*91.29 + 0.10*89.86 + 0.05*90.71 \\
 &= 89.18
 \end{aligned} \tag{8}$$

From the scores, we can find that the structural condition of the organization is good.

#### 4.3.3 Overall talents combination evaluation model (A)

$$\begin{aligned}
 A &= 0.06B1 + 0.22B2 + 0.61B3 + 0.11B4 \\
 &= 0.06*91.22 + 0.22*89.86 + 0.61*90.29 + 0.11*89.18 \\
 &= 90.13
 \end{aligned} \tag{9}$$

The score of overall talent combination evaluation of the personnel of the Office of Academic Affairs of T College is 90.13. From the score, we can see that the overall evaluation of the combination is excellent<sup>[8]</sup>. From the score of each member in the talents combination evaluation sheet gained during the evaluation process, we can see that the evaluation index scores of the organization and leading capacity (D19) of division chief 1 and division chief 2, i.e. the organization and leading capacity of the organization, are excellent, which indicates that they have very strong leading capacity. From the overall evaluation results, we can see that the evaluation scores of the talent combination of the office of academic affairs are excellent, which indicates that the organization achieves talents complementation, organic match, and mutual enhancing and forms a strong and united team<sup>[9]</sup>.

## CONCLUSIONS

College talent combination is evaluated by using AHP<sup>[10]</sup>. The evaluation result is good for configuring personnel properly and promoting the development of college talents combination<sup>[11]</sup>. Adopting the method of combining qualitative method with quantitative method, synthesizing the actual situation of college talents combination, and through the repeated argumentation of relative experts and scholars, the evaluation system has very strong operability, and the evaluation result has high reliability. Through the utilization in practice, it is found that the effect of the index system is good, thus it is a scientific and simple talents combination evaluation method.

## ACKNOWLEDGEMENTS

This work was supported by Research Foundation for Social Science Research Project of Jilin Province Department of Education of 2011 for the 12th Five-Year Program.

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