Research on Vocational Teachers' Occupational Well-being Based on Analytical Hierarchy Process

Tang Ling

In-Text Citation: (Ling, 2020)
To Cite this Article: Ling, T. (2013). Research on Vocational Teachers' Occupational Well-being Based on Analytical Hierarchy Process. *International Journal of Academic Research in Progressive Education and Development. 2(4),* 15-28.

Research on Vocational Teachers' Occupational Well-being Based on Analytical Hierarchy Process

Tang Ling
(Guangdong Technology & Normal University, Guangzhou, China)
293 Zhongshan Road, Tianhe District, Guangzhou, Guangdong,510665, China
Email: Jasminetangling@gmail.com

Abstract
The study is based on Analytical Hierarchy Process (AHP) which focuses on the vocational teachers' occupational well-being. It is in a sample of 163 teachers from 13 vocational schools in Guangzhou in China. The research defines vocational teachers' occupational well-being into three supportive systems which including society, school and personal system. More specifically, it divides the three-system into sixteen hierarchies. In conclusion it finds that, School support system has the most significant impact on vocational teachers' occupational well-being with the weight reaching to 0.47, then followed by social support system and the weight is 0.38.While the lowest is the personal system which weight is 0.15. As to the sixteen hierarchies of teachers' well-being, humanistic and democratic management, pay, training and development as well as social recognition and reputation are the top four elements which weights are 0.1645, 0.1558, 0.1504, and 0.1216 respectively.
Keywords: Analytical Hierarchy Process, Vocational Education, Teachers' Well-being

Introduction
Ancient Chinese Philosophy of Well-being
"Confucianism, Taoism and Buddhism" those ancient Chinese philosophies have profound impact on Chinese culture and people's thinking pattern. Each of them, from their own views, illustrated the Connotation of "well-being". The Confucian emphasized "Good virtue brings happiness". Namely, the one who pursuits the righteousness, rational and keeps from desire can achieve happiness (Sha, 2005). While, Taoists believed that eliminate material desires help man to be pleasant. As for Buddhist, people's well-being was sourcing from their belief on Buddhism (Liu, 2011). Chinese traditional culture affected the view of happiness. In ancient China, teachers should be sages with the moralities of selfless and dedication. Till the foundation of new China teachers were one part of honorable workers with low income. However, the teacher was becoming one of the professional vocations analogous to doctors and lawyers (Chen, 2012). The images of teachers have changed in China, it is not only emphasis on dedication and desire less, but pay more attention to career well-being and happiness.

Previous studies

The research, on the well-being of Chinese mainland, began at the early 21st century, in the context of a well-off society. It can be divided into three stages: 2002 to 2004 was the embryonic stage, while the period of 2005 to 2007 featured developments, 2008 till today is the Contending Phase (Zhang, 2011). Nowadays the researches of "teachers' well-being" have been enriched. They are entitled as "Teachers' Subjective Well - being", "Teachers' accomplishment", "The Orientations to Teachers' Happiness" and "Positive Psychology Movement" (Chan 2012). Some of them analyzed how social background and students' behavior affected teachers' well-being. And the result is various according to the teachers' group. For example, most studies emphasize that female teachers can be more enjoyable than male teachers which was first figured out by Eagly, Wendy and Nancy in the beginning of the 20th century. Moreover well-being does not rise when income rises. Well-being remains relatively consistent with the life span due to personality, although current events in people's lives can either raise or lower well-being temporarily (Diener, Suh, Lucas, & Smith, 1999).In addition, Wealth does not bring well-being (Myers, 1993). Yet, there are rare studies of Chinese teachers' well-being in the vocational education area. As for methods many researchers adopted the SPSS Scale or introduced the "general well-being schedule (GWB created by Fazio)".

Turning to the meaning of well-being, it is the, pervasive sense that life has been and is good. It is an ongoing perception that this time in one's life, or even life as a whole, is fulfilling, meaningful, and pleasant"(Myers, 1993). From a psychological perspective well-being is a complex concept containing multiple dimensions that either cannot be precisely quantified or summed together. If so, it still could be feasible to develop approximate measures of happiness, or at least its various dimensions. (Stanford Encyclopedia of Philosophy, 2011).It is based on the overall evaluation of a critical teacher's life (Shin & Johuson, 1978). This initial culminated in the values of action classification and its strengths and virtues (Peterson & Seligman, 2004) that included 24 characters strengths grouped under six overarching virtues claimed to be shared across culture and human history (Dahlsgaard, Peterson, & Seligman, 2004). These six faceted are wisdom and knowledge, courage, humanity, justice, temperance and transcendence (Chan, 2012). While other researchers think happiness should include life satisfaction, pleasure, or a positive emotional condition. Nevertheless, these above factors are described from the subjective and micro aspects. Accordingly, social, school and individual elements have great influence to teachers' well-being, moreover, these three can be mutually integrated.

Definition of Vocational Teachers' Occupational Well-being

Teachers' occupational well-being is a complex system which affected by both subjective and objective factors. Research in different cultures indicates that school teachers are among those professionals with the highest levels of job stress (Stoeber & Rennert, 2008), often caused by an excessive workload, failure of pupils to work or behave properly, poor relationships with colleagues, lack of suitable resources, constant changes within the profession, an inadequate salary and difficult interactions with the parents of students (Santavirta, Solovieva, & Thworell, 2007). In this article it is mainly derived from the following three dimensions which consist of the society, school and individual, to study the impact on teacher's well-being. The specific are shown in table 1:

Table1: Dimensions affecting teachers' well-being

Dimensions	Content
Society System	Pay ,Social Recognition and Reputation, Welfare, Respect and Support from students' Parents , Family Pressure and Support
School System	Humanistic and Democratic Management, Training and Development, Pleasant working atmosphere, Teaching Condition and Resources, Students' Growth and Achievements, Intensity of Teaching
Personal System	Teachers' Classification, Occupational Burnout, Self-Positioning, Self-Realization, Teachers' Fitness

Table 1 reflects the three systems which affect vocational school teachers' well-being. The design of the questionnaire is also based on these dimensions. Vocational education is different from general education therefore, the study of vocational teachers' well-being should take the characteristics of vocational teachers into account and vocational education should incorporate the occupation capacity into students learning system (Xu, 2007). Thus, teachers' vocational education should have theoretical knowledge just same as general education teachers. Moreover, they require acquiring certain practical skills. So they confront with multiple pressures among the teaching groups (Li, 2010). One thing to be pointed out is the teachers' classification in personal system in Figure 1. It is based on vocational teachers' features in which consisting of empirical and theoretical teachers. Therefore, the research distinguishes the well-being of vocational teachers by classification in personal system.

Methods
Participants
The data was based on the questionnaires among 163 vocational teachers of 13 vocational schools in Guangzhou. There were 180 questionnaires distributed among which 163 valid were collected back. The total response rate was 90.5%, and of the 163 respondents, 93(57.14%) were females while 70(42.86%) were males. All participants were in various phases of their careers. Hence the response rates for class, subject were not biased. There were 40(25%) empirical teachers, 53(33.43%) theoretical teachers and 70 (41.57%) teachers were both empirical and theoretical. Moreover, Since Chinese vocational education was divided into junior vocational schools and senior vocational collage, in these samples 109 (67%) respondents were from the senior and 55(33%) from junior.

Data Analysis
Figure 1 is based on the results of the questionnaire, where a1, a2, a3, a4 and a5 refer to the five dimensions of pay, social recognition and reputation, welfare, students' parents' respect and support, family pressure and support respectively in social support system. b1, b2, b3, b4, b5 and b6 represent the six dimensions of humanistic and democratic management, training and develop, pleasant working atmosphere, teaching condition and resources, students' growth and achievements, working strength in school support system. While c1, c2, c3, c4 and c5 stand for

the five dimensions of teachers' classification, occupational burnout, self-positioning, self-realization and teachers' fitness in personal support system.
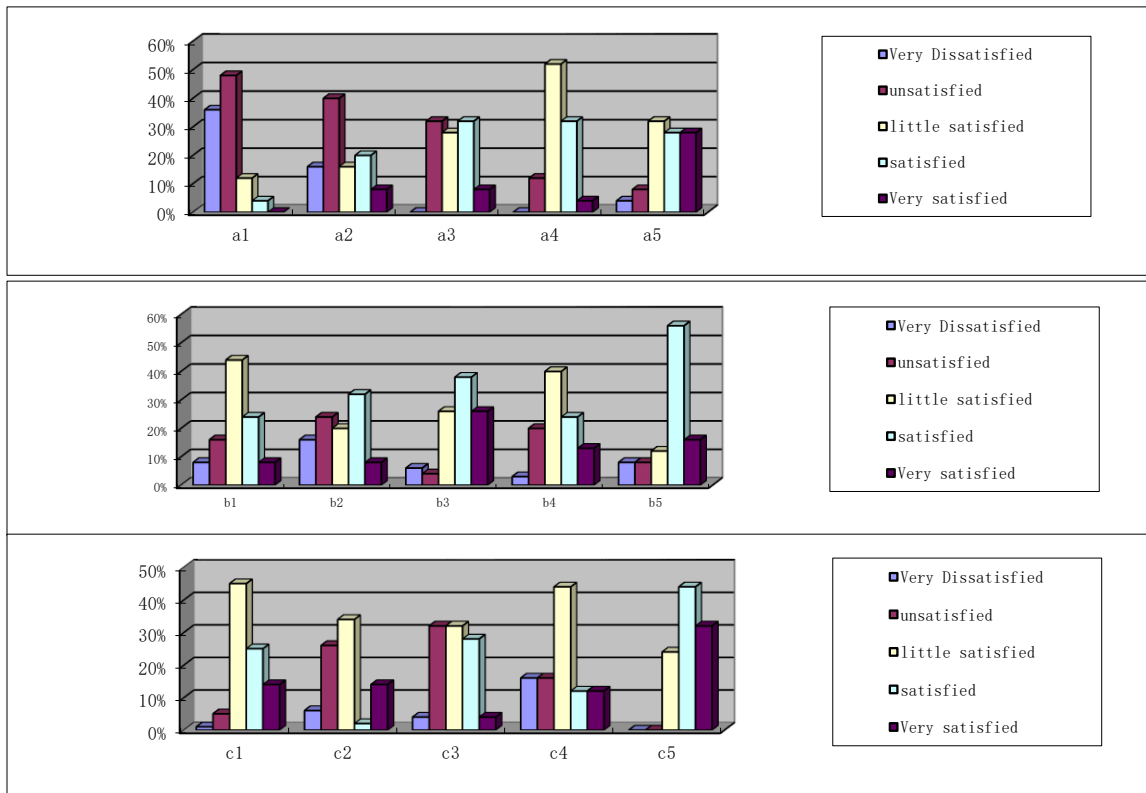

Figure1: The results of 163 questionnaires

The paper employs the Analytical Hierarchy Process (AHP) to study vocational teachers' well-being. From the histogram we can have a view of vocational teachers' satisfaction in various dimensions. From social perspective about 84% vocational teachers are dissatisfied or very dissatisfied with their pay, only 4% satisfied. Besides, 56% of the teachers are not satisfied or very dissatisfied with their social statues and recognitions. On the contrary, welfare is in a good satisfaction, about 68% teachers are satisfied or very satisfied about that, and among the dissatisfy section most of them are from privacy schools. And it is also relatively high satisfaction in students' parents support and family support from them own. In school support system, 68% teachers are dissatisfied or little satisfied with the way of school management. And 56% of them are satisfied with their students' performance or achievements. Then, 48% teachers are dissatisfied or very dissatisfied with the intensity of teaching. As to personal system, about 70% teachers satisfied or very satisfied with the subjects they teach. 90% of them are satisfied or very satisfied with their health conditions and most of them do physical excise after work. While, 68% teachers think their passion on teaching will decrease as the time goes by, and 56% think they have already in vocational burnout.

Measures and Procedure

The Analytical Hierarchy Process (AHP) has developed by Saaty (1977, 1980, 1988, 1995, 2008) and is one of the best known and most widely used MCA approaches. It allows users to assess the relative weight of multiple criteria or multiple options against given criteria in an intuitive manner (Kasperczyk & Knickel , 2005). To generate priorities of teachers' well-being we need to decompose the decision into the following steps. (Saaty, 2008)

1. Define the problem and determine the kind of knowledge sought. Since teachers' occupational well-being is defined into three supportive systems which including society, school and personal system (Saaty, 2008). More specifically, it divides the three-system into sixteen hierarchies. (Details shown in Table1)

2. Structure the decision hierarchy from the top with the goal of the decision (teachers' well-being), then the objectives from a broad perspective, through the intermediate levels to the lowest level. (Indicator framework shown in Figure2)
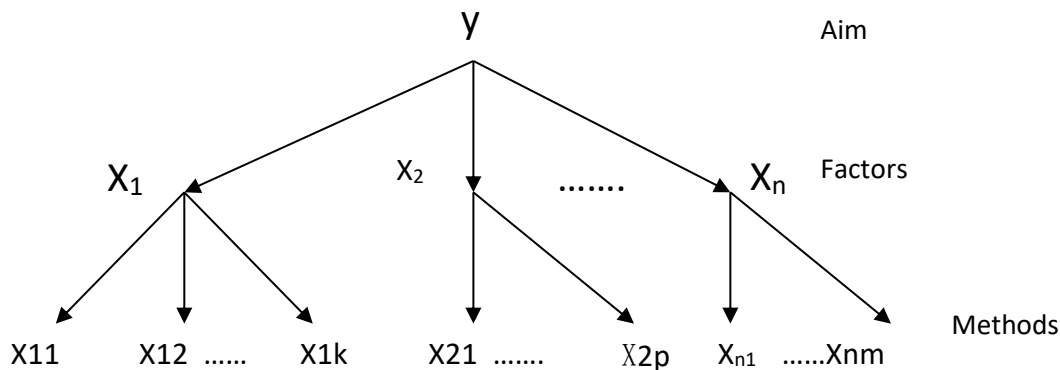
Figure2 Hierarchy Framework

y stands for the Linear combination of X1 ,X2 ……Xn:

$$y = w_1 x_1 + w_2 x_2 + \ldots\ldots + w_n x_n = \sum_{i=1}^{n} w_i x_i \qquad (1)$$

$$(w_i > 0, \sum_{i=1}^{n} w_i = 1)$$

3. Construct a set of pairwise comparison matrices. Each element in an upper level is used to compare the elements in the level immediately below with respect to it (Saaty, 2008). To make comparisons, we need a scale of numbers that indicates how important one element is over another element with respect to the criterion or property with respect to which they are compared. Formula (2) exhibits the scale. It compares the relative weights in pairs by scaling the significance from 1 to 9 (Saaty, 2008)

$$
\begin{cases}
x_i/x_j=1: \text{Equal Importance;} \\
x_i/x_j=3: \text{Moderate importance;} \\
x_i/x_j=5: \text{Strong importance;} \\
x_i/x_j=7: \text{Very strong importance;} \\
x_i/x_j=9: \text{Extreme importance;}
\end{cases}
\tag{2}
$$

4. Use the priorities obtained from the comparisons to weigh the priorities in the level immediately above. Do this for every element. Then for each element in the level above add its weighed values and obtain its overall or global priority. Continue this process of weighing and adding until the final priorities of the alternatives in the bottom most level are obtained (Saaty, 2008). Table 2 exhibits an example in which used the scale of Formula (2) to compare relative importance in personal system. One compares a factor indicated on the left with another indicated at the top and answer the question: How many times more, or how strongly more is that factor in the personal system than the one at the top? One then enters the number from the scale that is appropriate for the judgment: for example enter 9 in the" Occupational Burnout, Self-Positioning" position meaning that Occupational Burnout is 9 times important than Self-Positioning. It is automatic that 1/9 is what one needs to use in the" Occupational Burnout, Self-Positioning" position (Saaty, 2008).

Table 2 Relative Importance in Personal system

Teachers' Classification	Occupational Burnout	Self-Positioning	Self-Realization	Teachers' Fitness
Occupational Burnout	1	9	5	2
Self-Positioning	1/9	1	1/3	1/9
Self-Realization	1/5	2	1	1/3
Teachers' Fitness	1/2	9	3	1

Formula (3) exhibits the skew-symmetric matrix in which the scale is used to compare relative two elements in table1.

$$
A=\left(x_i/x_j\right)_{n\times n}=\begin{pmatrix}
1 & x_1/x_2 & \dots & x_1/x_n \\
x_2/x_1 & 1 & \dots & x_2/x_n \\
\dots & \dots & \dots & \dots \\
x_n/x_1 & x_n/x_2 & \dots & 1
\end{pmatrix}
\tag{3}
$$

5. To identify whether the skew symmetric matrix is acceptable or not, Linear algebra is introduced. A refers to the skew-symmetric matrix above. And the linear algebra is used to get the maximum eigenvalue λ_{max} and Corresponding eigenvectors W.

$$Aw = \lambda_{max} w \tag{4}$$

While the Component of w is the weight of several elements (set the elements number as n). Moreover, testers are required to pairwise comparison independently under different factors of the tri- system. If the k_{th} tester in pairwise comparison is x_i / x_j .It can be assigned the value of $a_{ijk} \quad i,j = 1,2,.....n, K = 1,2,.....,m$.

Then, it can compute the geometric means:

$$a_{ij} = \sqrt[m]{\prod_{k=1}^{m} a_{ijk}} \tag{5}$$

In addition, work out the weights of each hierarchy by square root law. Then multiply each skew symmetric factor in A:

$$M_i = \prod_{k=1}^{n} a_{ij} \, (i = 1,2,......n) \tag{6}$$

Furthermore, $\overline{w_i} = \sqrt[n]{M_i}$ which is the N-th root of M_i that have computed. And come up with the weight coefficient as follow:

$$w_i = \frac{\overline{w_i}}{\sum_{i=1}^{n} \overline{w_i}} \quad (i = 1,2,......n) \tag{7}$$

Then it comes to the consistency test through which transitivity is unnecessary in the pair wise comparisons. It means that when $x_i / x_j = a_{ij}, x_j / x_k = a_{jk}$ and it is not necessary for $x_i / x_k = a_{ij} a_{jk}$. For all i, j, k are met that:

$$\frac{x_i}{x_k} = \frac{x_i}{x_j} \times \frac{x_j}{x_k} \tag{8}$$

In addition, $CI = \dfrac{\lambda_{max} - n}{n-1}$ is used to identify the consistency, the smaller value it is, the nearer to consistency and when $CI = 0$ stands for totally consistent (CI here is short for Consistent Index). It is used to judge whether the consistency of a skew symmetric is acceptable or not in matrix A. Then, $CR = \dfrac{CI}{RI}$ in which RI is short for Random Index and CR as the abbreviation of Consistent Ratio. And when $CR < 0.1$, the skew symmetric matrix is acceptable, otherwise not.

Results

Using the method above, we got the statistics and results of each factor's weight index show in following tables:

Table2 weights of the tri-elements and the Skew-symmetric matrix

	Society	School	Person	weight
Society	1	0.81	3.41	0.38
School	1/0.81	1	4.31	0.47
Person	1/1.45	1/4.31	1	0.15

Table3 Weights and skew-symmetric matrix of hierarchies in society system

Society	a1	a2	a3	a4	a5	weight
a1	1	2.21	3.52	5.89	2.79	0.41
a2	1/2.21	1	4.32	5.49	3.36	0.32
a3	1/3.52	1/4.32	1	2.87	2.35	0.13
a4	1/5.89	1/5.49	1/2.87	1	1.78	0.07
a5	1/2.79	1/3.36	1/2.35	1/1.78	1	0.07

Table4 Weights and skew-symmetric matrix of hierarchies in school system

school	b1	b2	b3	b4	b5	b6	weight
b1	1	2.19	4.48	3.12	4.51	3.59	0.35
b2	1/2.19	1	5.27	4.15	5.97	4.85	0.32
b3	1/4.448	1/5.27	1	2.21	1.37	1.75	0.10
b4	1/3.12	1/4.15	1/2.21	1	2.25	2.86	0.10
b5	1/4.51	1/5.97	1/1.37	1/2.25	1	4.53	0.08
b6	1/3.59	1/4.85	1/1.75	1/2.86	1/4.53	1	0.06

Table5 Weights and skew-symmetric matrix of hierarchies in personal system

Personal	c1	c2	c3	c4	c5	weight
c1	1	4.31	3.76	3.78	3.54	0.46
c2	1/4.31	1	3.34	2.31	3.75	0.23
c3	1/3.76	1/3.34	1	4.32	3.52	0.16
c4	1/3.78	1/2.31	1/4.32	1	3.21	0.10
c5	1/3.54	1/3.75	1/3.52	1/3.21	1	0.06

With the above calculation, we got the weights of each factor, the final consistency test show

$$CI_{person}=0.012, CR_{person}=0.011<0.1, \qquad CI_{school}=0.01455, CR_{school}=0.025<0.1$$

$$CI_{society}=0.0527, CR_{society}=0.017<0.1, CI_{three\,system}=0.015, CR_{three\,system}=0.004<0.1$$

.Therefore, all three elements are consistency. And through calculation it gets the weights of social support system, school support system and personal support system, specific shown in Figure 3:
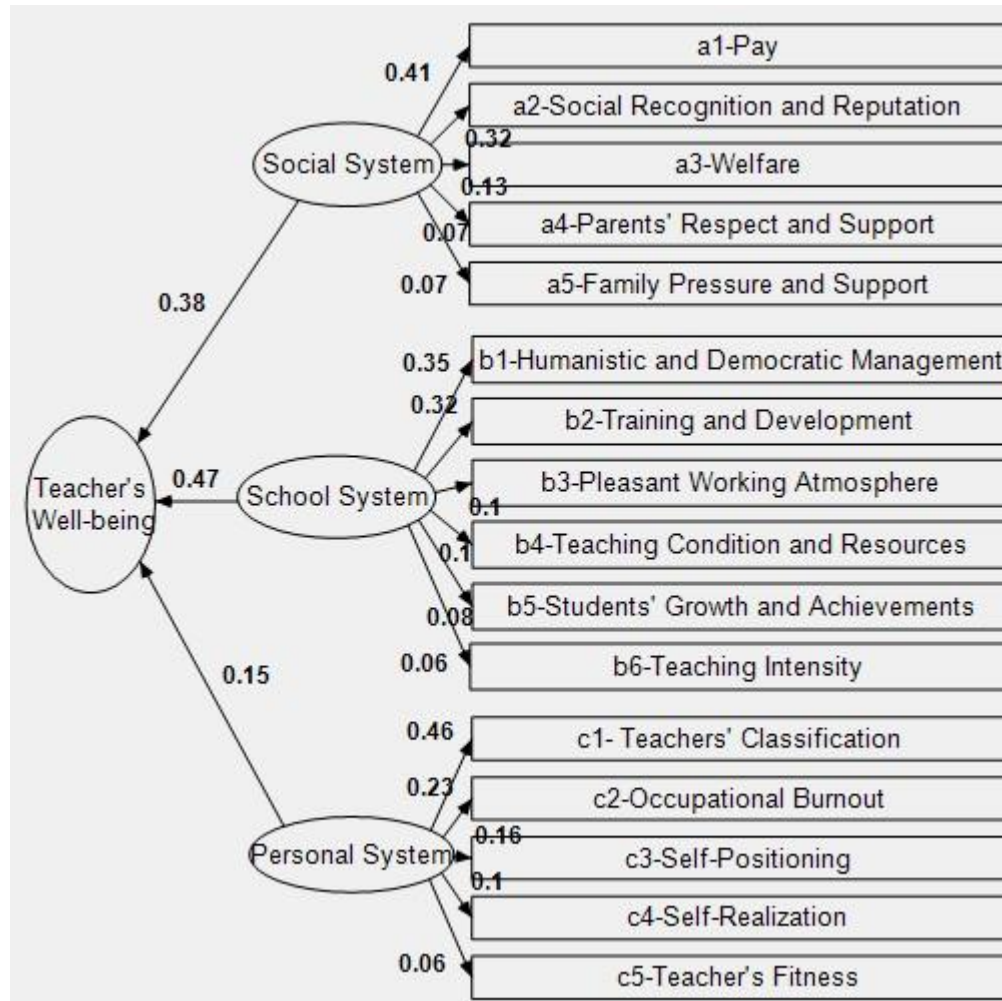
Figure3: The Tri-System of Teachers' Well-being and the Wight of each hierarchy

From the figure we find the weights of every hierarchy in social, school and personal system. Moreover, it finds that the school support system is of the most significant impact on vocational teachers' occupational well-being with the weight of 0.47, next is social support system the weight is 0.38, and the lowest is the personal system which weight is 0.15.

Among the most devoted factor school support system, it can be obviously judged that the humanistic and democratic management as well as training and development Condition are the top two elements. Their weights are 0.35 and 0.33. Next is the pleasant working atmosphere together with teaching and resources both their weights are 0.1. However, the weight for students' growth and achievements is 0.08. Then is the teaching intensity about 0.06. The result shows that Chinese vocational teachers draw most attentions on their life and development instead of students or teaching. It is mainly caused by the reality that most of the vocational schools in china flaunt to create a humanistic and democratic atmosphere but seldom set it into practice. Therefore, teachers can hardly transfer their Concern from personal factors to the students.

While, among the social system the top two elements are pay and social recognition or reputation. Their weights are 0.41and 0.32, followed by teachers welfare 0.13. Finally comes to

the respect and support from students' Parents as well as family pressure and support from their own family, both their weights are 0.07. Actually vocational education does not get the same status with general education in China which can be seen from the education investment. Chinese education investment was below 4% of its' GDP until 2012(Chunlin Yuan& Guo Zhang, 2012), while the world average was 4.9% this year. As to vocational education it is around 12% of the less than 4% these years (Xiao Liu& Weiping Shi,2011). Therefore, limited inputs are difficult to meet the rapid developing requirements of vocational education. More over, vocational teachers are relatively lower revenue than many other occupations which including general education teachers, it is somehow affected their social status. And all those factors affect the vocational teachers' occupational well-being. Thus, they have strong requirements to improve their salary and social status.

As to personal system, teachers' well-being is fiercely influenced by their classifications. The weight of teachers' classification is 0.46 superior than any other factors in this group since vocational school teachers can be divided into empirical and theoretical. And teachers' well-being of these two parts is very different. For it is found that empirical teachers are of higher fulfillment than theoretical teachers .And it is mainly caused by the intellectual constitution of vocational school students. Most of them are good at specific image thinking which called crystallized intelligence by Cattell and J.Horn. However, they are insensitive in theoretical knowledge. Hence, there are more interactions in empirical courses in vocational education training and teachers get more accomplishment. The second vital factor in personal system is occupational burnout which weight is 0.23. Most vocational school teachers think their sense of happiness will be affected by the seniority. Following factors are self-positioning, self-realization and teachers' fitness; their respective weights are 0.16, 0.10, and 0.06. One thing to be pointed out is that many teachers do think that health is very essential, however teachers' health care and welfare in Guangzhou is at a satisfactory level and most teachers do not need worry about these factors. Thus lead the fitness to a fewer concerning elements in teachers' well-being and relatively low weight.

Through the above calculation and analysis we were able to comparing the weights of social, school and personal system and each factor below them. Then what would the results be if we put all the sixteen elements together. To get this we set "teachers' well-being" as a variable y and according to figure3 we can infer the function related to the variable y.

$$y = 0.38a + 0.47b + 0.15c$$

$$\begin{aligned}
&= 0.38 \times (0.41a_1 + 0.32a_2 + 0.13a_3 + 0.07a_4 + 0.07a_5) \\
&\quad + 0.47 \times (0.35b_1 + 0.32b_2 + 0.10b_3 + 0.10b_4 + 0.08b_5 + 0.06b_6) \\
&\quad + 0.15 \times (0.46c_1 + 0.23c_2 + 0.16c_3 + 0.10c_4 + 0.06c_5)
\end{aligned} \tag{9}$$

$$\begin{aligned}
&= 0.1558a_1 + 0.1216a_2 + 0.0494a_3 + 0.0266a_4 + 0.0066a_5 \\
&\quad + 0.1645b_1 + 0.1504b_2 + 0.047b_3 + 0.047b_4 + 0.0376b_5 + 0.0282b_6 \\
&\quad + 0.069c_1 + 0.0345c_2 + 0.024c_3 + 0.015c_4 + 0.009c_5
\end{aligned}$$

Thus, we know the top four elements affect vocational teachers' wellbeing among the sixteen hierarchies. They are humanistic and democratic management, pay, training and development as well as social recognition and reputation. And their respective weights are 0.1645, 0.1558, 0.1504, and 0.1216. It forms a dynamic system shown as follow:
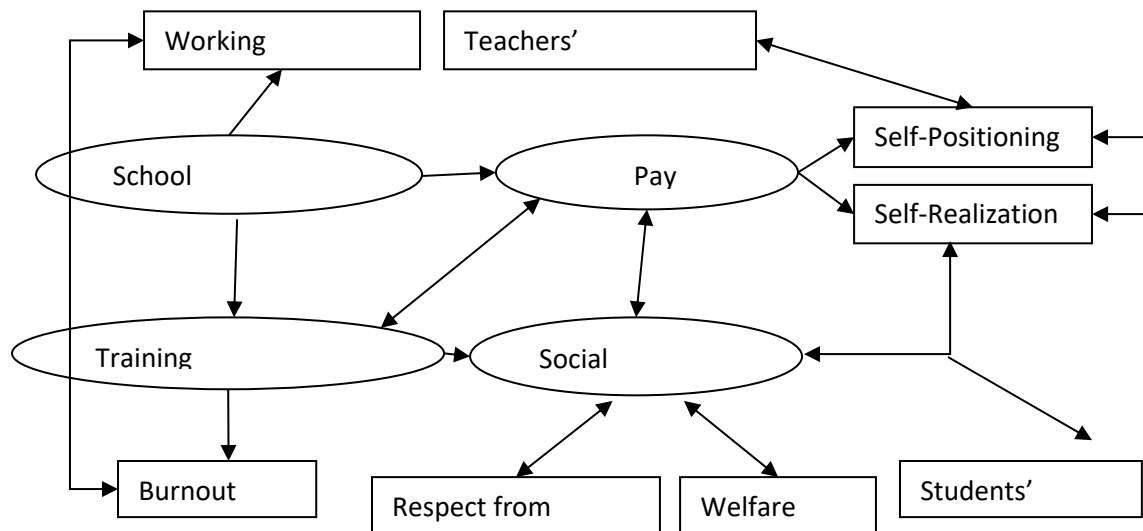
Figuer4: Dynamic System of Vocational teachers' occupational well-being

Teachers positioning somehow differs for their classification, thus urges teachers improve themselves. When teachers upgrade their occupational abilities their pay arises. In addition, self-position and self-realization can better achieved when teachers get more training and development. Then after teachers realize themselves the occupational burnout decreased. As for teachers' social statue it is closely related to students' parents respect and support of and the state of their welfare. The dynamic system tells that teachers' occupational well-being is mainly depends on pay, social development, training and development together with chances of training and development. While other elements effect with each other.

Discussions and Deficiencies

The research defines vocational teachers' occupational well-being into social, school and personal supportive system. It finds that, school support system is of the most significant impact on vocational teachers' occupational well-being. Followed by social support system and personal system is the least. As to the sixteen hierarchies, humanistic and democratic management, pay, training and development as well as social recognition and reputation are the top four elements that affect teachers' wellbeing.

Accordingly, it puts forward some suggestions and measures to improve vocational teachers' occupational well-being. Firstly, the investment in vocational education should be increased by the states. These funds should be used to strengthen school management as well as to improve teaching facilities. What need to be highlighted is to improve vocational teachers' salary. Secondly, government or education faculty should promote the vocational teachers' social status and reputation. For vocational schools, they should strengthen democratic management,

allowing instructors to participate in the daily management. Thirdly, it should enrich the occupational life of vocational teachers, such as establishing teachers' centers where teachers can hold activities and communicate with each other. In addition provide more opportunities for teachers to improving themselves which releases their occupational burnout in a certain level. Finally, vocational teachers should strengthen themselves through lifelong learning. In this way, they could get more fulfillments.

For further study, the paper has its own limitations. As for the samples that are chose, most of them are young teachers, wherefore it is poor in representative. Besides, it is also lack of private vocational school samples which make the results not so inclusive. As to the research method, the AHP can be considered as a complete aggregation method of the addictive type. Detail and often important, information can be lost by such aggregation. Although the questionnaires can intuitively show the inner states of testers, it can not show all. In the further observation more research methods should be used.

Reference

Cattell, R. B. (1963), Theory of fluid and crystallized intelligence: A critical experiment. *Journal of Educational Psychology, 54,* 1-22.

Chuanlin, Y., & Guo, Z. (2012), 4% the percentage affects China nineteen years. *Sohu Education.* March 5th, 2012, from: http://learning.sohu.com/20120306/n336877952.shtml

David, W., Chan. (2009), The hierarchy of strengths: Their relationships with subjective well-being among Chinese teachers in Hong Kong: *Teaching and Education, 25,* 867-875.

Diener, E., Suh, E. N., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*, 276-302.

Dahlsgaard, K., Peterson, C., & Seligman, M.E.P. (2005). Shared virtue: The convergence of valued human strengths across culture and history. *Review of General Psychology, 9,* 203-213.

Xu. (2007) Vocational Education Theory, 7-11.

Sha. (2005) Education. *To Human Happiness [M] Beijing Education and Science Press.* 12-65

Liu. (2011). The Cultural Field Research of Career Happiness of Famous Teachers in Basic *Education of China. 5.*（13-14）

Li. (2010) The Comparative Study of Duel-qualified Teachers Cultivation. 1-5

Kasperczyk, N., & Knickel, K. (2005) Analytic Hierarchy Process Institute for Enviromental Studies.1-6

Myers, D. G., and Diener, E. (1995). "Who Is Happy?" Psychological Science, 6(1): 10–19.

Peterson, C., Park, N., & Seligman, M. E. P. (2004). Character strengths and virtues: A handbook and classification. Washington, DC: American Psychological Association.

Santavirta, N., Solovieva, S., &Theorell, T. (2007). The association of job strain and exhaustion in a cohort of 1,028 Finnish teachers. *British Journal of Educational Psychology, 77(1),* 213-228.

Silvia, Simbula, Chiara, Panari, Dina, Guglielmi., & Franco, F. (2012). Teachers' Well-being and Effectiveness: the Role of the Interplay between Job Demands and Job Resources. 69, 729-738.

Dan, H. (2011). Happiness. Stanford : Stanford Encyclopedia of Philosophy.

Stoeber, J., & Rennert, D. (2008). Perfectionism in school teachers: relations with stress appraisals, coping styles, and burnout. *Anxiety, Stress, & coping, 21,* 37-53.

Shin, D., & Johnson, D. (1978). Avowed happiness as an overall assessment of the quality of life. *Social Indicators Research, 5(1),* 475-492.

Ryan, R. M., & Deci, E. L. (2000) Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55,* 68-78.

Thomas, L. S. (2008). Decision making with analytic hierarchy process Int. J. Service Science, Vol.1 No.1, 2008, from:
www.fcmfmpep.org.br/disciplinas/.../MB.../Artigo_Saaty_2008.pdf

Wanous, P., Reichers, A. E., & Hudy, M. J.(1997). Overall Job Satisfaction: How good are single-item measures? *Journal of Applied Psychology*, 82, 247-252.

Xiao, Liu, & Weipin, S. (2011). Analysis and reflection of Current status in vocational education, *Journal of Vocational Education Forum*, 4, 4-8

Yongming, C. (2012). Teachers' Education, Beijing University Press, 22-23.

Zhongwei, Z. (2011). The Reflection and Review of "Teachers' Well-being Research", *Journal of Education Exploration*, 9, 14-15