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FACTORS AFFECTING THE QUALITY OF PRACTICAL TRAINING IN VOCATIONAL AND TECHNICAL AGRICULTURAL COLLEGE IN AHWAZ CITY, IRAN

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ABSTRACT

The purpose of this research is identifying factors affecting the quality of practical training in vocational and technical agricultural college in Ahwaz city, Iran. This is an applied study and the research method was descriptive correlative. Agricultural students in vocational and technical agricultural college in Ahwaz considered as statistical population. The sample size was 208 people based on Krejcie & Morgan table. After designing and validating the questionnaire, the questionnaire was pre-tested among 30 people and Cronbach alpha 0.83 was determined. The main tool was a questionnaire. In this study, after the collection and classification of data, according to the type of research in two stages using descriptive statistics and inferential statistics were taken. All data processing and statistical analysis was performed using the software SPSS 19. For analysis data, correlative coefficients and factor analysis were used. The items affecting quality of practical training in vocational and technical agricultural college was assessment with a Likert scale. Based on the results, most important items include: 1- Fitness learning outcomes with the educational goals, 2- Clear goals of practical courses, 3 -Sufficient proficiency trainers, the theoretical and applied sciences, 4- Reducing costs of practical training. Based on the results of factor analysis the factors were categorized into five main components, which have been named motivational and social factor, facilities, equipment and manpower factor, educational competence, goal setting and participatory factor and economical support factor. The obtained results from the factor analysis revealed that the five mentioned factors explained 72.594% of the variation of affecting factors on quality of practical training.

Keywords: *Quality of Practical Training, Vocational and Technical Agricultural College, Factor Analysis*

INTRODUCTION

Many scholars have already examined the role of agriculture on development. Some of them argue that agriculture plays a vital role for the economic growth. Recent data shows that GDP sharing of agriculture sector is lower than other sectors while agriculture consumes a bigger portion of human resources and fund (Alam, 2008). Currently the earning of GDP is significantly lower compared to the vast majority of populations are employed at the agriculture sector. There are many reasons for the low level of contribution of agriculture sector. These are mainly related to non-skilled workforce, use of low level and time-consumed technology and old fashioned cultivation that deserve a revolutionary change (Bryceson, 2000; Barrett *et al.*, 2003).

Bruening and Frick (2004) found that, companies of today want graduates with cross-cultural experiences; agricultural farms being inclusive. Williams *et al.*, (2002) identified the importance of experimental learning, as such opportunities could introduce students to experiments that could help shape and develop knowledge and skills. Acker (1999) said that, students' education should include development of broad thinking skills to initiate problem-solving skills; and further asserted that, students need to examine agriculture from a systems perspective, including social, biological and physical systems. Faculties of agriculture and agricultural colleges and universities were first formed in the belief that farm production could be increased as a result of the systematic application of current technology and agricultural research findings (Jamaluddin and Alias, 1997). Alam *et al.*, (2009) revealed that problems

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with agriculture higher education are manifolds. The universities and institutions working at area of agriculture higher education lack research environment. This develops an overall weaker agriculture education and training system. Development of agriculture always requires local research as the development of agriculture depends on many local factors (that is, soil, weather and climate, water, construction of land, behavior of rivers, science and education, local technology canals, history, indigenous skills, genetic food habit and many other issues), subsequently research in agriculture should be updated and modern. It is also important to rethink to introduce some trade based agriculture courses at the affiliates of the national university since many students and teachers of these affiliated institutions are part-time farmers. Students of these affiliates will remain be farmer even after their graduation as part-timers as they try to search employment adjacent to their villages.

The purpose of this research is identifying factors affecting the quality of practical training in vocational and technical agricultural college in Ahwaz city, Iran.

MATERIALS AND METHODS

This is an applied study and the research method was descriptive correlative. Agricultural students in vocational and technical agricultural college in Ahwaz considered as statistical population. The sample size was 208 people based on Krejcie & Morgan table. After designing and validating the questionnaire, the questionnaire was pre-tested among 30 people and Cronbach alpha 0.83 was determined. The main tool was a questionnaire. In this study, after the collection and classification of data, according to the type of research in two stages using descriptive statistics and inferential statistics were taken. All data processing and statistical analysis was performed using the software SPSS 19. For analysis data, correlative coefficients and factor analysis were used.

RESULTS AND DISCUSSION

Table 1: Demographic Characteristics of Agricultural Students

Age	<i>f</i>	%	
19-22	106	51	Mean=22.75
23-26	73	35.1	SD=3.28
27-30	28	13.5	Min=19
31-34	1	0.5	Max=34
Total	208	100	
Debt (Million rials)			
0	121	58.2	Mean=0.9
0.1-1	18	8.7	SD=1.21
1.1-2	26	12.5	Min=0
2.1-3	38	18.3	Max=4
3.1-4	5	2.4	
Total	208	100	
Income (Million Rials in Month)			
0	23	11.1	Mean=2.15
0.1-1	33	15.9	Min=0
1.1-2	69	33.2	Max=5
2.1-3	46	22.1	SD=1.33
3.1-4	20	9.6	
4.1-5	17	8.2	
Total	208	100	

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Demographic Profile

Table 1 shows the demographic profile and descriptive statistics. The results of descriptive statistics indicated that the majority of students were 19-22 years old (51%) and had income between 1-2 million rials in month (33.2%). Also the majority of them had debt between 2-3 million rials (18.3%).

Items Affecting Quality of Practical Training in Vocational and Technical Agricultural College

The items affecting quality of practical training in vocational and technical agricultural college was assessment with a likert scale (1=very low, 2=low, 3=moderate, 4=high, 5= very high). Based on the table 2, most important items include:1- Fitness learning outcomes with the educational goals, 2- Clear goals of practical courses, 3 -Sufficient proficiency trainers, the theoretical and applied sciences, 4- Reducing costs of practical training, 5- Budgeting training for agricultural applications, 6-Holding educational classes on the farm, 7-Suitable interaction between agriculture university and executive agencies, 8-Using educational software compatible with the culture, 9-Changing attitudes to education trainers from traditional to modern and more efficient and 10-The ability to motivate learners to learn.

Table 2: Frequency of Agricultural Students Regarding Attitude about Items of Affecting on Quality of Practical Training (n=208)

Items of Affecting on Quality of Practical Training	1		2		3		4		5		Mea n	sd	CV
	f	%	f	%	f	%	f	%	f	%			
Fitness learning outcomes with the educational goals	1	5	4	9	9	3	8	56.7	76	36.5	4.26	7	8
Clear goals of practical courses	1	5	12	8	8	7	96	46.2	91	43.8	4.31	2	5
Sufficient proficiency trainers, the theoretical and applied sciences	0	0	7	4	3	2	4	54.8	74	35.6	4.22	0	8
Reducing costs of practical training	4	9	7	4	7	4	4	50	86	41.3	4.25	2	6
Budgeting training for agricultural applications	1	5	7	4	0	.4	94	45.2	76	36.5	4.13	9	8
Holding educational classes on the farm	1	5	8	8	3	.9	0	48.1	66	35.7	4.06	9	1
Suitable interaction between agriculture university and executive agencies	5	4	8	8	5	4	99	47.6	91	43.8	4.26	4	5
Using educational software compatible with the culture	2	1	11	3	4	.5	9	52.4	62	29.8	4.04	4	8
Changing attitudes to education trainers from traditional to modern and more efficient	1	5	13	2	2	.6	82	39.4	90	43.3	4.18	4	3
The ability to motivate learners to learn	4	9	10	8	2	.6	7	51.4	65	31.2	4.05	5	8
Increases the budget of each year for the visit of students from executive agencies	4	9	10	8	2	.6	95	45.7	77	37	4.11	2	1
Specify the duties of trainers and students	4	9	11	3	8	7	84	40.4	91	43.8	4.18	6	3
Efficient and effective participation of students in	5	4	12	8	0	6	80	38.5	91	43.8	4.15	0	6

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practical training														
Assignment of applied training to the elite students under the supervision of the trainers	1	0.5	7.16	3.7	18.6	.3	71	34.1	82	82	39.4	4.04	4	0.96
Coordination between learning theory and their applications	1	0.5	11.23	1.1	7.6	7	84	40.4	84	40.4	4.09	1	9	0.98
Explaining educational goals before they begin by learning practical training	5	2.4	7.16	1.7	6.4	7	87	41.8	86	41.3	4.12	7	1	0.99
Clear goals of practical courses	1	0.5	5.12	8.7	8.7	.8	74	35.6	34	16.3	3.67	9	5	0.89
Suitable interaction between students and trainers	4	1.9	8.17	2.2	11.4	.5	83	39.9	80	38.5	4.04	1	7	0.24
Credit trainers to benefit from high-quality in-service training	1	0.5	1.25	1.12	7.5	2	93	44.7	74	35.6	4.02	7	8	0.97
Adequate software and hardware for the agricultural sector	1	0.5	11.23	3.1	14.9		69	33.2	84	40.4	4.01	1.02	4	0.25
Suitable proportion of students to teachers	11	5.3	4.10	1.8	6.4	7	92	44.2	81	38.9	4.06	1.06	1	0.26
The use of modern methods and techniques of practical training	8	3.8	8.17	1.2	7.6	7	77	37	90	43.3	4.07	1.08	5	0.26
Institutionalized culture of education among educators	8	3.8	7.16	2.7	11.3	.1	85	40.9	76	36.5	3.98	1.06	6	0.26
Appropriate educational atmosphere with a workshop and laboratory equipment	4	1.9	11.24	3.5	16.8		68	32.7	77	37	3.91	1.08	6	0.27
The use of new and updated books for teaching by educators	16	7.3	1.4	2.7	13		96	46.2	66	31.7	3.92	1.09	8	0.27
Having Adequate students interested in agriculture	8	3.8	10.21	2.1	12.6	.5	81	38.9	72	34.6	3.9	1.1	2	0.28
Financial support for students to do practical training task	11	5.3	8.18	2.7	11.4	.5	90	43.3	65	31.2	3.86	1.11	7	0.28
Certified educators in teaching and communication	11	5.3	7.13	3.8	14.1	.9	83	39.9	65	31.2	3.83	1.12	2	0.29
Development of technical equipment for practical training	18	8.7	1.4	2.9	13		86	41.3	73	35.1	3.92	1.15	3	0.29
Time enough for practical training by educators	19	9.1	11.23	2.1	11.4	.5	79	38	63	30.3	3.69	1.26	1	0.34
Having the necessary motivation and morale of educators in practical education activities	8	3.8	23.48	3.1	14.9		37	17.8	84	40.4	3.67	1.31	5	0.36

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Factor Analysis of Items Affecting Quality of Practical Training in Vocational and Technical Agricultural College

To categorize factors affecting quality of practical training in vocational and technical agricultural college, and to determine the variance explained by each factor, an exploratory factor analysis approach was followed. Data revealed that internal coherence of the data was appropriate (KMO =0.864), while and the Bartlett's statistic was significant at the 0.01 level (674.5). The four commonly used decision rules were applied to identify the factors (Hair et al, 2005): 1) minimum eigenvalue of 1; 2) minimum factor loading of 0.5 for each indicator item; 3) simplicity of factor structure; and 4) exclusion of single item factors. According to Kaiser Criteria, there were seven factors that their extracted eigenvalues were greater than one. Later, the items were categorized into five factors by using VARIMAX Rotation Method (Table 3).

Table 3: Percent of explained variance by factors underling quality of practical training

Factors	Eigenvalues	Percent	Cum percent
Factor 1	6.511	21.702	21.702
Factor 2	4.975	16.584	38.286
Factor 3	4.766	15.884	54.173
Factor 4	3.416	11.395	65.586
Factor 5	2.108	7.026	72.594

Table 4: Rotated component matrix for the affecting factors on quality of practical training.

Factors	Components	Factor Loadings for Components
Motivational and social factor	Having the necessary motivation and morale of educators in practical education activities	0.979
	Changing attitudes to education trainers from traditional to modern and more efficient	0.935
	The ability to motivate learners to learn	0.933
	Having Adequate students interested in agriculture	0.924
	Suitable interaction between students and trainers	0.929
Facilities, equipment and manpower factor	The use of new and updated books for teaching by educators	0.959
	Development of technical equipment for practical training	0.897
	Adequate software and hardware for the agricultural sector	0.870
	Suitable proportion of students to teachers	0.863
	Using educational software compatible with the culture	0.850
	Appropriate educational atmosphere with a workshop and laboratory equipment	0.845
Educational competence	Sufficient proficiency trainers, the theoretical and applied sciences	0.936

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	The use of modern methods and techniques of practical training	0.743
	Holding educational classes on the farm	0.708
	Specify the duties of trainers and students	0.702
	Certified educators in teaching and communication	0.675
	Institutionalized culture of education among educators	0.659
	Fitness learning outcomes with the educational goals	0.576
Goal setting and participatory factor	Time enough for practical training by educators	0.955
	Budgeting training for agricultural applications	0.895
	Efficient and effective participation of students in practical training	0.894
	Coordination between learning theory and their applications	0.877
	Clear goals of practical courses	0.865
	Efficient and effective participation of students in practical training	0.864
Economical support	Reducing costs of practical training	0.906
	Increases the budget of each year for the visit of students from executive agencies	0.855
	Credit trainers to benefit from high-quality in-service training	0.824
	Financial support for students to do practical training task	0.792

Based on the results of factor analysis the factors were categorized into five main components, which have been named motivational and social factor, facilities, equipment and manpower factor, educational competence, goal setting and participatory factor and economical support factor (Table 4). The obtained results from the factor analysis revealed that the five mentioned factors explained 72.594% of the variation of affecting factors on quality of practical training. The first group which is labeled motivational and social factor had the most eigenvalue (6.511). Also, this factor explained 21.702% of the total variances of the variables. The second group, labeled facilities, equipment and manpower factor, is comprised of six items. This factor with Eigen value 4.975 explained 16.584% of the total variances of the variables (Table 3).

Conclusion

Based on the results of factor analysis the factors were categorized into five main components, which have been named motivational and social factor, facilities, equipment and manpower factor, educational competence factor, goal setting and participatory factor and economical support factor. The obtained results from the factor analysis revealed that the five mentioned factors explained 72.594% of the variation of affecting factors on quality of practical training. Thus, the policy makers must be considering the items of these factors.

These items include:

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Motivational and social factor:

Having the necessary motivation and morale of educators in practical education activities.

Changing attitudes to education trainers from traditional to modern and more efficient.

The ability to motivate learners to learn.

Having Adequate students interested in agriculture.

Suitable interaction between students and trainers.

Facilities, equipment and manpower factor

The use of new and updated books for teaching by educators.

Development of technical equipment for practical training.

Adequate software and hardware for the agricultural sector.

Suitable proportion of students to teachers.

Using educational software compatible with the culture.

Appropriate educational atmosphere with a workshop and laboratory equipment.

Educational competence:

Sufficient proficiency trainers, the theoretical and applied sciences.

The use of modern methods and techniques of practical training.

Holding educational classes on the farm.

Specify the duties of trainers and students.

Certified educators in teaching and communication.

Institutionalized culture of education among educators.

Fitness learning outcomes with the educational goals.

Goal setting and participatory factor:

Time enough for practical training by educators.

Budgeting training for agricultural applications.

Efficient and effective participation of students in practical training.

Coordination between learning theory and their applications.

Clear goals of practical courses.

Efficient and effective participation of students in practical training.

Economical support:

Reducing costs of practical training.

Increases the budget of each year for the visit of students from executive agencies.

Credit trainers to benefit from high-quality in-service training.

Financial support for students to do practical training task.

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