

Effects of Prevocational Education on the Vocational Knowledge and Attitudes of Students-Teachers in Jordan

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Abstract: This study aimed at investigating the effect of studying Pre-Vocational Education (PVE) on the class-teacher/students in Jordanian universities. The sample of the study consisted of (57) students-teachers. A self-completed questionnaire and knowledge test were developed and then employed for the purpose of the research. Their validity and reliability were by all odds verified. The research main findings revealed the followings; (a) students-teachers' vocational knowledge has been significantly improved, their achievement marks rose from (40.38) to (72.45); (b) students-teachers' attitude has been favourably improved with an overall mean score rose from (3.19) to (3.31); (c) while it is reported that there was a statistical significant difference in students-teachers' achievement in vocational knowledge, and in favour of female there was no statistical significant difference in their attitudes due to the gender variable. Based upon the research main findings, several recommendations, germane to the development of PVE course were proposed.

Keywords: *Prevocational education, class-teachers/students, Jordanian Universities*

1. Introduction

In the past two decades, Jordan had spared no efforts to reform its education system in line with the social and economic forces, which had then affected the region and the Jordanian society. Therefore, Jordan's achievements in education sector have been remarkable according to the national and international reports. Researchers, notable among them is Podesta (2007), demonstrate that the single most important factor determining how much students learn is their teachers' quality. Moreover, he argued, "teachers are considered the backbone of high-quality public education and strengthening the teacher workforce can lay the foundation for fruitful investments in other areas of public education". Keeping in mind, it is important to report that one of the aims of the higher education in Jordan is to provide the Jordanian schools with well-qualified teachers. As one of the leading higher education institutions, Mutah university responded to the needs of the local community and the country in general by providing teacher education certification programs at the undergraduate and graduate levels for those who wish to teach the pre-school classes - early childhood teacher, elementary classes class teacher, and those with disabilities - special education (Mutah University, 2011). Class-Teacher major is a 130 credit-hour program, planned to, academically and pedagogically, prepare teachers to be effective teachers in order to be able to effectively teach prescribed school subjects for the first four basic grades. PVE is, a three- credit hour course, incorporated in the study plan of class-teacher specialization (Mutah University, 2011).

2. Literature Review

Vocational Education (VE) is considered extremely important in today's globalised world. This importance springs from the fact that vocational education is one of the crucial tools for economic, social and environment development. Relatively, it is worth noting that most educational literature encourages respect for the ethics of manual work and, thus, dictates its presence in the curricula. For instance, Grubb & Lazerson (1981), Shami (1982), Tweissi (1999), and Jawarneh (2007) – each one of these researchers has highlighted the importance of Prevocational Education (PVE). It provides a vocational aspect intended within basic education curricula, and an agent for providing pupils, at an early age, with the opportunity to understand vocational work and recognise its importance in theory and perhaps also, to some extent, in practise. Thus, PVE may directly complement basic academic education by helping school students understand their potential and their capabilities at an early age. Within the context of basic classes' curriculum, PVE comprises an introduction to simple skills related to the student's daily life and careers. On the other hand, this stage of basic education is termed as the career awareness stage. Therefore, most of the international educational organizations have emphasized the importance of

vocational aspects in basic education. For instance, UNESCO perceives the curriculum of the basic education as incomplete without at least an initiation into vocational issues and awareness (UNESCO, 1974).

As stated above, pre-service teacher training programs were geared towards developing in students-teachers those essential learning competencies, mainly in terms of vocational knowledge and attitudes. They could enhance their capacities to transfer that for their future students. At the university level, in the class-teacher specialization students are given the opportunity to strengthen their vocational knowledge and promote their attitudes through studying some educational requirements including PVE. Actually, and within the context of university education, PVE is designed to provide a special initiation concerning the history, philosophy, and goals of vocational education, along with cognition in teaching and evaluating strategies of PVE with special reference to the Jordanian sector. Apparently, the description of the PVE course indicates that upon the completion of the course, students/teachers are expected, as described in the syllabus, to be able to: (1) demonstrate an understanding of the historical evolution and development of PVE; (2) demonstrate knowledge and understanding of the basic philosophical concepts, aims, and purpose of PVE; (3) acquire knowledge about how to implement the most effective teaching strategies, with more emphasis placed on a practical approach that suits PVE contents; (4) develop positive attitudes toward vocational knowledge in general, and toward the teaching of PVE in particular; (5) and acquire knowledge about how to employ the most adequate evaluation methods for assessing the school student's achievement in PVE and their vocational attitudes. By way of concluding, along with providing students with new knowledge, PVE is supposed to provide students-teachers with skills, knowledge, and positive attitudes that underlie their lesson plans and teach it in accordance with the PVE's practical nature (Tweissi, 1999; Jawarneh, 2007).

Necessity to Include the PVE in Teacher Training Program: Herr and Cramer (1979) claimed that teachers and instructors could provide "much attitudinal support and knowledge from which more motivated and informed career development may flow". Fife-Schaw, et al. (1987) found from a survey of university students attitudes towards technology that the content of university courses may influence latter attitudes to a greater degree than have been expected. Relatively, El-Sheikh et al. (1996) highlighted that the concept of "good effective class teacher" is, to some extent, embodied in the contents of courses constituting the program and could be gleaned from courses' content analysis. In supporting that, Reuchlin (2000) emphasized, "it is absolutely essential that teachers should play their part in orienting their pupils, and they must be prepared for this task during their own training." Thus, it is expected that providing university students, (future teachers), with knowledge about PVE may inculcate in them positive attitudes toward teaching the vocational education subjects, and toward vocational work. Particularly, among barriers to practicing PVE teaching at basic classes was the lack of understanding of its objectives and importance. The learning of PVE course will contribute to providing the opportunity to alleviate this situation.

More interestingly, the related literature shows that, as teacher training component, PVE courses were unable to meet the educational and philosophical needs of the participants. Rawagah (1994) investigates the degree to which the PVE courses satisfy the training needs of the elementary school students-teachers from their point of view. The results revealed that that the professional and philosophical needs were met by 65%, 67%, respectively. With respect to the effect of the gender and other study variables, results of the study did not show any statistically significant differences in meeting the educational and philosophical needs that can be attributed to any of the variables of the study. Moreover, the results of some other research revealed that vocational education has suffered from poor image and low reputation. This means that it is not favored in the society, and has been considered a second alternative for low achievement students as well. In this regard, Als'ad (2007) reported that school students in Jordan have nearly neutral attitudes toward vocational education. However, decision makers' perceptions of students' attitudes indicated that those attitudes are negative.

With regard to the content of the university courses and their effect on the knowledge and the attitudes of students-teachers, some researches' findings emphasized the necessity of taking practical measures in changing the syllabi of some courses in terms of quality and quantity of the context. Al-Taweel (2001) addressed the effect of teaching the Principles of Physical Education Course on changing students' attitudes toward physical education. The results indicated that there was a significant difference on (both male and female) students' attitudes toward physical education. The research concluded that there is a need for maintaining this course in the university syllabi and the necessity of offering it as a compulsory

course for all university students. Relatively, Al-Afnan (2006) identified the attitudes of students of the school of medicine toward Psychology Course. The research findings indicated that the students showed positive attitudes toward the course. The female students were found to have significantly more positive attitudes toward psychology than male students did. In addition, the findings revealed that there were statically significant differences between the pre-test and the post-test scores of the participants in favor of the students' scores on the post-test, which means that the psychology course has positively changed the students attitudes at the end of the term. Nevertheless, some other research findings emphasized the importance of reforming the university courses offered within teacher pre-service training programs. More relatively, Al-Omari (2008) investigated the effect of practicum education course on the attitudes of the students of the classroom teacher programme in Al-Yarmouk University in Jordan toward teaching profession. The research results revealed that the course had no effect on students' attitudes toward teaching profession. However, the research results showed that there were statically significant differences between the attitudes of male and female students in favor of female students.

Accordingly, it is expected that teaching PVE course to the students-teachers of classroom major at university level is likely to enhance their positive attitudes toward learning and then teaching vocational education for their students in the near future. Therefore, it can be claimed that the need for those majors in classroom students-teachers to have PVE knowledge and skills, so they can transfer learning in classroom into real world situation (Tweissi, 1999 and Al-Saydeh, 2002). Moreover, it can be concluded that in recent years, there has been increase in the body of knowledge in higher education in terms of students' attitudes toward several courses incorporated in the university's syllabus. This increase in interest may be attributed to the influence of knowledge and attitudes toward future participation of students outside academic institutions. However, few studies examined the vocational attitudes of higher education students, on one hand, or that investigated the effect of vocational subjects/courses on the student's vocational knowledge or attitudes, on other hand. Thus, it appears reasonable to say that this research will contribute to knowledge by illustrating the effect of the PVE course in developing students'-teachers' vocational attitudes in general, and in making them acquire the positive attitudes toward teaching PVE in schools in the short run, in particular. More interestingly, it is expected that the results of this study will help the policy makers in deciding whether to keep PVE as a compulsory or optional course in the study plan of class-teacher-students.

Over the last ten years, the PVE course veering between being a compulsory or elective course in study plan for those enrolled in the classroom teacher program at Mutah University in particular, and in Jordanian universities in general. Meanwhile, Rawagah (1994), Tweissi (1999), and Jawarneh (2007), among many others, reported that the delivery of pre-service training of class-teachers is required to emphasize the importance of equipping students-teachers with the necessary knowledge and attitudes to teach PVE. However, the question that might arise naturally: "Do the decision maker and the plan developer depend on a constructive assessment of the study plan or depend on the results of any related research?" To the best knowledge of the researcher, no study has answered this question. Thus, this research may offer research-based information about the effect of studying PVE on students'-teachers' vocational knowledge and attitudes. Thereafter, it can be decided to keep PVE as a compulsory or elective subject in the study plan of classroom teacher program. More precisely, this research was devoted to answer the following main question: "What is the effect of Studying Prevocational Education Course on the Vocational knowledge and Attitudes of the Classroom teachers-students' program in Mutah University/Jordan?" The following four main questions emerged from the central research problem:

- What is the effect of studying PVE course on the vocational knowledge of the classroom teacher program students in Mutah University (Jordan)?
- Does the effect of studying PVE course on the vocational knowledge of the classroom teacher program students-teachers in Mutah University (Jordan) have a statistical significance difference due to the gender variable?
- What is the effect of studying PVE course on the vocational attitudes of the classroom teacher program students-teachers in Mutah University (Jordan)?
- Does the effect of studying PVE course on the vocational attitudes, of the classroom teacher program students-teachers in Mutah University (Jordan) have a statistical significance difference due to the gender variable?

Although research is available regarding the school students' attitudes toward vocational education, a survey of related literature did not reveal (to the best of the researcher knowledge) any studies

investigating university students' attitudes toward vocational education in general. There was no study investigating the effect of studying PVE course on the vocational knowledge and attitudes of the students of the classroom teacher program neither at Mutah University nor in Jordanian universities in general. Furthermore, there has been an increase interest in the field of vocational education in terms of student's attitudes. The increase in interest may be attributed to the influence of attitudes toward future participation in vocational activities outside academic institutions. Having said that much, it can be said that the significance of this research results from the aforementioned facts. Moreover, it is expected that this research may provide all those involved in the development of the course plans with research-based information that may assist them to explore the root of the problem, and may lead them to develop more appropriate and adequate promotional PVE course to serve or fulfill the real needs of the students.

The following definitions were addressed in this study:

- **Pre-Vocational Education(PVE):** It is a course taught primarily to the students of classroom teacher program through lectures (three credit hours) to provide them with the basic knowledge about the history, philosophy, goals, teaching and evaluating strategies of vocational aspects at the basic education with special reference to the Jordanian sector.
- **PVE Importance to specialization of classroom teachers:** It is such importance emerged from the extent to which PVE is necessary to remain in the study plan of classroom teacher program from the students' point of view.
- **PVE Content Importance:** It is such importance germane to the syllabus content and its capacity to convince students with its connectivity with their daily life.
- **PVE-Importance to Student is personally:** It is such importance germane to the capacity of PVE course to enhance the student's competencies from the students' point of view.
- **PVE-General Importance:** It is such importance that is related to the students' overall attitudes toward the vocational Knowledge in general, and the importance of the knowledge they acquired in PVE course from their point of view.
- **Students' Attitudes:** It is the learned/acquired predisposition toward the learning /acquiring of the vocational knowledge and attitudes, taking into account the students' point of view

3. Methodology

Population and Sample: The population of the study consisted of all students enrolled in classroom teacher specialization at Mutah University, namely those enrolled during (both the second and summer) semesters of the academic year 2009-2010. A sample of (57) students was purposively targeted because the PVE course, during the period of this research, was one of the elective subjects according to the study plan of classroom teacher Bachelor program. Thus, it is worth noting that the targeted sample, considered before being exposed to the course, as the control group, and the experimental group after being exposed to the PVE course for duration of complete term.

Research Instrument: A self-completed questionnaire on vocational attitudes was developed and administered to total of (57) students, (37 female and 20 male) at Mutah University. The (34) items of the questionnaire are based on previous related literature Rawagah (1994), Tweissi (1999), and Al-Omari (2008), along with the present researcher's collective experience. The questionnaire was basically designed to measure students-teachers' perceptions and attitudes toward the PVE course. The targeted sample was asked to respond to a five-point Likert scale with the following descriptors:

Degree of agreement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Numerical Values	5	4	3	2	1

Moreover, it can be claimed that questionnaires were devised and administered in the best appropriate conditions. In addition, an achievement test was constructed to measure the level of vocational knowledge among the enrollee of the elementary class students-teachers program. This knowledge constituted the vocational subjects included in Jordanian PVE curriculum for the first four grades, and the teaching and evaluating strategies that may suit the age of students and nature of the PVE subject. The test consisted of (50) multiple-choice questions, distributed on the same domains already embodied in

the PVE course which they will be (for the pre-test) or have been taught (for the post-test). There are several positive advantages encouraging the researcher to use an objective test. Probably, of the most obvious advantages was large syllabus content can be covered, and the fact that it gives a homogenate opportunity to all pupils without subjective elements creeping in.

Instruments Validity: The questionnaire and the achievement test were validated by a panel of ten referees, selected on the base of their expertise in conducting similar research in PVE and in measurement and evaluation. They have been asked to check the instruments in general and the items/questions in particular, for accuracy, clarity, comprehensiveness, and applicability. In terms of the received feedback, the necessary changes and modifications were made, so the instruments were ready for the second phase of validity. Three weeks prior to the end of the second semester, the questionnaire and the achievement test were administered to a randomly selected sample of (24) students, other than the targeted sample. The views and answers of these students, who were later excluded from the sample of the research, were employed to determine the internal consistency of both (the questionnaire and the achievement test). The Calculated Coefficient Alpha reliability for the attitudes scale was 0.90, and 0.93 for the test, which confirms the appropriateness and the validity of the research instruments.

Instruments Reliability: Reliability of the questionnaire and the achievement test were verified by measuring the internal consistency of the complete data set before the administration of the final survey and test. The pilot study carried out by administering the questionnaire and the achievement test to a group of students similar to those being sampled for the research (n=24) at different times three weeks apart. The Cronbach's Alpha Procedure was employed to obtain the instruments' reliability, which was (0.90) for the questionnaire and was (0.93) for the test. Those values were considered acceptable in educational studies, which support the appropriateness of the scale and the test to be employed for the current research purposes (Cohen et al. 2000).

Data Analysis: To analyze the data germane to the research questions, descriptive statistics were employed to compute means and standard deviations for the overall scale of students-teachers attitudes. Furthermore, T-test was employed to determine differences in students' attitudes and achievements based on gender and domain variables.

4. Results and Discussions

Results related to the first and the second questions, regarding the effect of studying PVE course on the vocational knowledge of the classroom teacher program students at Mutah University (Jordan) from the students' point of view. Table (1) presents the students' scores at the vocational knowledge pre-test and post-test. It can be noticed that there is strong evidence showing that students' vocational knowledge has been significantly improved. The overall mean of their achievement marks rose from (40.386) to (72.456).

Table 1: Students' Scores on the Pre and post Tests

Test Nature	N	Mean	S.D	S.E Means	T Value	DF	Sig. (2-tailed)
Pre-Test	57(Total)	40.386	13.214	1.750	23.073	56	.000
	20(Male)	42.200	14.347	3.208	25.859		
	37(Female)	39.405	12.656	2.080			
Post-Test	57(Total)	72.456	11.862	1.571	46.115	56	.000
	20(Male)	71.900	13.098	2.928			
	37(Female)	72.756	11.0317	1.860			

This gives a positive indicator about the effect of PVE on student's vocational knowledge in line with Al-Taweel (2001). However, this result may be attributed to several reasons; one being improving their grade points average, another being students' hard work to gain high marks in such an elective course. The other reason is teaching methodology in which PVE was taught, where the lecturer mostly employs the discussion strategy. Therefore, it can be claimed that learning is not only a function of students' prior knowledge or the knowledge they are exposed to, but both interactive to produce a new achievement. As far as the gender effect is concerned, it can be noticed that although males and females are supposed to have close levels of prior knowledge, their achievements tend to have statistical differences according to the results of the pre and the post test. More interestingly, while the scores of the males are higher than

their counterparts of the females at the pre-test, their scores are lesser than the females at the post test. This result can be explained by the fact that the overall achievements of males at the school of education are mostly less than the females. This can be attributed to the nature of the teacher education programs in Jordanian universities, which encompass mostly female students. Actually, female students constitute the highest proportion at the school of education with percentage reaches 85%, so the competition to gain high achievement scores is most likely to take place among them than their male colleagues.

Results related to the third question, regarding the effect of studying PVE course on the vocational attitudes of the classroom teacher program students at Mutah University from the students' point of view. Table (2) shows the Descriptive Analysis for the four main domains of the attitudes scale. As mentioned above, these domains include (36) items that measured the students' attitudes toward PVE. The results revealed that the overall mean score for all items rose from (3.19) to (3.31), which indicate generally favourable attitudes toward studying PVE course. This result goes with the findings of Al-Taweel (2001), and Al-Sa'd (2007). Moreover, as table(2) shows, the results revealed that the domain of the PVE importance to students' personality, (with a great benefit for their daily life), gained the first rank, with the highest increase in the mean of the sample views, which rose from (2.79) to (3.37) with the difference between pre and post scale findings means reached (0.5864). Such importance is related to the effect of PVE course to enhance students' vocational competencies, which in turn may empower them to smoothly deal with their daily life problems.

Table 2: Domains-Based Students' Scores on the Attitudes Scale

Variable Source (PVE Domain)	Items S. No.	N	Pre-Attitudes		Post-Attitudes	
			Mean	S.D	Mean	S.D
TOTAL-AVERAGE	The Whole Scale	57	3.19	.34	3.31	.26
PVE-Importance to Student's personally	PRE:1,2,3,7,2	20(Male)	2.66	.60	3.27	.38
	0,21,29	37(Female)	2.85	.50	3.43	.26
	POST:1,2,3,7,11,17,23	57 (Total)	2.79	.54	3.37	.31
PVE-Content Importance	PRE:9,10,12,1	20 (Male)	3.38	.42	3.69	.55
	7,18,25,30,32,34	37 (Female)	3.49	.37	3.69	.57
	POST:4,8,9,10,12,18,19,21,24,27	57 (Total)	3.46	.39	3.69	.56
PVE Importance to specialization of classroom teachers	PRE:13,14,15,16,22,23,24,27	20 (Male)	3.01	.46	3.20	.37
	POST:13,14,15,16,22,23,24,27	37 (Female)	3.03	.43	3.28	.33
	POST:13,14,15,16,22,23,24,27	57 (Total)	3.02	.44	3.25	.34
PVE-General Importance	PRE:4,5,6,8,1	20(Male)	3.07	.38	3.28	.32
	1,19,26,28,31,33	37(Female)	3.22	.35	3.40	.36
	POST:5,6,10,20,22,28,30,31,33,35	57 (Total)	3.17	.36	3.36	.35

PRE: Findings emerged from Pre-attitude questionnaire.

POST: Findings emerged from Post-attitude questionnaire.

However, the domain of PVE general importance, as viewed by the research sample, gained the least rank, where the mean of the students' views rose from (3.17) to (3.36) with the difference between pre and post scale findings means reached only (0.19). Such importance is related to students' overall attitudes toward the importance of the knowledge they acquired from the PVE course. One of the interpretations of such a status is that: if students-teachers viewed PVE as important to affect their vocational competencies, it does not necessarily mean that the vocational knowledge they acquired can be equally viewed as important. However, the domain of importance of PVE content gained the second rank, where the mean of

students' views rose from (3.02) to (3.25), with the difference between pre and post scale findings means reached (.23), and with same trend was the rank of the domain related to PVE importance to classroom teachers program, with the difference between pre and post scale findings means reached (.23). The last both domain results support the idea that the effect of PVE course related to the fact PVE course is, by way or another, linked to class-teacher, and their future teaching profession. Thus, PVE is necessary to remain in the study plan of class teacher program. It can be noted that the students' attitudes run in a positive direction, meaning that studying the PVE is more likely to have positive effect on students' attitudes toward vocational education in general and toward the learning and the teaching of PVE in particular. Such a result was illustrated by some researchers' expectations. For instance, Tweissi (1999) emphasised that providing students (future teacher) with knowledge about PVE may inculcate in them positive attitudes toward PVE.

Table 3: T-Test Results for Differences between the Means of (Pre & Post attitudes scales) for Each Domain

	St. Error	T-Value	Sig.
Total Average	4.8	-1.804	.0695
PVE- CONTENT	7.305	-.989	.3280
PVE-GENERAL IMPORTANCE	6.495	-1.24	.5650
PVE-PERSONAL IMPORTANCE	6.946	-1.85	.0805
PVE- IMPORTANCE to CLASSROOM TEACHERS	6.516	-.839	.0406

Results related to the fourth question, the fact as to whether there are any statistical significant differences in students' attitudes toward studying (PVE) could be attributed to the gender variable. Although the findings, as shown in Table (3), revealed that the students' attitude runs positively, the difference between the female and male level of attitude is not significant. To put it simply, it means that both males and females tend to have the same attitude level towards studying PVE. One can conclude that gender is an insignificant factor in determining students' attitudes toward PVE and Vocational Education. This result confirms the findings of some relatively Jordanian studies as those of Rawagah (1994), and Al-Taweel (2001). Such consistency can be attributed to the similarity of the contents and the status of the courses studied in these studies. However, these results contradicting the outputs of Al-Afnan (2006), and Alomari (2008). It is worth noting that this contradiction can be attributed to variation in the contents and conditions of the two courses studied in these two studies. The different nature of the courses and the readiness of students may contribute to the controversial reports of findings. Notably, although the effect of studying PVE indicates positive attitudes towards it, it is important to emphasize that there is an ample scope for improvement and an appropriate vehicle for this improvement, which could be a modification of the contents of the course description to fulfill the real needs of classroom teachers from their point of view. The course could be extended to host some of the recent vocational aspects (*supposed to be compatible with the recent development of PVE curriculum of the basic classes where the course graduate will be involved in future*). In so doing, it is expected to convince the students about the importance of PVE for a classroom teacher.

5. Conclusion and Recommendations

It can be concluded that the findings of this research have important implications for class-teacher programs in Jordanian universities. One of these implications is the need to promote the vocational attitudes among students, which encourage them to study PVE. Therefore, the study plan developers should reconsider the idea of making PVE a compulsory subject keeping in mind the fact that these students will be involved in teaching PVE for basic classes. Moreover, it can be concluded that an important area, for future research, concerns designing and evaluating the effect of studying other courses embodied within the context of the study plans of the several teacher-training programs. Finally, it is imperative, largely, that PVE should be maintained as a compulsory subject in the study plan of the classroom teacher program. The complementarily principal, the cornerstone of PVE teaching, *de facto* illustrates this well. Based on the results above, the researcher implies the followings;

- It is necessary to conduct further research studies in the courses offered by the faculties of education, mainly those courses swinging in study plans between being elective or compulsory.
- The findings of this research offer research based information that may support policy makers to decide keeping PVE as a compulsory course in the study plan of the class-teacher program.
- The findings of this research offer further support for the need to educate students-teachers, within the pre-service teacher training programs, about the importance of vocational education, by making sure that they are aware of what is expected from them to teach in the near future after graduation.

References

- Al-Afnan, A. A. (2006). The Effect of Studying a Psychology Course on Students' Attitudes toward Psychology at the Faculty of Medicine at King Saud University. *Journal of Educational and Psychological Sciences*, 7(4), 112-129.
- Al-Omari, K. M. (2008). The Effect of School Experience on the Attitudes of Classroom Student Teachers at Yarmouk University toward Teaching Profession. *Mutah Lil-Buhuth Wad-Dirasat*, 28(1), 216-244.
- Al-Sa'd, A. (2007). Evaluation of Students' Attitudes towards Vocational Education in Jordan. Unpublished PhD Diss., Malnio University.
- Al-Saydeh, M. (2002). Pre-vocational Education in Jordan: Implications for Teacher education and In-Service Training. Unpublished PhD Diss., Huddersfield University, UK.
- Al-Taweel, H. (2001). The Effect of Teaching the Principles of Physical Education Course on Changing Students' Attitudes at Mutah University/Jordan Towards Physical Education. *Mutah Lil-Buhuth Wad-Dirasat*, 16(4), 87-110.
- Cohen, L., Manion, L. & Morrison, K. (2000). Research Methods in Education. London: Routledge.
- El-Sheikh, O., Sawalmeh, Y. & Nabhan, M. (1996). Effect Evaluation of the Higher Certification Program at the Public Universities of Jordan, Amman: National Centre for Human Resources Development, study funded by the World Bank.
- Fife-Schaw, C., Breakwell G., Lee T. & Spencer, J. (1987). Attitudes towards New Technology in Relation to Scientific Orientation at School: Preliminary Study of Undergraduates. *British Journal of Educational Psychology*, 57, 114-121.
- Grubb, W. N. & Lazerson, M. (1981). Vocational Solutions to Youth Problems; the Persistent Frustrations of the American Experience. *Educational Analysis*, 3(2), 91-103.
- Herr, E. L. & Cramer, H. S. (1979). Career Guidance through the Life Span: Systematic Approaches. Boston: Little, Brown and Company.
- Jawarneh, T. Y. (2007). Status of Prevocational Education (PVE) in Jordanian Elementary Schools as Reported by Elementary Teachers. *Dirasat, Educational Sciences*, 34(2), 442-456.
- Mutah University Website. (2011). Available in the Internet: <http://www.mutah.edu.jo/index.php/en/edu-sci.html> as retrieved in December 20, 2011.
- Podesta, J. (2007). Quality Teachers, Quality Schools. Center for American Progress: Testimony to the House Education and Labor Committee. May 11, 2007. http://www.americanprogress.org/issues/2007/05/podesta_testimony.html
- Rawagah, G. (1994). The Degree to Which PVE Course at Yarmouk University Satisfy the Training Needs of the Elementary School Teachers. *Abhath Al-Yarmouk Journal*, 10(3), 549-571.
- Reuchlin, M. (2000). Individual Orientation in Education. Netherlands: European Cultural Foundation.
- Shami, P. (1982). Pre-Vocational Education in Pakistan and its Relevance to. The Needs of Rural Areas. Unpublished PhD Diss., University of Keele, England.
- Tweissi, A. I. (1999). Effectiveness and Efficiency of the Jordanian Prevocational Education Provision. Unpublished PhD Diss., Huddersfield University, UK.
- UNESCO. (1974). Revised Recommendation Concerning Technical and Vocational Education. General Conference of UNESCO, the 18th Session, Paris.