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ABSTRACT

Vocational trainers at 15 vocational training centers in Taiwan were surveyed by mail to determine if the satisfaction of the trainers was related to in-service experience, age, job title, method of teaching, education level, factory experience, and teacher training. Other variables in the study included vocational training administration, vocational training laws and regulations, and vocational training curriculum and instruction. Of 649 questionnaire packets distributed, 420 usable ones were received, a return rate of 64.7 percent. Research findings showed high positive correlations between age and professional satisfaction and working experience and professional satisfaction. Vocational trainers were unhappy about the personnel questions included. They also complained about recruiting, lack of opportunities for on-the-job training, few chances for promotion, and heavy work loads. Vocational trainers expect real improvement from the current administration. They also expect a social movement to assist in retaining confidence in vocational certificates. (A 57-item reference list is included in both English and Chinese.) (CML)

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A Study of Vocational Trainers' Professional Satisfaction
In Taiwan Republic of China

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Introduction

The development of manpower resource is closely tied to the economic prosperous. With regard to full employment rate, Taiwan was heavily relied on labor intensive industries which put vocational training aside. Today, world trade competition revokes the demands of labor quantity expansion as well as quality improvement of vocational training in Taiwan. Due to the increasing needs of skilled level workers which strongly affects Taiwan economic growth rate, vocational training become an effective tool while pursue high economic growth. Vocational trainer who takes response for the critical duties of manpower development should have the regard of public attention as well as public school teachers. This study reveal facts related to vocational trainers: background information, vocational training administration, vocational training laws and regulations, vocational training personnel, vocational training curriculum, and instruction. Research findings indicate a positive high correlation between age and working experience toward professional satisfaction. Vocational trainer unhappy about the questions of personnel section in the questionnaire. They also complain about recruit, less opportunity of on-the-job training, few chances of promotion, and heavy work load. Vocational trainers expect a real improvement on current administration, and a social movement to retain confidence of vocational certificates. Research finding suggest: an enhancement of vocational training administration, adjustment of packet instruction, imporvement of cooperative coordination, provide full time recruit positions, revise vocational training laws and regulations, offer more on-the-job training, provide adquate budget, and develop specific instruction models. A modified administrative model is developed to encourage the changes of current vocational training administration.

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Purpose and Research Hypotheses

The purpose of this study was to examine the development of satisfaction to the vocational trainer in Vocational Training Centers (VTC) of Taiwan and the degree to which it might be found among the individuals who possess it. In addition, this study also attempted to develop a post-hoc model, based on vocational training, which could be used to evaluate vocational training center. In order to achieve this purpose, the following hypotheses were established for examination:

H1 : There is no difference in professional satisfaction among vocational trainers of Vocational Training Centers (VTC) based on:

1. In-service experience
2. Age
3. Title
4. Packet teaching
5. Education
6. Factory experience
7. Teacher training

In testing Hypothesis 1, one way ANalysis Of VAriance (ANOVA) was used. A summary of result is presented in Table 1. The results of this test show that except "In-service experience" there were no significance with .05 level. Which implied the need of a further clarification for this hypothesis. A follow-up was done and summarized in Table 2. The results inferred that vocational trainers with 9.55 years or more of "in-service experience" had much higher score in professional satisfaction than trainers with 2.59 or less years of experience.

Table 1

Analysis of Variance (ANOVA) for In-service Experience, Age, Title, Packet teaching, Education, Factory experience, and Teacher training among vocational trainers of VTC institutions

Variates	DF	Value	Mean Square	F Ratio	Probability
In-service experience	2	1.05602026		3.47 *	0.0363
Age	2	0.29454453		0.97	0.3847
Title	1	0.35761011		1.17	0.2819
Packet teaching	1	0.41516643		1.36	0.2466
Education	4	0.12423219		0.41	0.8022
Factory experience	2	0.16821773		0.55	0.5777
Teacher training	1	0.57361209		1.88	0.1739

* At the .05 level of significance

Table 2

Results of Pairwise Contrast on In-service experience

PSI Hat Contrast	Lower Confidence	Difference	Upper Confidence
T -- T			
3 -- 2	-0.114	0.179	0.473
3 -- 1	0.088	0.368	0.648*
2 -- 3	-0.473	-0.179	0.114
2 -- 1	-0.085	0.189	0.463
1 -- 3	-0.648	-0.368	-0.088*
1 -- 2	-0.463	-0.189	0.085

"1" indicates vocational trainers with in-service experience less than 2.59 years which occupies 27% of trainers
 "2" indicates vocational trainers with more than 2.59 years and less than 9.55 years which occupies 46% of trainers
 "3" indicates vocational trainers with more than 9.55 years of in-service experience which occupies 27% of trainers
 "*" reaches the .05 level of significance

H2 : There is no difference in vocational training administration , legislation, personnel, curriculum and instruction among vocational trainer of VTC.

The results of Hypothesis 2 were run through one-way analysis of variance (ANOVA). Results were presented in Table 3, 4, 5, 6 respectively. Therefore, it was concluded that the null hypothesis should be retained in these variates.

Table 3

Summary of vocational trainers' professional satisfaction related to VTC Administration

Source	DF	SS	MS	F Value	Probability
Model	17	6.987	0.411	1.36	0.1826
Error	74	22.384	0.302		
corrected total	91	29.371			

R-Square = 0.2379 C.V. = 16.2387
 Root MSE = 0.5500 Means = 3.3869

Table 4

Summary of vocational trainers' professional satisfaction related to VTC Legislation

Source	DF	SS	MS	F Value	Probability
Model	17	9.906	0.583	1.07	0.3968
Error	74	40.238	0.544		
corrected total	91	50.144			
R-Square = 0.1976		C.V. = 22.8291			
Root MSE = 0.7374		Means = 3.2301			

Table 5

Summary of vocational trainers' professional satisfaction related to VTC Personnel

Source	DF	SS	MS	F Value	Probability
Model	17	9.452	0.556	1.29	0.2219
Error	74	31.850	0.430		
corrected total	91	41.302			
R-Square = 0.2288		C.V. = 23.7779			
Root MSE = 0.6561		Means = 2.7591			

Table 6

Summary of vocational trainers' professional satisfaction related to VTC Curriculum and Instructions

Source	DF	SS	MS	F Value	Probability
Model	17	5.527	0.325	1.07	0.4006
Error	74	22.534	0.305		
corrected total	91	28.061			
R-Square = 0.1970		C.V. = 16.4185			
Root MSE = 0.5518		Means = 3.3610			

H3 : When analyzed using regression analysis, there will be a less than a .05 level of significance in the relationship between the professional satisfaction scores of vocational trainers regarding:

1. Administration
2. Legislation
3. Personnel
4. Curriculum and instruction
5. Vocational training institutions as a whole

When analyzed using regression analysis, 9 variates were employed as follows:

1. In-service experience
2. Age
3. Teaching hours per week
4. Actual teaching hours per week
5. Teaching hours per month
6. Actual teaching hours per month
7. Education
8. Factory experience
9. Teacher training

With these 9 variates, the STEPWISE regression from SAS was used. This technique is a modification of the forward selection technique. After a variable is added, STEPWISE looks at all the variables already included in the model. However, any variable not producing a partial F-statistic significant at the .15 significance level for being retained is then deleted from the model. Only after this check is made and any required deletions accomplished can another variable be added to the model. The process terminates when no variable meets the conditions for inclusion in the model or when the variable to be added to the model is one just deleted it.

Table 7 displays the summary of these procedures. As a result, two variates were selected from the 9 variates as predictors in "administration"; two variates were selected in "legislation"; three variates were selected in "personnel"; three variates were selected in "curriculum and instruction"; and two variates were selected in "VTC as a whole" respectively.

Table 7

Summary of SAS Stepwise

Step	Variates	Partial R**2	Model R**2	C(p)	F	Prob>F
Administration						
1	Actual Teaching Hrs/Wk	.0224	.0224	1.0987	6.4523	0.0116
2	In-service Experience	.0142	.0367	-0.9749	4.1323	0.0430
Legislation						
1	Actual Teaching Hrs/Wk	.0481	.0481	0.5851	14.2001	0.0002
2	Education	.0147	.0628	-1.7385	4.3980	0.0369
Personnel						
1	Actual teaching Hrs/Wk	.1180	.1180	7.6220	37.5885	0.0001
2	Age	.0317	.1497	-0.6739	10.4328	0.0014
3	teacher training	.0082	.1579	-1.3447	2.7230	0.1000
Curriculum and Instruction						
1	Actual teaching Hrs/Wk	.0583	.0583	6.8908	17.3863	0.0001
2	Age	.0259	.0842	1.0193	7.9277	0.0052
3	Teacher training	.0076	.0918	0.7178	2.3289	0.1281
VTC as a Whole						
1	Actual teaching Hrs/Wk	.0912	.0912	4.3246	28.2037	0.0001
2	Age	.0170	.1082	1.0360	5.3260	0.0217

H4 : There will be no difference in questionnaire results between assistant vocational trainer and associate vocational trainers regarding:

1. Administration
2. Legislation
3. Personnel
4. Curriculum and instruction
5. VTC institutions as a whole

When analyzed between associate and assistant vocational trainer, TTEST procedure from SAS was used. "Legislation", "curriculum and instruction", and "VTC institutions as a whole", these were the items with .05 level of significance and were presented in Tables 8, 9, and 10 respectively.

Table 8 denoted that associate vocational trainers were significantly higher in "legislation" score than assistant vocational trainers. Table 9 implied associate vocational trainers were significantly higher in "curriculum and instruction" score than assistant vocational trainers. These results also indicated that associate vocational trainers were much happier than assistant vocational trainers in overall professional satisfaction.

Table 8

TTEST Summary of vocational trainers' professional satisfaction related to Legislation

Title	N	Means	T Value
Associate VT	59	3.357	1.99
Assistant VT	33	3.003	

Table 9

TTEST Summary of vocational trainers' professional satisfaction related to Curriculum and Instruction

Title	N	Means	T Value
Associate VT	59	3.450	1.99
Assistant VT	33	3.202	

Table 10

TTEST Summary of vocational trainers' professional satisfaction related to VTC as a Whole

Title	N	Means	T Value
Associate VT	59	3.277	1.99
Assistant VT	33	3.019	

Procedures

The Employment and Vocational Training Administration, National Labor Commission, Executive Yuen (1988) listed sixteen vocational training centers (VTCs) in Taiwan, ROC. Among these 16 vocational training centers, this research identified 15 vocational training centers as the target centers. Vocational trainers of these fifteen VTCs were considered as the target population.

The questionnaire used in this study included seven parts. Part A was designed to obtain basic background information; Part B presented questions about administration; Part C presented questions about legislation; Part D presented questions about personnel; Part E presented questions about curriculum and instruction; Part F presented questions about major factors affect student recruitment; Part G presented questions about the most urgent jobs vocational training centers need to do first.

In order to ensure the safety and privacy of the human subjects, all research procedures in this study were reviewed and approved by each director of VTC.

A pilot study was conducted to evaluate and validate the research instrument. Thirty-nine volunteer vocational trainers at thirteen different VTCs participated in this pilot study during September of 1987. The result of the pilot study indicated that the adapted instrument was reliable, with coefficient alpha index of reliability equal to .952.

A mailed questionnaire surveyed 15 vocational training centers in Taiwan. The questionnaire packets were mailed to directors of these 15 VTCs for them to distribute questionnaires to vocational trainers. A return rate of 420 out of 649 was achieved, and final usable observations totalled 64.71%.

In order to get different types of information, various statistical techniques were employed in this study. These techniques included: T-test, means, standard deviation, correlation coefficient, frequency distribution, one-way analysis of variance, multiple regression, multiple correlation, and general linear model of Statistical Analysis System (SAS, 1986).

Findings

The findings drawn from this study are presented below, divided into descriptive and inferential statistics.

Descriptive Statistics

A. Background Information

1. Vocational trainer, and associate vocational trainers were 209 persons; assistant vocational trainers were 195 persons; 16 persons didn't answer the question.
2. The average present position experience was 6.80 years for all the vocational trainers.
3. The average age for these vocational trainers was around 36.11 years old.
4. The average teaching load for the vocational trainers was 24.53 credit hours per week.
5. The actual average teaching load for the vocational trainers was 30.87 credit hours per week; it varied from center to center.
6. The average teaching load for the vocational trainers was 94.95 credit hours per month.
7. The actual average teaching load for the vocational trainer was 122.85 credits hours per month.
8. The average factory working experience 4.92 years for all of vocational trainers.
9. The average teacher training .58 year for all of vocational trainers; among 420 vocational trainers; 225 persons never have any teacher training.
10. This research involved in 48 different trade areas.
11. Among these 420 vocational trainers, 272 of them proceed their instruction under the contract of packet teaching.
12. The highest educational degree of vocational trainer: 70.4% associate degree; 15.2% baccalaureate.
13. 154 vocational trainers their program have cooperative plan; and 206 vocational trainers don't have any cooperative program.
14. 197 vocational trainers must recruit students; while 180 have no obligation to recruit students.
15. 228 persons must do instruction as well as guidance; while 141 persons only have to pay their attention to instruction.
16. The most important jobs which VTCs need to work on put in sequential order are listed as:
 - a. to give pay raise
 - b. to provide summer and winter break
 - c. to centralize VTC institutions
 - d. to ease off work load
 - e. to improve vocational trainer recruit laws
 - f. to upgrade personnel management
 - g. to increase chances for in service training.

17. The reasons which leads to insufficient recruitment of trainees list in order are:
- a. trade certificate becomes useless
 - b. trainee tends to love easy jobs
 - c. trainee prefers academic institutions
 - d. most people don't even know VTC institutions
 - e. most people have poor vocational morality
 - f. trainee can't accept toil drudgery work.

Inferential Statistics

I. Administration

One way analysis of variance (ANOVA) indicates that "in-service length", "age", and "education" lead to significant difference in satisfaction of vocational training administration. The upper 27% of vocational trainers are significantly higher than those lower 27% in the above three categories. In other words, vocational trainers who served with 9.55 or longer in-service years are more satisfied with VTC administration than those vocational trainers with 2.59 or less years. Vocational trainers with 39 years or more of ages are significantly higher than trainers less than 31 years of age. "Education" has been categorized as: graduate program, university, junior college, senior high, etc. Statistical analysis refers to that vocational trainers with graduate degree are significantly dissatisfied with VTC administration than other vocational trainers.

II. Legislation

ANOVA provides information that vocational trainers with 39 years or more of ages are significantly higher than those trainers with 31 or less ages in their satisfaction of VTC legislation. Associate trainers are significantly satisfied with VTC legislation than those assistant trainers.

III. Personnel

Statistics indicates "in-service length", "age", "factory experience" leads to significant difference among vocational trainers. Vocational trainers with 9.55 or more in-service years are significantly higher in personnel score than those trainers with 2.59 or less years. The vocational trainers with 39 or above ages has significant higher score in personnel category than their young colleague with 31 or less ages. Vocational trainers with 6 or above years of factory experience is significantly higher in personnel score than trainers with 1.5 years of factory experience.

IV. Curriculum and Instruction

Vocational trainers have significant difference in three categories: "in-service length", "age", "title". Vocational trainers with 9.55 or more in-service years has significantly higher score in curriculum and instruction than those trainers with 2.59 or less years of in-service experience. The vocational trainers with 39 or above ages has significantly higher score in curriculum and instruction category than vocational trainers with 31 or less ages. Associate vocational trainers are significantly higher in curriculum and instruction score than assistant vocational trainers.

V. Vocational training institutions as a whole

To evaluate vocational training institutions as a whole, this research tested sums of overall items which includes items in the following categories: Administration, Legislation, Personnel, Curriculum and Instruction. Stastical analysis indicate "in-service length", "age", and "title" these three variables affect vocational trainers overall professional satisfaction.

Conclusions and Observations

The following are conclusions and observations drawn from this study:

I. Background Information

1. Most of vocational trainers (more than half) their in-service experience less than six years.
2. There are so many young vocational trainers, most in very good physical conditions, proceed in long time packet teaching.
3. In a packet teaching, vocational trainers' salary based on a class not the quantity or quality of teaching.
4. More than half of vocational trainers must take response for student recruitment and placement.
5. With very heavy teaching load and other tedious chores, vocational trainers show unhappy about VTCs.
6. Vocational trainers need to enhance instructional technology and instructional methods.

II. Administration

1. Vocational trainers score negative to VTCs administration.
2. Vocational trainers blame VTC administrations by reason of over teaching burden.
3. Vocational trainers believe that having a trade certificate is very important to enterprise.

III. Legislation

1. Vocational trainers basically are happy about legislation, the only item with negative value is "vocational trainers recruitment laws."
2. Many vocational trainers claim that some laws or legislation are out of reality.
3. Vocational trainers usually are not very clear about their obligations and rights.

IV. Personnel

1. All items in "personnel" showed negative attitude.
2. Vocational trainers were depressed by many reasons such as: lack of in-service training, no chance of promotion, low pensions and payment, etc. They stand neutral when question items involved not directly (or sharply) toward their own privileges.
3. Vocational trainers care about their chances of promotion, reasonable pay, and working environment.

V. Curriculum and Instruction

1. Vocational trainers basically were very proud and confident about what they have done so far.
2. Most vocational trainers believed that they had done a great job in vocational training.
3. Nearly all vocational trainers were confident to they themselves and believed that they could perform well in curriculum and instruction development.

VI. Vocational Training Institutions as a Whole

1. Vocational trainers were satisfied with vocational training institutions as a whole, not very strong but positive.
2. The internal problems inside VTCs decayed the central tendency attitudes of vocational trainers.
3. Among many urgent needs that vocational trainers needed most is: decreasing work load.
4. In above four categories: administration, legislation, personnel, curriculum and instruction; vocational trainers cared about "personnel" most.

Recommendation and Suggestions

I. Background Information

Vocational training institutions must improve as following research findings instructed:

1. Enhance vocational trainers' technical skills, trainers they also needed more teacher training to improve instructional skills.
2. Vocational trainers had been divided into three categories: "vocational trainer", "associate trainer", "assistant trainer"; less than 3 out of 786 were "vocational trainers"; "associate trainers" and "assistant trainers" each kept the half of the left. It seems that the title of "vocational trainer" is an unreachable or impossible dream to most of "trainers". These abnormal distribution must be improved.
3. For packet teaching, trainers with unlimited teaching classes must be adjusted to a reasonable hours.
4. VTC institutions must setting up a reasonable teaching load according to different trades areas.

5. Vocational trainers of VTCs with cooperative programs were around 42.8% which also implied a low usage rate of all facilities.
6. Vocational trainers suggested that recruitment must be processed by certain administrative division not by trainers
7. VTC institutions must announce to the public civilians as possible as they can. For instance, only 14.8% of people from business and industries have idea related to Kaohsiung VTC.
8. As the society went on prosperous people became more physically oriented which leads to the changes of vocational guidance.

II. Administration

1. VTC institution administrative system must be improved as soon as possible. So far vocational trainers took the whole system as a red tape. Just because it can not adjust itself to make all vocational trainers comfortable.
2. To upgrade the concept of employing a person -- people in Taiwan still took employment as a merchant they buy it but didn't want to invest to promote or upgrade that person.

III. Legislation

1. VTC institutions must improve vocational trainers recruit laws.

IV. Curriculum and Instruction

1. VTC institutions must provide more in-service training for vocational trainers.
2. VTC institutions must increase chances for advancement.
3. VTC institutions must encourage vocational trainers for better performance.
4. VTC institutions must separate vocational trainers and administrative person into two different personnel system.

V. Vocational Training as a whole

1. VTC institutions while planned about training must keep pace with the manpower forecast.
2. For VTC institutions, future trade planning must be a farsighted plan.
3. VTC administrators must understand vocational training in depth.
4. To help vocational trainers in curriculum and instruction there is a need to develop vocational training instructional model.

(ENGLISH)

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