

The Effectiveness of a Training Programme for Developing the Vocational Literacy of Secondary Vocational Education Teachers in Jordan

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Abstract

This study aimed at investigating the effectiveness of a training programme for developing the vocational literacy of secondary vocational education teachers in Jordan. The population of the study consisted of all vocational education teachers in the secondary stage for governmental schools that belong to education directorates in Irbid governorate, The total number was (252) teachers. A random sample consisted of (39.5%) from the study population. To answer the questions of the study, the researcher prepared an achievement test composed of (64) multiple choice questions, distributed on (7) fields of vocational literacy. The validity of the study tools was verified and approved by a specialized committee in education and vocational education fields, the tools were also tested, and the reliability coefficient for the test was (0.79). For answering the study questions data were collected and analyzed by employing the (SPSS) system, means, standard deviation and T-test were widely employed for the purpose of this study. results of the study revolved that the study reached the following: That the majority of teachers scored at the middle level of the Vocational literacy as measured by the prepared test there were significant statistical differences in the mean degrees of Vocational Literacy for Secondary Vocational Education Teachers between pre and post experiment test, due to the effect of the suggested Training programme.(Number of word).

Key words: The effectiveness of a training programme , Vocational Literacy, Vocational Education Teachers.

The Problem of the Study and its Significance

Introduction

Both ancient civilizations and heavenly religions had encouraged continual education in order to keep and maintain their path in life, and to ensure that their teachings would be spread among people in the following generations. Schools, in these civilizations, were viewed as institutions that aimed at communicating the cultural and material heritage. These institutions didn't do the roles that families did as natural part of the tradition especially in respect of transferring the heritage from grandparents to grandchildren which includes values, customs, and traditions. Hence man is the tool of development and its purpose; the appropriate social and economic growth of communities highly depends on the effectiveness of the systems of training the workforce to be able to meet the needs of the work market. This is summed up in the saying: 'Vocational education is an essential factor in maintaining the complex structure of the contemporary culture of economic and social development'. In spite of the positive changes in relevant attitudes and practices, the look of inferiority towards vocational education is still commonplace in varying degrees in many countries especially developing ones. It is doubtless that 'this phenomenon deserves serious examination that calls for fundamental changes in the structure of the educational system and in the principles and assumptions that underlie educational theories that are related to improving human power'. (Al-Masry, 1993, p. 15)

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Vocational literacy is an important parameter of the educational system that is concerned with supplying students with different knowledge branches, and theoretical and practical experiences that focuses on technology and its applications on various professions with the purpose of highlighting the role of work especially handicraft as an economic, social, moral, and cultural value on the basis on curricula that have a special educational philosophy that includes intellectual, professional, and emotional goals that creates holistic human personality. That serves into creating efficient individuals and supplying the work market with highly trained work force that is capable of thinking, planning, implementing, producing, problem-solving, and participating in developmental plans that aim at improving economic and social life and enhancing it. (Kesis and El-Ahmed, 2005)

This leads us to closely examine an important and vital issue in the same framework which is the vocational literacy of the teacher. The broad meaning of literacy is the human product that is developing, dynamic, and continually changing; it relies on the philosophy of vocational and technical education that seeks to turn it to be part of the educational system. The concept continuing education is built on the fact that life as a whole is a big long and continuous school in which all the knowledge and experiences of individuals intertwined in different situations. That means that the school or institute education is the base that makes individuals able to continue education side by side with the educations that is acquired at house or at workplace, through media or mass communication so that they can respond to the fast changes that accompany the development of professions and their techniques and the continual progress of the society. (Al-Hag Mohamed, 1999, Ali, 1994)

The concept of vocational literacy as viewed by John Dewey, 1916 covers the cultural dimension includes knowledge and experiences that are created by human activity and their interaction with the environment; that is to develop the intellectual, emotional, and professional aspects of them to be good individuals for themselves as well as the community. As for El-Masry, 1993- he considered vocational literacy as the scientific basis and intellectual depth that all technical and vocational sciences are established on so that they can meet the needs of essential professions.

The increasing results of scientific research and the fast-growing scientific knowledge in this era made enlightenment and scientific literacy imperative for every individual. It is a modern attitude that imposes itself on the methodologies of sciences and vocational education. That demonstrates that enlightenment and scientific literacy became an attitude and an essential goal in the development of individuals so that they can participate effectively with their knowledge, skills, interests in development their environment and community and solving their problems. (Abd El-Salam, 2001)

The parameters of the growth of teachers' professional development and qualifying them to practice their jobs generally include the following components:

1. **General education:** this parameter includes assorted curricula from social sciences, humanities, and natural sciences. It aims at improving the educational level of the teacher, broadening his horizons, adding an intellectual depth to his training as well as his professional speciality so that the needs of the scholar is integrated as a teacher, a citizen, and a human.
2. **Specialized technical training:** this parameter usually includes three elements:
 - a. The element of fundamental sciences: that is the scientific basis and intellectual depth that technical and vocational sciences that are relevant to the major of the study are established on.
 - b. The element of fundamental and specialized technical sciences according to the field of speciality.
 - c. The element of practical training and applied skills that are relevant to the field of speciality. (El-Masry, 1990)

It can be inferred from the mentioned above that the work of a technical teacher requires total awareness of the basics of vocational education. Therefore, it is paramount to have comprehensive understanding of the principles of professions and their variety, and the demands of work and its regulations, and all professional sciences through training programs that cover the parameters of education and work- so that the teacher is well-rounded and aware of the sciences of this era and the skills of computers and modern technology with its applications. As far as the researcher knows, there is an evident lack of studies that discuss the topics of vocational literacy. There is also a scarcity of studies that look into the method of creating training programs in the field of vocational education. So the researcher considered it appropriate to conduct this study to explore the effectiveness of a training program to improve the vocational literacy of the teachers of technical education.

Questions of the study

The present study has sought to answer the following questions in order to fulfil the objectives of the study:

1. What is the level of the teachers of secondary vocational education at vocational literacy in Jordan?
2. What are the components of the suggested training program to improve the vocational literacy of secondary vocational education teachers?
3. What is the effectiveness of the suggested training program to improve the vocational literacy of secondary vocational education teachers?

Importance of the study

The importance of this study is accentuated through the following:

- 1- This study is a theoretical addition to educational literature because it discusses some vocational literacy topics that are relevant to life activities and work.
- 2- This study offers a module of the method of creating training programs for vocational education teachers in the topics of vocational literacy.
- 3- It opens up a door for other researches and studies to study the method of creating training programs to improve vocational literacy of teachers in other specializations.

The hypothesis of the study: there aren't any major differences at the level of $\alpha=0.05$ in the average marks of vocational literacy of secondary vocational education teachers between the pre and post experimental tests because of the effectiveness of the suggested training program.

Procedural definitions:

Vocational literacy: it is the sum of experiences and knowledge that the vocational education teacher stores in various vocational topics such as educational systems and legalizations, professional values and ethics, the domain of occupational health and safety, work market and development, and the professional training of teachers. The degree of possessing it is evaluated through the mark that the research subject obtains on the evaluation tool that was developed by the researcher.

The training program: it is a group of planned activities and events in the topics of vocational education that are designed for secondary vocational education teachers. It aims at improving their level of vocational education in a way that suits the modern attitudes of the new educational system.

Vocational education teachers: they are teachers who are specialized in a subject of vocational education sciences and have qualifications that make them eligible to teach the fields of agriculture, industry, trade, health and others in governmental vocational schools.

The Theoretical Framework of the Study: The theoretical framework of the study includes two parameters which are theoretical literature and previous studies that are relevant to the topic of the study.

The first parameter: Theoretical literature which covers the concept, elements, and the topics of vocational literacy.

Vocational literacy in Pedagogical Ideology

Education in primitive societies was simple; it suited the demands of these societies. There weren't any training programs on needed professions in order to serve the people of the community. Professions were taught in a traditional, simplistic, and emotional way. Therefore, family is considered the first institute of vocational education in history and vocational education, from a historical perspective, is considered one of the oldest methods of education in the world. So it can be inferred that vocational education in these communities happened unintentionally and its improvement came as a response to biological, natural, security, and religious elements altogether over consecutive periods of time. (Abd-El-dayem, 1985)

Ancient philosophies differ on how they look at vocational education. The culture of Plato and the philosophy of idealism that elevated the role of the mind, values, and the intellect and considered it a quality of the elite minority who learn all the branches of knowledge and sciences, after the elite comes soldiers who were responsible for protecting the homeland, after that comes peasant farmers and manufacturers because their skills depend on physical and vocational work and serving the elite minority due to their low mental and intellectual level, consequently vocational education was separated from general education. (Okail, 2004) The applied parameters became prominent in modern educational literature as an element of the elements of the educational process.

For example, the UNISCO states that its concept of education include all the doings and effects that are directed to individuals in order to improve and sharpen their intellectual skills, knowledge, skills and manners in a way that improve their personalities to the maximum so that they can participate positively in their communities. In addition to the importance of the applied and practical parameters that is relevant in a way or another to the importance of the profession in the common system of values in the society, for it is known that this importance varies from one community to the other in the light of the cultural background of the community and the cultural identity. (Badrakhan, 2006)

John Dewey confirms that ‘experience, no matter how humble it is, is capable of generating a theory but a theory that is not based on an experience cannot be understood; and that proves the importance of vocational work in general education’. (Ayadat, 2003, p.13)

An observer of philosophical schools that look into vocational education would note that ‘there is not even one philosophical theory about education that went as far as excluding vocational education from the educational process, and that the differences in views in this respect are all about how much the vocational element is accentuated and how it is connected to general education’. (Zyabat, 2000, p.7)

If we look at vocational and technical education as a training to practice a profession; that would demand that teachers have qualifications that suit the demands of the profession they train their students to practice. Therefore, the International Labour Organization (ILO) recommended that ‘the qualifications of teachers have to include long practical experience in practicing specialized professional skills, and comprehensive knowledge of the relevant theoretical parameter, and sufficient knowledge of the work market, and procedural training that is based on theories in education, psychology, and teaching methodologies. Additionally, teachers should be fully aware of security precautions and professional safety and vocational guidance, the ability to contact and communicate with the participants of the educational process or his benefactors in work markets’. (Okail, 2004, p.5)

As a result to the consecutive improvements in the field of education through the last two decades in Jordan, a need to issue a modern educational law that goes abreast with these improvements was realized, that law would make a quantum leap and provide a legalization umbrella to deal with the cases of vocational education. This law is number 27 of year 1988 and it focuses on some of the most essential parameters of the field of vocational education which includes:

Accentuate the importance of professional vocational training in education and the necessity of balancing the needs of individuals and the community, and to assert the importance of vocational literacy and practical experiences and applied education in the educational system. (law of ministry of education number 27 of year 1988)

The Concept of Vocational Literacy:

We can find, by thorough examination to the features of the history of education, that the intellectual roots that gave rise to the separation between theoretical and vocational education were formed during the first stages of education. Then various factors and causes had started to strengthen the separation and deepen its roots as human communities developed and the stages of their civilizations continued. There is probably more than one intellectual source that established the separation of the theoretical and vocational cultures but ideas that came from different communities were combined, each of them confirmed and strengthened the existence of the other. (El-Hag Mohamed, 1999)

- a. The concept of vocational literacy, as viewed by John Dewey, which forms the cultural dimension that includes the experiences that result of the interaction of man with the surrounding environment in order to improve individuals intellectually, emotional, and professionally to become good citizens for themselves and their communities. (John Dewey, 1919)
- b. It is the human outcome that is developing, dynamic, continually changing, and is expressive of its originality and is a continuum of their traditions and customs in the various fields of life.
- c. It represents the broad scientific basis and the intellectual depth in which professional and technical sciences are based on so that they can meet the essential demands of professions. (El-Masry, 1993)

Now we can conclude that vocational literacy is the sum of experiences and knowledge that is acquired by the teacher of vocational education in various vocational topics such as educational systems and legalizations, professional values and ethics, the field of occupational health and safety, the work market, and the professional training of the teacher.

The elements of vocational literacy:

Lately, there has been an increasing interest in vocational literacy as a means of helping students to know themselves and their potentials by relating these potentials to one kind of educational. They also get to know the demands of the work market in the present and the future of different professions and motivate individuals towards productive work and spread positive work values among them. Thus the following elements have been chosen to demonstrate the aspects of this culture.

1. The professional training and preparation of teachers: the parameters of training vocational education teachers are not different, in terms of the form, than those of training teachers in general. So the content of training vocational education teachers and qualifying them to practice professions generally include the educational parameter and the specialized technical parameter.
2. Educational systems and legalizations: A study conducted by Zeyabat (2004) advised reconsidering educational legalizations and goals that are related to education and vocational training in every period of time and continually improve them to keep abreast with new developments in sciences and technology in order to be able to meet the needs of the community.
3. Professional characterization and classification: To find the exact requirements of the profession regarding the content of theoretical information and practical skills and their level. That normally requires conducting professional analysis that is built on the real situation of the profession in real fields of work so that it is possible, through this analysis, to renew the main operations and tasks of the profession at the expected level.
4. Occupational health and safety: The concept of occupational health and safety refers to the science that studies the methods of prevention and protection of the elements of production represented in the human element, the materials and equipment that are used in the production, and the environment. It also clarifies some concepts that are related to the dangers of work, work accidents, and occupational diseases.
5. The relationship between the institutes of vocational education and work market: The level and condition of the general education of the community and individuals is considered one of the important factors that leads to create a real desire to work and be creative. So it can be said that the percentage of contribution in work force and the rate of participation increases by the increase of the educational level of individuals and the community.
6. The role of vocational education in development: The educational and intellectual dimension has a role in the increase and improvement of the amount of production on one hand and the percentage of women's participation on the other hand. It also creates a good level of awareness that helps to decrease the cost of the establishment and implementations of developmental programs and projects.
7. Professional values and ethics: The common system of values of a given community creates a mutual ground between the citizens of the society that culture is built upon. This mutual ground is a reflection of the mentality of individuals in a given culture and period of time, it also directs the behaviour of individuals, their judgements, and attitudes.

The second parameter: Studies that discussed vocational literacy and training programs of secondary vocational education teachers.

Porozny, George H. and Cap, Orest (1985) conducted study titled as 'Manitoba Business and Vocational/Industrial Secondary Teachers' Responses to Updating of Their Professional/Technical Skills and Knowledge'. Findings showed 70 percent of business teachers and 92 percent of vocational/industrial teachers had completed work experience before commencing teacher education programs. Fifty-nine percent of the teachers indicated no business and industrial work experience since beginning teaching. Thus the study recommended the necessity of updating programs that have business and industrial orientation and providing all the sufficient support.

A study conducted by Kanso (1999) aimed at deciding the position of vocational education in the Lebanese educational structure and the degree of availability vocational specializations and their types. The study also contrasted the situation to global and Arab trends.

The researcher used the descriptive historical method in general education among the materials of vocational education so that the curricula of vocational education are updated and flexible with his study through looking at relevant educational documents and also previous studies and researches. Some of the most important study findings were that vocational and technical education did not receive attention in the Lebanese educational structure and that there is weakness in the structure of curricula. Based on these findings, the study recommended that the focus of vocational education has to be on the general stages of education in practical and cultural subjects.

In a study conducted by Mieke Van Houtte, 2006 and titled as 'Tracking and Teacher Satisfaction: Role of Study Culture and Trust', the findings demonstrated that teachers in technical/vocational schools tended to be less satisfied with their jobs than were teachers in general schools. The relation seemed ascribable to pupils' culture, which was far less study oriented in technical/vocational schools than in general schools. Results show that pupils' study culture affected teacher satisfaction by its influence on teacher trust and faculty trust.

Edwan and others, 2001 conducted a study that aimed at measuring the effectiveness of a training program and the educational plan nursing branch and also identifying the need of the work market of nursing education graduates. The most prominent findings of this study were that the field of vocational sciences in the educational plan were well-fitted to the needs of the work market. It achieved 8.2 degrees from 3 which is a percentage of 39 while the additional requirements were the least suitable fields to the needs of the work market for it achieved 1952 degree which is a percentage of 46.166. One of the most important recommendations of this study was teaching the subject of vocational English to technical education students, the nursing branch again because it is directed related to the needs of the work market. The study also recommended compelling public and private health institute to provide training opportunities to the student of nursing education through making official agreements with the ministry of education.

Commentary of previous studies:

It became evident, after investigating previous theoretical literature and researches that studies that discussed the topics of vocational literacy are very rare, especially in the Arab world, and it did not reach the expected level in the field of improving the teachers of secondary vocational education. For it can be noticed that all the studies done by Kanso 1999, Mike 2006, Porozny, George and Orest 1995, Edwan and others 2001, focused on the educational aspect of teachers and ignored the practical aspect. The common factor of all these studies indicates that the level of vocational literacy of students is low. Recommendations came congruous with the findings which affirm the necessity of conducting more researches and studies in the field of vocational literacy and include these topics in the programs.

Method and procedures

This section includes a description of the methodology of the study, identification of the population of the study and the sample, the steps of creating the tool of the study and confirming its validity and stability and the procedures involved in applying the study, the developed training program, and the statistical analyses there were used in data processing and the extraction of results.

The study methodology

The researcher has relied on the following research methods in his study:

The descriptive method: which depends on diagnosing the current situation to identify the level of vocational literacy of the teachers of secondary vocational education, and identifying its shortcomings - the researcher used an achievement test for that sake.

The experimental method: that depends on an experimental design of the same group using a pre and post experiment test in order to confirm the effectiveness of the suggested training program improve vocational literacy.

The population and the sample of the study

The population of the study consisted of specialized teachers of secondary vocational education at schools in the following directorates: Erbid the first, Erbid the second, Erbid the third, ArRamtha, BaniKnana, and Al-AghwarShamaliyyah for the school year 2008/2009, there were 252 teachers as demonstrated in the following chart which shows their distribution according to the variables of sex and professional specialization.

Table 1: The distribution of the study population according to the variables of sex and professional specialization

Professional specialization	Sex		Total
	Male	Female	
Industrial education	74	-	74
Hotel education	19	-	19
Agricultural education	23	13	36
Health education	47	26	73
Home economics	-	50	50
Total	163	89	252

Note: This symbol (-) means that there are not any males or females in this specialization. This study sample was taken through the stratified random sample method and with a percentage of 39.5 of the study population and is distributed through the directorates of the ministry of education as it is demonstrated in the following chart:

Table2: The distribution of the study sample according to the variables of sex and professional specialization

Professional specialization	Sex		Total
	Male	Female	
Industrial education	29	-	29
Hotel education	8	-	8
Agricultural education	9	5	14
Health education	19	10	29
Home economics	-	20	20
Total	65	35	100

The study tool:

The researcher used an achievement test to assess the vocational literacy level of the teachers of secondary vocational education to achieve the goal of the study.

The following is a comprehensive explanation to this tool:-

The researcher has developed an achievement test that consisted of 87 multiple-choice questions and distributed them across seven fields of vocational literacy. It was shown to a number of examiners of professors who are specialized in the teaching methodologies of vocational education curricula and a number of educational advisors and experienced teachers. Some necessary modifications were made so the number of items became 70 and by that change examiners confirmed the validity of the test.

The test items were also analysed to extract the difficulty and discrimination parameters of them and also in order to identify weak items and omit them; so the number of items became 64. The table of specifications of the test was created on the light of analysing the test items. The stability of the achievement test was done on an explanatory sample of 20 teachers; the reliability coefficient was calculated using Kuder–Richardson Formula 20 which is 0.79.

The variables of the study and their design

The variables of the study include:-

First: the independent variable: the training program of developing the vocational literacy of secondary education teachers.

Second: the dependent variable: the vocational literacy of the teachers of secondary vocational education in Jordan. The experimental design of the study: the design of an individual group was used in it with a pre and post experiment test of vocational literacy and it can be expressed by the following symbols G O X O.

G: the experimental group

O: the achievement test of vocational literacy which was applied on the group before and after the experiment.

The procedures of the study: the researcher has conducted the following procedures in application of the study.

1. The population of the study that consists of vocational education teachers in the northern directorates of the ministry of education was identified. After that, demographical data such as the name, educational qualification, sex and places of work were noted in order to apply the study on the individuals of the study sample.
2. The researcher has prepared the study tool which included an achievement test that consisted of 64 multiple-choice questions.
3. The validity of the achievement test was found, and the stability of it was confirmed then the difficulty and discrimination parameters of the items of the test were checked, and a table of specifications of the test was created.
4. The study tool was applied on the individuals of the study sample, then the results of the achievement test were corrected in order to analyse the data using Statistical Package for the Social Sciences (SPSS) software to find the means and standard deviations for each item of the test items. After that items were classified into three levels (low, medium, and high) according to the educational level of respondents in the research.
5. The suggested training program was created based on the items of the achievement test that identified a weakness in the knowledge of teachers.
6. The validity of the training program was confirmed through showing it to a committee of experienced and specialized examiners and applying their notes before creating the final version of the program.
7. The study group was chosen, 30 teachers of the individuals of the study sample, in the directorates of the ministry of education that run under Irbid governorate. The study group was of those who had the before experimental test and had a medium educational level. The purpose was to distribute the prepared training program on the form of training groups through the method of self-study on them and measuring its effect.
8. The after experimental test was made on individuals of the study group after one month and a half of the self-study of the training program, the test was conducted over two consecutive days on 27th and 28th of February, 2009.

Statistical treatment analysis

In order to answer the questions of the study, arithmetic means, standard deviations, and percentages were extracted, T-test was used to determine the significance of the differences between the grades of the before and after the experiment for group of the study sample on the achievement test.

The findings of the study

First question:- what is the level of vocational literacy of secondary vocational education teachers in Jordan?

To answer this question, the researcher has applied the achievement test on the individuals of the study sample which are 100 teachers, the arithmetic means of respondents is 36.14 degrees, and the standard deviation is 4.65. The arithmetic means and standard deviations of the grades that the individuals of the study sample had were extracted in each field of vocational literacy fields and the following chart demonstrates that.

Table 3: The arithmetic means and standard deviations of the grades of secondary vocational education teachers had in the fields of vocational literacy in accordance of the results of the achievement test

Field Number	The fields of vocational education	Number of items	Arithmetic mean	Standard deviation	Weight percentage	Rank
1	Professional training and preparation of the teacher	9	4.32	1.98	48	2
2	Educational systems and legalizations	8	3.83	0.87	47.87	3
3	Professional characterization and classification	10	4.30	1.09	43	6
4	Occupational health and safety	10	4.32	1.36	43.2	5
5	The relation between vocational education institutes and work market	10	3.93	1.16	39.3	7
6	The role of vocational education in development	7	3.08	1.08	44	4
7	Professional values and ethics	10	5.27	2.12	52.7	1
	Total	64	29.05	1.87	45.39	

Chart 3 shows that the weight percentages of the arithmetic means of vocational education fields range between a maximum of 52.7 in the field of ‘professional values and ethics’ and a minimum of 39.3 in the field of ‘the relation between vocational education and work market’. The weight percentage of the general arithmetic mean of vocational education is 45.39 degrees. The number of respondents was identified and distributed according to their levels of knowledge at vocational education (high, medium, and low) – as chart 5 demonstrates- using the formula that was referred to in El-Gadry, 2002 p. 88.

Table 4: The distribution of respondents according to the levels of vocational education of secondary vocational education teachers

The level of vocational education	Limits of the category	Number	%
High	66.7 and higher	12	12
Medium	Lower than 66.7 to 33.3	82	82
Low	Lower than 33.3	6	6
Total		100	100

Chart 4 demonstrates that 12% of the study respondents have high level of vocational education, and 82% have medium level of vocational education, whereas the percentage in the low level of vocational education is 6%.

Chart 5 sums up the vocational literacy levels of secondary vocational education in the fields and items of vocational education on which the discussed training program will be build. That is because the training program contains all the items that had medium and low levels of vocational education for the study respondents which are 49 items that were filtered out of 64 items of the vocational education test.

Chart 5. The distribution of the achievement test items according to the levels of vocational education of secondary vocational education teachers

Fields of vocational education The educational level		Professional training and preparation of the teacher		Educational systems and legalizations		Professional characterization and classification		Occupational health and safety		The relation between vocational education institutes and work market		The role of vocational education and development		Professional values and ethics		Total		
		Number of items	%	Number of items	%	Number of items	%	Number of items	%	Number of items	%	Number of items	%	Number of items	%	Number of items	%	
	0.67 and higher																	
High		2	22	2	25	3	30	2	20	1	10	2	14	3	20	15	23	
Medium	0.34-0.66	5	56	4	37.5	5	50	6	60	7	70	3	57	5	60	35	55	
Low	0.33 and lower	2	22	2	37.5	2	20	2	20	2	20	2	29	2	20	14	22	
Total		9	100	8	100	10	100	10	100	10	100	7	100	10	100	64		

The second question:- What are the contents of the suggested training program to develop the vocational literacy of secondary vocational education teachers?

In order to answer this question, the results of the achievement test of vocational education were analysed to identify the educational levels of secondary vocational education teachers. The Items of the test were classified into three levels (high, medium, and low). The training program was built on fields that vocational education teachers showed to have weakness at; that was based on the philosophy of self-study and the adult learning theory of Knowles and according to KEMP model, to design training programs such as the following:

1. The conceptual framework of the training program.
2. The theoretical basis of the training program.

3. Identifying the training needs of the targeted group.
4. Identifying the general objectives.
5. Formulating the specific objectives.
6. Identifying the content of the training program.
7. Choosing the appropriate training methods and means.
8. Choosing the appropriate evaluative methods for the training.

The third question:- what is the effectiveness of the suggested training program to develop the vocational literacy of secondary vocational education teachers in Jordan?

In order to answer this question, appropriate statistical analyses were employed by using T-test on related groups to identify whether there are any significant differences in the vocational education levels of the study respondents from secondary vocational education teachers after applying the suggested training program. And chart 6 refers to the results of T-test of both pre and post experimental tests.

Table 6: The results of T-test of the vocational education test parameters that include both pre and post experimental tests for secondary vocational education teachers

Parameter	The mean of the pre experimental test	The standard deviation of the pre experimental test	The mean of the after experimental test	The standard deviation of the after experimental test	The calculated T. value	The statistical significance	The average amount of improvement
Professional training and preparation of the teacher	4.32	1.89	6.12	2.34	6.23	0.00	1.8
Educational systems and legalizations	3.83	0.87	7.10	1.54	12.84	0.00	3.27
Professional characterization and classification	4.30	1.09	7.55	2.33	13.5	0.00	3.25
Occupational health and safety	4.32	1.36	5.67	1.78	9.72	0.00	1.35
The relation between vocational education institutes and work market	3.93	1.16	4.98	2.23	6.08	0.00	1.05
The role of vocational education in development	3.08	1.08	5.66	2.65	7.33	0.00	3.5.8
Professional values and ethics	5.27	2.12	7.02	3.11	3.05	0.00	1.75
The tool as a whole	29.05	5.77	44.1	4.32	14.39	0.00	15.05

Table 6 demonstrates the results the vocational education test which includes both pre and post experimental tests of the study respondents from the teachers of secondary vocational education. The results of the statistical analysis indicate that the amount of improvement at vocational education as a result to applying the training program is 23.5% of the tool as a whole. As for individual parameters, the highest amount of improvement belongs to the parameter of 'educational systems and legalizations' which is 3.27 degrees. The lowest amount of improvement was the parameter of 'The relation between vocational education institutes and work market' which is 1.05 degrees. The chart also indicates that the overall arithmetic mean of parameters in the after experimental test is 44.1 degrees and the arithmetic mean of the parameters in the after experimental test is 29.05 degrees; so the difference between both means is 15.05 degrees.

T-test was used to identify the significance of the differences between the results of both tests and the calculated T. value was 14.39. Since the value of the statistical significance is less than 0.05; the null hypothesis was rejected. The null hypothesis states that there are not statistically significant differences in the average vocational education grades of vocational education teachers between the pre and post experimental test. Therefore, the differences can be attributed to the effect of the training program and the alternative hypothesis can be accepted. In other words, there are statistically significant differences in the average grades of vocational education.

Discussing the results:

The first question:- what is the levels of vocational literacy of secondary vocational education teachers in Jordan?

A specifications chart of the achievement test was created and the parameters of reliability, validity, difficulty, and discrimination were confirmed, then the test was given to the respondents of the study. Standard deviations and arithmetic means of the responses of respondents on all the items of all domains were extracted, they were also extracted for each individual field. The number of teachers of the study respondents who got medium grades is 82 and

their percentage is 82% as demonstrated in chart 4. As for the high level of education, the number is 12 teachers of the study respondents and the percentage is 12%. The number of teachers in the low category of education is 6 teachers and the percentage is 6%. The results are attributed to a number of effects such as the extent of shortcomings in the teacher preparation and training program during the service. Another effect is that vocational education curricula don't include the concepts of vocational literacy which is confirmed by the reality of vocational schools; curricula still focuses on the quantity of information and not the quality. In addition to the poor coordination between educational institute, vocational training, and the work market in the field of exchanging educational and training experiences and the minor role of different mass media at spreading awareness among people and discussing the issues of professions and its requirements in general. Chart 5 demonstrates that the percentage of items that showed high level of vocational literacy is 23% and they are 15 items, and the percentage of items that showed medium level of vocational literacy is 55% and they are 35 items, and the percentage of items that showed low level of vocational literacy is 22% and they are 14 items.

The second question:-what are the contents of the suggested training program to develop the vocational literacy of secondary vocational education teachers?

As for the suggested training program to develop the vocational literacy of secondary vocational education teachers, it was build based on the theoretical literature and previous studies and researches. The results of statistical analysis showed that there is weakness in the level of vocational literacy of the study respondents in some fields and items; on which the contents on the training program were based. They are:

1. The conceptual framework of the training program.
2. The theoretical basis of the training program.
3. Identifying the training needs of the targeted group.
4. Identifying the general objectives.
5. Formulating the specific objectives.
6. Identifying the content of the training program.
7. Choosing the appropriate training methods and means.
8. Choosing the appropriate evaluative methods for the training.

The training program was shown to a number of specialized and experienced examiners whose comments and suggestions confirmed the validity and correctness of the training program and on the light of that the suggested training program was build.

The third question:- what is the effectiveness of the suggested training program to develop the vocational literacy of secondary vocational education teachers in Jordan?

Results in chart 6 demonstrate that the performance of the study respondents in the post experimental test is more advanced than their performance in the pre experimental test; it was confirmed that there are statistically significant differences at the level of ($\alpha = 0.05$) in the average grades of vocational literacy of the study respondents between the pre and post experimental tests which is attributed to the effect of the training program:

Results showed that there is correspondence between what has been concluded from the findings of this study and the findings of previous studies and researches such as the study of El-Edwan and others, 2001. The most prominent of El-Edwan study was that the fields of vocational sciences in the school plan were the most appropriate to the needs of the work market. It also corresponded with the study of El-Khawaleda, 2006, which demonstrated that the suggested training program to develop the environmental literacy showed significant improvement and differences in the fields of 'professional values and ethics' and the field of 'professional training and preparation of the teacher'. Results also corresponded with the study of Aarni, Jouni, 2001, which is titled as 'Dialogic Knowledge Construction as the Crucial Issue in Network-Based Learning in Vocational Education' and aims at establishing a dynamic dialogic model of learning that is based on the network and build on the needs of vocational education in the profession'.

Recommendations:

In the light of the study findings, the researcher recommends the following:

1. To benefit from the training program that was developed in preparing the vocational teachers' training which is developed by the relevant agencies from the ministry of education.
2. The necessity of benefiting from the tool that was developed by the researcher to measure the degree of vocational literacy to build training programs for vocational teachers.
3. Conducting similar studies that discuss the reality of vocational literacy and the method of developing this culture of teachers of different specializations.

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