



Challenges Facing Vocational Education Students in Jordan in Light of the Covid-19 Pandemic: An Empirical Study

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Abstract

Objectives: This study aims to uncover the challenges faced by vocational education students in Jordan in light of the COVID-19 pandemic.

Methods: A sample of 1200 newly joined students was selected from the Vocational Training Corporation in the central region of Jordan. A questionnaire was designed, consisting of two domains: challenges related to infrastructure and challenges related to students. The validity and consistency of the questionnaire were verified.

Results: The findings indicate that the level of challenges facing the students is high, both at the infrastructure level and the students' level, with no statistically significant effect on gender. Practical training necessitates specific materials, tools, and instruments that cannot be adequately provided through distance education.

Conclusions: The study recommends improving the infrastructure of the vocational training institution to enhance the quality of education and training. Additionally, there is a need to increase financial support for the institution to effectively implement vocational training programs. Lastly, a comprehensive review of educational policies is necessary.

Keywords: Challenges, vocational education, vocational training, Jordan.

التحديات التي تواجه طلاب التعليم المهني في الأردن في ظل جائحة كوفيد-19 (دراسة تطبيقية على إقليم الوسط)

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ملخص

الأهداف: هدفت هذه الدراسة إلى الكشف عن التحديات التي تواجه طلاب التعليم المهني في الأردن في ظل جائحة كوفيد-19. المنهجية: تم اختيار عينة قوامها (1200) طالب وطالبة من الطلبة الملتحقين بالمؤسسة العامة للتدريب المهني بإقليم الوسط في المملكة الأردنية الهاشمية. وتم تصميم استبانة مكونة من مجالين، هما: التحديات المتعلقة بالبنية التحتية والتحديات المتعلقة بالطلاب. وبعد التحقق من صدقها واتساقها تم تطبيق الأداة على عينة الدراسة.

النتائج: أظهرت النتائج أن مستوى التحديات التي تواجه الطلاب كان مرتفعاً، سواء على مستوى البنية التحتية أو على مستوى الطلاب. كما أظهرت النتائج عدم وجود فروق ذات دلالة إحصائية في مستوى التحديات تعزى لمتغير الجنس.

الخلاصة: أوصت الدراسة بتحسين البنية التحتية لمؤسسة التدريب المهني من أجل تطوير التعليم والتدريب وزيادة الدعم المالي للمؤسسة حتى تتمكن من تنفيذ برامج التدريب المهني بشكل فعال للغاية.

الكلمات الدالة: التحديات، التعليم المهني، مؤسسة التدريب المهني، جائحة كوفيد-19، الأردن..

INTRODUCTION

Vocational education is one of the education tracks which aims to provide students with certain knowledge and skills in order to prepare them to be engaged in the labour market to participate in societal sustainable development (Williams, Becky, and Theophilus, 2018).

According to Al-Twaisi (2013) and OviaweNiagu (2018), the main objective of all technical and vocational education and training programs is to allow students to acquire knowledge as well as practical skills and situations associated with employment in a certain vocational field, noting that practical skills are considered to be a vital issue to achieve competitive advantage for the national economy.

Practical training represents the essence of vocational education. Through training, focus is placed on practical skills to prepare the individual to work in a certain vocation or to raise his/her competency in a vocation that he/she already practices (Steven, Hui and Mathew, 2005). Peterson (2007) considered practical training to be the leading success requirement in practical life by means of developing the basic skills so that the individual is prepared for employment through acquiring certain skills in one or more of the processes of production, operation, maintenance, management or other services.

This could be subject to a certain level, age category or time period. Thus, practical training prepares the individual to practice a certain vocation or raises his/her productive competency.

In the Jordan The Vocational Training Corporation was established according to Temporary Law No. (35) of (1976) as one of the development projects in the five-year plan (1976-1980) with the aim of expanding the preparation of trained manpower and organizing the labor market, as it started its work in 1977. The institution provides its services to all citizens Their educational levels are based on the principle of continuing education for life, whether that is professional preparation programs of various levels, or programs to raise the efficiency of workers practicing in the labor market, and the institution also provides training and consulting services in the field of occupational safety and health to reduce accidents in the workplace, and train trainers and supervisors in the behavioral and administrative aspects, and developing the work of small and medium enterprises.

The vision of the institution is to prepare and qualify skilled workers according to the requirements of the labor market through the development and implementation of a system of quality professional training services that keep pace with modernity and technology in partnership with the private sector (General Organization for Vocational Training (Annual Report, Amman, Jordan, 2019),

But after the Covid-19 pandemic, the organization was forced to change its direct training patterns due to public health and safety requirements. The current study examines the challenges faced by students who receive their training at the General Organization for Vocational Training.

Problem Statement

Covid-19 pandemic represented -and is still- a big challenge for educational institutions. Face-to-face lessons have been suspended at all levels and substituted by remote learning, through a set of various forms and platforms (with or without the use of technology). However, this learning style has shown a big challenge in Jordan, since the curricula have not been designed to suit this type of learning.

Practical training in vocational education requires the availability of a training environment with capabilities that allow learners to implement the targeted skill practically inside vocational education workshops that belong to educational institutions, which can't be achieved through remote learning. So, the problem of this study is represented in uncovering the challenges that face the students of vocational education in Vocational Training Corporation in Jordan

Research Questions

In light of the research problem, the current study seeks to answer the following research questions:

1. What are the challenges associated with infrastructure that face vocational education students in Vocational

Training Institution under the Covid-19 pandemic?

2. What are the challenges associated with students of vocational education in Vocational Training Corporation under the Covid-19 pandemic?
3. Does the nature of the challenges associated with infrastructure that face vocational education students in the Vocational Training Corporation in Jordan under the Covid-19 pandemic differ due to the gender variable?
4. Does the nature of the challenges associated with students of vocational education in the Vocational Training Corporation in Jordan under the Covid-19 pandemic differ due to the gender variable?

Study Objectives

The current study seeks to achieve the following objectives:

1. Determining the challenges associated with infrastructure that face vocational education students in in Vocational Training Institution under the Covid-19 pandemic.
2. Determining the challenges associated with students of vocational education in in Vocational Training Institution under the Covid-19 pandemic.
3. Uncovering the differences in the viewpoints of the sample members on the nature of the challenges associated with infrastructure or students of vocational education in Vocational Training Institution under the Covid-19 pandemic due to the gender variable.

Importance of the Study

This study acquires its importance from the fact that it investigates an important issue, which is represented in determining the challenges resulting from the Covid-19 pandemic to vocational education students in Vocational Training Institution. This study is hoped to achieve the following:

1. Benefiting those who design and prepare practical education programs in the specialization of vocational education in the Vocational Training Corporation through giving them information about the nature of the challenges facing vocational education students, in a manner that contributes to adopting policies that lead to overcome these challenges.
2. Benefiting faculty members at the Vocational Training Institution in adopting teaching strategies and activities that suit the nature of practical education.

Research Limitations

This research is constrained by the following limitations:

- Spatial limitations: The study has been applied on the Vocational Training Corporation
- Time limitations: This field study has been applied in the academic year 2020/2021.
- Human limitations: The study has been applied to vocational education students in the Vocational Training Institution.
- The findings of the study can only be generalized in light of the above-mentioned limitations as well as the validity and consistency of the study tool used.

Theoretical Framework

Practical training requires the availability of various material and technical capabilities, where the individual's acquisition of a skill is dependent on the practical application of the basic elements of that skill. This means that training requires the provision of practical conditions (materials, tools, techniques, training plans), followed by practical practicing of the targeted task through training in order to ensure mastering the skill as well as the acquisition of a set of basic values (cooperation, teamwork, accuracy) (Wolff, 2018).

According to Al-Zoubi (2015) and Al-Sa'aideh and Mahasneh (2015), practical training requires the appropriate

infrastructure for training that enables the student to implement the targeted skills by means of practical training to reach a high level of mastery.

However, after the outbreak of the Covid-19 pandemic, educational institutions gave great attention to the health aspect and curricula have become remotely implemented to ensure social distancing, which changed the shape of education in the world, since the majority of educational institutions all over the world have canceled direct (face-to-face) education and moved to remote education and learning since March 2020, in an attempt to contain the spread of the Covid-19 pandemic (Pietro et al., 2020).

A survey conducted by the International Labour Organization (ILO) on the effect of the Covid-19 pandemic on education and technical and vocational training indicated the lack of flexibility of vocational training systems to maintain the continuity of providing education, evaluation and development.

The survey revealed that vocational training institutions provided only limited opportunities to the students related to use technology and electronic learning resources (Ndahi, 2020).

According to the World Bank (2020), challenges caused by the Covid-19 pandemic were represented in the limited chances of the workforce retraining and qualification, along with the absence of a schedule to get rid of the pandemic, which affected the capability of the technical and vocational education and training system in terms of providing technical and vocational skills' training opportunities.

Among the prominent challenges that faced practical training during the Covid-19 pandemic was electronic applications, where the infrastructure was not prepared for this type of education. Furthermore, scientific curricula were not designed to serve remote learning; rather, they were designed to suit direct (face-to-face) learning (Shdaifat, Shdaifat and Khateeb, 2020).

According to Alam (2020), remote learning problems are generally represented in the weakness of Internet networks, especially in rural regions and remote ones, in addition to the high cost of Internet usage, lack of practical training opportunities, weakness of technical skills of the students and the unavailability of modern electronic instruments, where students are obliged to use their mobile phones to follow-up remote learning.

A study conducted by Syauqi, Munadi and Triyono (2020) indicated that the problems caused by the Covid-19 pandemic affected the skills aspect of students in vocational training, noting that vocational education is not restricted to mastering knowledge, but extends to the possession of the skills that qualify the individual to enter the labour market.

Pietro et al. (2020) confirmed that the levels of skills represent good indicators of predicting the subsequent result, where students with poor skills face big problems in the labor market in terms of employment rates and wages, in light of the absence of appropriate policy measures to address the learning problems resulting from the Covid-19 pandemic.

In Jordan environment, the impact of the Covid-19 pandemic has been obvious, where lecturers had to design remote learning using the Internet in a relatively short period of time and students had to change their way of learning. On the other hand, not all the lecturers had the necessary experience to design and implement e-education through the Internet, which is also valid for students who lack the appropriate technical competencies to cope with this type of learning.

Based of the above discussion, the current study investigates the most important problems that encountered vocational education students in Vocational Training Corporation in Hashemite Kingdom of Jordan under the Covid-19 pandemic, with the aim of achieving sound planning for vocational education and training programs.

Literature Review

Numerous studies have been conducted in different local and international environments on the effects and consequences of the Covid-19 pandemic on education in general and vocational education in particular. In this section, a number of relevant studies will be presented.

- A study conducted by Onyema et al. (2020) aimed at investigating the impacts of the Covid-19 pandemic on education. Data was collected through structured questionnaires applied to (200) respondents including teachers, students, parents and policy makers from different countries in Africa. The results revealed that Covid-19 had negative impacts on

education, including learning disturbances, lack of access to education facilities and the high cost of this type of education. Moreover, the results confirmed the weakness of infrastructure, including network and energy problems, lack of access and weakness in digital skills, all of which represent serious remote-learning challenges.

- Joshi and Bhaskar (2020) aimed at uncovering the challenges facing teachers in India during the Covid-19 pandemic as a result of changing the learning styles. The study used the qualitative research methodology which included conducting deep, semi-structured interviews with (19) teachers to collect data related to the obstacles that they encounter during teaching and assessment through the Internet.

The results revealed four main challenges that faced teachers during teaching and assessment through the Internet, which were: lack of infrastructure readiness, continuous interruptions in the Internet during teaching and assessment, lack of training and lack of technical support by educational institutions.

- Alam (2020) attempted to detect the challenges caused by remote learning under the Covid-19 pandemic.

The study used the qualitative approach and data was collected from secondary sources, such as recently issued journals and newspapers, in addition to short interviews with a number of private-university students who studied different subjects using their mobile phones. The study results showed that education through the Internet exposes the two main stakeholders (teachers and students) to a number of serious challenges.

- Basilaia and Kvavadze (2020) investigated the level of continuity of the learning process at schools using remote education under the Covid-19 pandemic through the available educational platforms, like the electronic gate and Microsoft Teams for public schools, which can be used for Internet education and direct communication. A case study was carried out on one school in Georgia which used Internet education and included (950) students. The results confirmed the success of rapid transfer to Internet education. However, the results also revealed that traditional (face-to-face) education was found to be more efficient than remote education, since the current educational curricula are not designed to be implemented using e-learning platforms.

From the presented previous studies, it can be concluded that the majority of them focused on the challenges that faced teachers under the Covid-19 pandemic, with the absence of a study that investigated the challenges facing vocational education students in general and practical education students in particular as a result of the Covid-19 pandemic.

This makes the current study a step towards researching and analyzing the consequences of the Covid-19 pandemic on vocational education in particular, noting that vocational education is based on the acquisition of students of a set of practical skills and consequently requires teaching styles and strategies that finally contribute to reinforce the students' practical knowledge.

Methodology and Procedures

The current study is a descriptive study which adopted the descriptive analytical approach in order to diagnose the challenges that face vocational education students in Vocational Training Corporation in Jordan.

Study Sample

Sample selection is a methodological measure that includes the process of selecting a statistically representative sample from among the research population under investigation. Sample selection is considered an important Instrument for research studies, since it is very difficult to access the whole research population, especially when it is very large. So, the researcher selects the sample so that it statistically represents the population, which helps in answering the research questions in a correct, scientific manner (Majid, 2018:3). For our current study, the study sample was randomly selected from of the students created in Vocational Training Corporation in the Central Region of the Jordan amounting to (652) male and (548) female students. Such random selection allows all of the research population members to be equivalently included in the sample away from any bias or interference by the researcher.

Research Instrumentation

The questionnaire represents the main way of collecting primary, quantitative data through formulating a number of questions designed to arrive at facts aimed to be revealed by the research. A questionnaire allows quantitative data to be

collected in a unified manner so that the data is internally consistent and coherent for analysis. This requires that questionnaires are always associated with a specific purpose related to the research objectives in order that a questionnaire is observable and capable of measuring what it is intended to measure (Roopa and Rani, 2017:273). In the current research, the questionnaire has been built according to the following steps:

- 1- Reviewing relevant literature and previous studies that dealt with the challenges associated with remote learning. This contributed to giving a primary vision on how to determine the domains that should be measured in the current study.
- 2- Consulting a number of university faculty members, gathering their viewpoints and arranging them in accordance to the questionnaire-building method and in consistency with the remote learning experience in Jordan.

In its initial form, the questionnaire consisted of (16) items distributed to two domains; namely, infrastructure challenges with (8) items and students' challenges with (8) items as well.

Apparent Validity

Apparent validity means the extent to which the overall appearance of the questionnaire indicates its capability of measuring what it is intended to measure. Thus, apparent validity is considered as a form of validity which is qualitatively assessed through forwarding the questionnaire to a group of experts (Roopa and Rani, 2017:273). Accordingly, the questionnaire of the current study was presented to (10) specialized and experienced referees at Jordanian universities.

Construct Validity

With the aim of verifying the construct validity indicators, the scale was applied to an exploratory sample consisting of (100) male and female the study sample. The construct validity indicators have been calculated using Pearson correlation coefficients between each item and the domain to which it belongs as well as with the total scale. The Pearson correlation results showed that the correlation coefficients of the items of the domain (infrastructure challenges) with their domain ranged from (0.541) to (0.727) and with the total scale from (0.307) to (0.644), while the Pearson correlation coefficients of the items of the domain (students' challenges) with their domain ranged from (0.557) to (0.787) and with the total scale from (0.425) to (0.628).

Furthermore, the inter-correlation coefficients for the two domains of the questionnaire were calculated by using Pearson correlation and found to be ranging between (0.303) and (0.580), whereas the correlation coefficients between the domains and the total scale ranged between (0.650) and (0.844). All the correlation coefficient values calculated were statistically significant at the significance level ($\alpha = 0.05$), which indicates the construct validity of the scale.

Test-retest Reliability

To ensure the study Instrument reliability, it was applied to a group of (100) male and female students from outside the study sample and re-applied to the same group with a time interval of two weeks between the two applications. Pearson correlation coefficient was calculated between the two applications. The reliability coefficient was calculated using the internal consistency method according to the Cronbach's alpha equation. Table 1 shows the internal consistency coefficient according to Cronbach's alpha equation, as well as the test-retest reliability coefficients for the domains and the total scale. The values of these coefficients were considered to be appropriate for the purposes of this study.

Table 1. Internal consistency coefficients (Cronbach's alpha) and test-retest reliability coefficients for the domains and the total scale

Domain	Number of items	Test-retest reliability	Cronbach's alpha
Infrastructure challenges	8	0.93	0.75
Students' challenges	8	0.91	0.73
Total	16	0.88	0.83

Statistical Criterion

Five-point Likert scale was adopted to correct the responses of the study sample, giving each item one of the scale's five degrees (strongly agree, agree, neutral, disagree and strongly disagree), numerically corresponding to (5, 4, 3, 2 and 1), respectively. The responses of the sample members were classified after adopting the statistical model of relative grading in order to judge the arithmetic means of the tool items and domains as follows:

[2.49 or less: low; 2.50-3.49: moderate; 3.50 or more: high].

Study Results

This study aimed at determining the challenges facing vocational education students in the Vocational Training the Covid-19 pandemic. In this section, the results of the study will be presented.

results related to the first question: What are the challenges related to infrastructure that face vocational education students under the Covid-19 pandemic in the Vocational Training Corporation?

To answer this question, frequencies, percentages, arithmetic means and standard deviations of the challenges related to infrastructure facing vocational education students in the Vocational Training institutions under the Covid-19 pandemic were extracted. The results are illustrated in Table 2.

Table 2. Frequencies, percentages, arithmetic means and standard deviations of the challenges related to infrastructure facing vocational education students in the Vocational Training institutions under, the Covid-19 pandemic

No.	Item	Very low		Low		Intermediate		High		Very high		Arithmetic mean	Standard deviation	Degree
		N	%	N	%	N	%	N	%	N	%			
1	Absence of infrastructure readiness in Vocational Training Corporation(required programs, materials, equipment) for practical training through the Internet	270	22.5	563	46.9	270	22.5	73	6.08	24	2.0	3.83	0.894	High
2	Incompatibility of computers and mobile phones used by students with practical training	219	18.3	627	52.3	219	18.3	130	10.83	5	0.4	3.82	0.813	High
3	Slowness of the Internet, increasing the difficulty of remote training	228	19.0	599	49.9	228	19.0	125	10.41	20	1.7	3.74	0.942	High
7	Lack of availability of materials, tools and instruments for conducting practical training by remote learning	197	16.4	572	47.7	197	16.4	185	15.41	49	4.1	3.61	1.016	High

No.	Item	Very low		Low		Intermediate		High		Very high		Arithmetic mean	Standard deviation	Degree
		N	%	N	%	N	%	N	%	N	%			
5	Incompatibility of practical training programs with remote learning	219	18.3	476	<u>39.7</u>	219	18.3	<u>226</u>	<u>18.83</u>	60	5.0	3.55	1.065	High
6	Difficulty of accessing IT and communication materials by students	168	14.0	510	<u>42.5</u>	168	14.0	<u>322</u>	<u>16.83</u>	32	2.7	3.53	0.966	High
4	Absence of focusing on activities and practical performance	137	11.4	475	<u>39.6</u>	137	11.4	<u>352</u>	<u>29.33</u>	99	8.3	3.29	1.128	Intermediate
8	Difficulty of accessing the links used for lectures through the Internet	99	8.3	228	<u>19.0</u>	<u>99</u>	8.3	673	<u>56.8</u>	<u>101</u>	8.41	2.73	1.166	Intermediate
	Infrastructure challenges as a whole											3.51	0.652	<u>High</u>

Table 2 shows that the arithmetic means ranged between (2.73) and (3.83), where items (1, 2, 3, 5, 6 and 7) came with high degrees, while items (4 and 8) scored intermediate degrees. The arithmetic mean of the infrastructure challenges domain as a whole amounted to (3.51), which corresponds to a high degree of challenge.

results related to the second question: What are the challenges related to students that face vocational education students under the Covid-19 pandemic in the Vocational Training institutions?

To answer this question, frequencies, percentages, arithmetic means and standard deviations of the challenges related to students of vocational education in the Vocational Training institutions under, the Covid-19 pandemic were extracted. The results are shown in Table 3.

Table 3. Frequencies, percentages, arithmetic means and standard deviations of the challenges related to vocational education students in the Vocational Training institutions under the Covid-19 pandemic

No.	Item	Very low		Low		Intermediate		High		Very high		Arithmetic mean	Standard deviation	Degree
		N	%	N	%	N	%	N	%	N	%			
1	Weakness of computer skills of students	260	21.7	576	<u>48.0</u>	266	22.2	<u>75</u>	<u>6.3</u>	23	1.9	3.81	0.909	High
2	Difficulty of implementing practical activities through web applications	311	25.9	526	<u>43.8</u>	209	17.4	<u>105</u>	<u>8.8</u>	49	4.1	3.79	1.052	High

No.	Item	Very low		Low		Intermediate		High		Very high		Arithmetic mean	Standard deviation	Degree
		N	%	N	%	N	%	N	%	N	%			
4	Difficulty in using interactive applications (e.g. Zoom Inc., Microsoft Teams)	267	22.3	540	<u>45.0</u>	261	21.8	<u>122</u>	<u>10.2</u>	10	0.8	3.78	0.934	High
7	Difficulty in communication between teacher and students	195	16.3	606	<u>50.5</u>	269	22.4	<u>94</u>	<u>7.8</u>	36	3.0	3.69	0.936	High
5	Reliance by the teacher on explanation more than training	193	16.1	509	<u>42.4</u>	319	26.6	<u>120</u>	<u>10.0</u>	59	4.9	3.55	1.032	High
8	Lack of availability of students' motivation towards remote education	199	16.6	474	<u>39.5</u>	280	23.3	<u>162</u>	<u>13.5</u>	85	7.1	3.45	1.129	Intermediate
3	Difficulty in students' access to the Vocational Training Corporation platforms (e.g. electronic education)	152	12.7	509	<u>42.4</u>	272	22.7	<u>166</u>	<u>13.8</u>	101	8.4	3.37	1.127	Intermediate
6	Lack of availability of practical training during remote learning	123	10.3	416	<u>34.7</u>	<u>413</u>	34.4	194	<u>16.2</u>	<u>54</u>	4.5	3.30	1.005	Intermediate
	Students' challenges as a whole											3.59	0.638	<u>High</u>

Table 3 shows that the arithmetic means ranged between (3.30) and (3.81), where items (1, 2, 4, 5 and 7) came with high degrees, while items (3, 6 and 8) scored intermediate degrees. The arithmetic mean of the students' challenges domain as a whole amounted to (3.59), which corresponds to a high degree of challenge.

results related to the third question: Does the nature of the challenges related to infrastructure facing vocational education students in the Vocational Training institutions under, the Covid-19 pandemic differ according to the gender variable?

In order to answer this question, the arithmetic means and standard deviations of the infrastructure challenges facing vocational education students in the Vocational Training institutions due to the gender variable were extracted.

To show the statistical differences between the arithmetic means, t-test was used and the results are shown in Table 4.

Table 4. Arithmetic means and standard deviations and t-test results of the impact of gender on the infrastructure challenges facing vocational education students in Vocational Training institutions under the Covid-19 pandemic

	Gender	Number	Arithmetic mean	Standard deviation	t	Degrees of freedom f	Statistical significance
Infrastructure challenges	Male	652	3.51	0.712	-	238	0.659
	Female	548	3.55	0.742	0.442		

From Table 4, it is evident that there are no statistically significant differences at(0.05) that could be attributed to the gender variable in the infrastructure challenges facing vocational education students in the Vocational Training institutions

results related to the fourth question: Does the nature of the challenges related to students facing vocational education students in the Vocational Training institutions under the Covid-19 pandemic differ according to the gender variable?

In order to answer this question, the arithmetic means and standard deviations of the students' challenges facing vocational education students in the Vocational Training institutions due to the gender variable were extracted. To show the statistical differences between the arithmetic means, t-test was used and the results are shown in Table 5.

Table 5. Arithmetic means and standard deviations and t-test results of the impact of gender on the students' challenges facing vocational education students in the Vocational Training institutions under the Covid-19 pandemic

	Gender	Number	Arithmetic mean	Standard deviation	t	Degrees of freedom f	Statistical significance
Students' challenges	Male	652	3.71	0.570	0.738	238	0.461
	Female	548	3.65	0.592			

Table 5 shows that there are no statistically significant differences that could be attributed to the gender variable in the students' challenges facing vocational education students in the Vocational Training Corporation.

Discussion of Results

the results revealed that vocational education students in Vocational Training institutions face a high degree of challenges at the infrastructure level as well as at the students' level. This can be attributed to that the Covid-19 pandemic has pushed the educational institutions to adopt new education styles in order to maintain social distancing with the aim of reducing the impact of the pandemic. These new education styles have been quickly prepared in light of the rapid, wide spread of the pandemic, so that these styles were not designed in a manner that makes them suit the different situations and conditions of the students. For instance, the students faced continuous interruptions in the Internet and relied nearly completely on their mobile phones to follow up remote learning.

On the other hand, practical training requires the availability of certain materials, tools and instruments which can't be provided by remote education. This means that the acquisition of vocational skills requires the students' practicing of practical activities as a first step and mastering these skills through repetition as a second step, which can't be achieved through remote learning, where the role of the student is restricted to receiving vocational knowledge without participation in the teaching-learning process.

Furthermore, the study findings revealed that there are no statistically significant differences in the degree of faced challenges according to the gender variable, meaning that male and female students encounter the same challenges, as all of them are taught by remote education and consequently, males and females are falling under the effect of the same challenges, which led to the absence of statistically significant differences due to gender.

Recommendations

In light of the study's findings, The study recommends the following:

- 1- Improving the infrastructure of the vocational training institution in order to develop education and training.
- 2- Increase the financial support for the institution so that it can implement vocational training programs in a highly effective manner
- 3- The necessity of conducting a comprehensive review of the educational policies approved by the Vocational Training Corporation, so that these policies support the conditions for distance learning.
- 4- The necessity of providing real opportunities for vocational education by focusing on possessing and mastering the skills rather than the theoretical aspect of the targeted skills. This is because one's success in the job market depends on the practical possession of skills rather than mere theoretical knowledge.

References

- Alam, A. Challenges and Possibilities of Online Education during Covid-19 . *Preprints* 2020, 2020060013. <https://doi.org/10.20944/preprints202006.0013.v1>.
- Al-Momani, R. (2021). Traditions' Reformation and Social Change in Light of Covid-19: Jordan as a case study. *RIIFS Bulletin, The Royal Institute of Inter-Faith Studies, Amman, Jordan*.
- Mahasneh, O. (2015). Problems that face students in the specialty of pre-vocational education during the practical training. *Dirasat: Educational Sciences*, 42(1).
- Al-Twaisi, A. (2013). Proposed Solutions for the Improvement of Societal Attitudes towards Vocational Education from the Perspective of Experts in Jordan. *Dirasat: Educational Sciences*, 40(2), 1493-1510.
- Al-Zoubi, Abd. (2015). The Obstacles of Field Training from the Perspective of Class Teacher Students Who Are Training at The World Islamic Sciences and Education University. *Al-Manara Journal*, Al al-Bayt University, 22(4), 9-22.
- Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a SARS-CoV-2 coronavirus (COVID-19) pandemic in Georgia. *Pedagogical Research*, 5(4).
- Campbell, D., & Stanley, J. (1991). *Experimental and Quasi-experimental Designs for Research*. Geneva, III., Hopewell, N.J., Palo Alto, London.
- Di Pietro, G., Biagi, F., Costa, P., Karpiński, Z., & Mazza, J. (2020). *The likely impact of COVID-19 on education: Reflections based on the existing literature and recent international datasets* (Vol. 30275). Luxembourg: Publications Office of the European Union.
- Onyema, E. M., Eucheria, N. C., Obafemi, F. A., Sen, S., Atonye, F. G., Sharma, A., & Alsayed, A. O. (2020). Impact of Coronavirus pandemic on education. *Journal of education and practice*, 11(13), 108-121.
- General Organization for Vocational Training. (2019) *Annual Report*. Amman, Jordan
- Gonzalez, T., De La Rubia, M. A., Hincz, K. P., Comas-Lopez, M., Subirats, L., Fort, S., & Sacha, G. M. (2020). Influence of COVID-19 confinement on students' performance in higher education. *PloS one*, 15(10), e0239490.
- Inyiagu, E. E. (2014). Challenges facing technical and vocational education in Nigeria. *Journal of Educational Policy and Entrepreneurial Research*, 1(1), 40-45.
- Joshi, A., Vinay, M., & Bhaskar, P. (2021). Impact of coronavirus pandemic on the Indian education sector: perspectives of teachers on online teaching and assessments. *Interactive technology and smart education*, 18(2), 205-226. <https://doi.org/10.1108/ITSE-06-2020-0087>.
- Majid, U. (2018). Research fundamentals: Study design, population, and sample size. *Undergraduate research in natural and clinical science and technology journal*, 2, 1-7.
- Ndahi, H. (2020). The impact of the COVID-19 pandemic on the delivery of TVET in CARICOM Member States. *The International Labour Organization*.

- Roopa, S., & Rani, M. S. (2012). Questionnaire designing for a survey. *Journal of Indian Orthodontic Society*, 46(4_suppl1), 273-277.
- Rosen, V. (2000). *Beyond Higher Education: Access to Learning for Adults*. USA: Northeast Open College Networks.
- Shdaifat, S. A. K., Shdaifat, N. A., & Khateeb, L. A. (2020). The Reality of Using E-Learning Applications in Vocational Education Courses during COVID 19 Crisis from the Vocational Education Teachers' Perceptive in Jordan. *International Education Studies*, 13(10), 105-112.
- Sintema, E. J. (2020). Effect of COVID-19 on the performance of grade 12 students: Implications for STEM education. *EURASIA Journal of mathematics, science and technology education*, 16(7), em1851.
- Steven, P., Hui, W., & Mathew, R. (2005). The Role of Skill Standards in the Development, Implementation and Assessment of Community College Curricula. *Journal of Career and Technical Education*, 21(2), 35-50.
- Taherdoost, H. (2016). Validity and reliability of the research instrument; how to test the validation of a questionnaire/survey in a research. *How to test the validation of a questionnaire/survey in a research (August 10, 2016)*.
- Toquero, C. M. (2020). Challenges and opportunities for higher education amid the COVID-19 pandemic: The Philippine context. *Pedagogical Research*, 5(4).
- Williams, A., Becky, C. M., & Theophilus, A. T. (2018). Challenges of women in technical and vocational education: A case study of federal college of education (technical), Gusau. *International Journal of Vocational and Technical Education*, 10(1), 7-13.
- Wolff, K. (2018). Theory and practice in the 21st century engineering workplace. In *Knowledge, Curriculum, and Preparation for Work* (pp. 182-205). Brill.
- World Bank Group. (2020) *TVET Systems' Response to COVID-19: Challenges and Opportunities*.