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Obstacles to Using Practical Applications Facing Home Economics Teachers

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ABSTRACT

Vocational education programs and especially home economics education are important because they enable the practical use of the education received for daily living and future practical jobs. However, home economics teachers indeed need practical applications to be implemented in their curriculum frequently. These problems may include a lack of resources, poor training, and his or her own weak supervision in educational institutions. Ramping up efforts to overcome these barriers is important to ensuring the adequate provision of vocational education and the development of well-rounded individuals who would be able to contribute to society. Aim. This study aimed to investigate the obstacles to practical applications in education facing home economics teachers in the secondary stage in Jordan. Method. A questionnaire including (33) items was used to collect data. A descriptive-analytical method was used to analyze the data. The study sample consisted of (25) secondary school home economics teachers who teach in the Amman Education Directorate (2022/2023). Results. The study results indicated barriers to the utilization of practical applications for vocational sciences educators, with a range of (2.84-3.42). They also demonstrated no statistically significant differences ($\alpha = 0.05$) in the participants' judgements on impediments to adopting practical applications related to the "home economics branch" category. Statistically significant variations ($\alpha = 0.05$) were observed in participants' ratings of difficulties based on the "years of experience" variable, favoring teachers with less than five years of experience. In response to these findings, the study advised the Jordanian Ministry of Education to conduct training courses for home economics educators, as well as workshops and instructional sessions on workshop management. Scientific Novelty. The scientific originality of this study is the fact that the scientific research emphasizes the specific context of Jordanian home economics teachers and the specific contradictions of them in implementing practical applications in their curriculum. By focusing on the challenges these teachers encounter in the secondary phase in Jordan, the paper identifies the opportunities to foster the vocational education quality improvement in the region. In addition, the results of the survey on the effects of the number of years the teacher has spent in jobs concerning teaching, and of the effects of the study branch on ware, suggest that there are crossroads in drawing educational policies and projects of professional development that fit the Jordan educators' requirements. Practical Significance. The relevance of the study is a contribution to permissible educational policies and practices in Jordan, where they could understand the barriers to teaching home economics. These findings can be used to guide specific intervention strategies, such as allocating resources, providing specific training, and increasing institutional support. Moreover, the findings of the study can help a professional development program, which can be designed as per the requirements of teachers, to enhance the quality of vocational education and effective human resource development in the nation for better social and economic development of the country.

Keywords: Home economics, Practical applications, Secondary school, Vocational sciences teachers.

INTRODUCTION

Vocational education (VE) is one of the primary contemporary educational sciences, as it has an essential role in the development of human resources (Lund & Karlsen, 2020). A qualified workforce can be prepared to deal with modern technology through VE through intensive workforce planning programs that align with contemporary society's demands and needs (Minton & Lowe, 2019). These programs are integral to the comprehensive development programs that must be addressed, as other development programs rely on them. Given that the educational system views these programs as a process with integrated parts and interacting elements that affect each other, then history, politics, administration, and other elements of this educational and vocational system can increase its efficiency in terms of approach, objectives, application, and evaluation whenever possible.

Numerous countries, especially the developed ones, have focused on vocational education because of its critical role in the production of human resources who are agile in coping with accelerated developments and changes impacting the labour market and its multifarious professional needs and changing skill sets. Consequently, these nations have made significant reforms to vocational education by integrating vocational and technical education at the secondary level and linking it to higher education (Persson Thunqvist et al., 2019). They linked them with labour market demands and guaranteed their correspondence with changes in science and culture, social movements, and economic situations (Danaa, 2018).

Al-Haija and Mahamid (2021) emphasized the need for educational systems to identify and guide individuals towards roles that align with their qualifications, leveraging the most recent twenty-first-century developments. Therefore, the educational curricula must be updated and modified to effectively transfer knowledge and embody it in the service of the individual and society, thereby developing their competencies and enabling them to adapt to reality. Al-Haija and Mahamid (2021) asserted that education should focus on learning through manual work. They stressed the need to establish manual work in schools to achieve the principle of integrated growth of the individual. Facing future challenges can only take place with an individual of a new mentality that is capable of proper planning and predicting changes in the future, making appropriate decisions, dealing with advanced technologies, and acquiring appropriate human relations capable of dealing with others with transparency that elevates an individual to the vastness of the world in a world of genuine research and knowledge (Zhao & Ko, 2018).

Vocational education and training in the twenty-first century have emerged as a societal and civic need. This form of schooling is recognized for founding numerous affluent ancient human civilizations (Sun & Kang, 2015). Nevertheless, the prevailing perception of this education in numerous developing nations remains constrained due to insufficient attempts to enhance it both academically and practically. Consequently, this matter necessitates reevaluation at both political and economic tiers, particularly regarding the ongoing reliance on external entities (Ahmed & Al-Saeeda, 2012).

At the local level, Jordan has initiated a period characterized by swift transformations in response to the demands of an evolving society, accompanied by a novel educational vision aimed at establishing a forward-looking educational system that fosters creativity and innovation among its populace. Jordan has endeavored to enhance education and training programs to ensure their outputs align more effectively with the current labor market's needs, particularly in vocational and technical education curricula. These curricula emphasize the integration of theory and practice, providing students with the opportunity to engage with real-world situations and meet the needs of the labor market. Furthermore, the Hashemite Kingdom of Jordan is keen to promote vocational education (VE) because Article (4) of the Education Law states that the objective of the education system is "to satisfy manpower needs and promote self-reliance by means of the acquisition of the general and specific vocational skills" (Eyadat, 2003).

Lund and Karlsen (2020) posited that the significance of technical education and vocational training is escalating due to global transformations and swift technological advancements, which necessitate continual adaptation of educational systems. This evolution demands appropriate measures to enhance technical education and vocational training, ensuring alignment with contemporary scientific progress to produce skilled workers adept at engaging with modern technology. Furthermore, governments must ensure a balance between the outcomes of technical and vocational education and the actual demands of the labor market. Researchers concentrated on the necessity for a highly qualified workforce that aligns with international standards to satisfy the demands of labor markets both locally and globally.

Our societies urgently need young laborers with the ability to work and possess creative capabilities, which entails attending various training programs related to production needs and forming partnerships with establishments. There should be genuine efforts to develop technical and VE training programs to better align their outputs with the labor market's needs and requirements (Muyia et al., 2018). Consequently, it is necessary to rely on a base of information and skills consistent with the corresponding international levels and in accordance with the needs of the different labor markets and the development plans set by the Jordanian government and

institutions; This requires more comprehensive and market-friendly curricula, higher quality of students entering technical and vocational education and training (TVET), better teachers and trainers, and better learning processes. This also requires defining qualification standards, monitoring and evaluation, and defining the educational content of training programs to ensure continuous adaptation of programs that align with modern technological developments, enhancing the necessary skills and reaching beyond the specific skills (Al-Zaidiyeen et al., 2010).

As seen by Eyadat (2003), teaching practical applications is considered a means to achieve students' educational goals. The goal of skill education for the learner is to benefit from the skills in their public and private life. Educators pointed out that the objectives of education are based on practical skills, including improving the social and psychological life and developing the learners' characteristics through cooperation with others while working in one team, providing them with modern technologies, information, and experiences related to managing daily life situations, developing thinking skills, decision-making skills and problem-solving, providing positive practical and social attitudes and skills that will reflect positively on society (Al-Zaidiyeen et al., 2010).

Mafumiko (2006) pointed out that the effectiveness of practical applications should be wisely designed, with the supervision and support of specialists, so that students can gain a deep understanding, procedural knowledge, and the ability to investigate knowledge. Harris and Bruin (2017) added to this the use of critical thinking and creativity. Triadafillidis (1996) stated that practical applications prepare students for political life through interaction, dialogue, and teamwork. Therefore, the researcher advised schools to involve students in activities and experiences that reveal their actual capabilities and prepare them for political life. He also advised teachers to shift from being a supreme authority and store of knowledge to being high models for students. As such, Scott et al. (2006) explained that increasing communication between learners and teachers in more than one situation, inside and outside the classroom context, increases the effectiveness of the learning and teaching process.

Odom et al. (2007) pointed out that primary school students have positive attitudes and interest toward science, but in secondary levels, they tend to lose this interest and direction; for that reason, education and sciences must be transformed into a discovery to increase students' enjoyment. Therefore, Triadafillidis (1996) looked at practical applications as the key to this, and it is possible to use these applications as an activity to spread fun and suspense. Odom et al. (2007) added that teaching sciences should be shifted from what is essential from the scientist's or teacher's point of view to what is essential from the student's point of view.

Odom et al.'s (2007) study investigated the relationship between some teaching methods, students' attitudes in the middle stages, and their science achievement. The study revealed that education is centered on the student. The researchers stated that "doing group experiments, giving explanations to an answer, solving problems, supporting the student's answer with external information, repeating experiments to ensure the validity of the results, or answering questions that are likely to have more than one answer" increase students' achievement in sciences. They found that doing group experiments several times a week instead of once a week, for example, increases student achievement by 9%. Conversely, exposing students to teacher-centered teaching methods they define as "teacher's presentations, writing notes behind the teacher, distributing subject summaries, or traditional classroom assignments," impairs students' achievement. Students' attitudes toward sciences can be improved through student-centered instruction and a decline in "teacher-centered teaching" methods. Their study confirmed that banking education might provide a few opportunities to build knowledge, develop concepts, and understand the processes of science.

Despite the importance of practical applications and the likelihood of their application, there are obstacles to employing them, among which are, as revealed by Mafumiko's (2006) study, the lack of laboratories, the implementation of activities automatically without thinking, giving students the correct answer directly without manipulation to reach it, the loss of the final discussion, the scarcity of materials and equipment, and tight budget along with the teachers' inefficiency in terms of knowledge and skills which cause not to use practical applications or not to use them properly. Klainin (1988) added to this other obstacles, such as time, safety, students' participation, and the need for more value for practical applications among students, teachers, and curriculum developers.

To facilitate the integration of educational and professional spheres, thereby enhancing engagement in the formulation of economic development strategies and cultivating a proficient workforce adept in contemporary knowledge and technologies, the educational and vocational sectors have diversified their objectives to align with labour market demands. Consequently, the curricula derived from the modular framework have been revised. Integrated education and training can be cultivated through applications that encompass technical, theoretical knowledge, and practical training to attain sufficient capabilities aligned with educational objectives. The primary objective is to cultivate positive attitudes among learners towards manual labour and to foster respect and appreciation for workers in this domain, equipping learners with practical and applied skills that yield social and economic benefits, while enhancing their practical sensibility and problem-solving capabilities (Ministry of Education, 2010).

To achieve the intended educational goals, the Ministry of Education in Jordan has continuously developed curricula focusing on VE from the basic stage to the second stage in the different branches of VE (Al-Zaidiyeen et al., 2010). This falls within the responsibility of the Department of Vocational Education and Production in the Ministry of Education. The department prepares plans and curricula for the study of VE and its various branches. It also supervises the workshops existing in vocational schools for the branches of VE, especially home economics (Ministry of Education, 2012). The Workshops Equipment Department, established in 2000, provides all the necessary tools and equipment for vocational workshops. This support enhances VE and skills, thereby improving practical training levels and facilitating the application of various training programs through continuous updates. The Department of Vocational Safety and Security was created in order to provide a safe, secure, and low-risk training environment as much as possible in order to protect students and teachers; as a consequence, the equipment has been updated in the various disciplines of home economics (cosmetic, clothing production, food processing). The Workshop Equipment Department has several duties, such as

1. Provide vocational workshops with the best possible equipment, tools, and apparatuses for various specializations, and continuously update features and specifications to implement effective training programs.
2. Prepare the technical specifications for the apparatuses and equipment needed by the various workshops.
3. Participate in studying the bids for supplies and equipment needed by the various vocational workshops.
4. Participating in the preparation of requirements for future projects and expansions, whether in vocational schools or professional disciplines, in cooperation with various departments (Ministry of Education, 2010)
5. Working on scientific, practical, and technical activities in vocational workshops to enhance scientific and practical ability

Activating knowledge with work helps thinking, problem-solving, research, and investigation. The learners' participation in vocational workshops to apply what they have learned gives them experience and a deeper understanding of what they have learned, whereby they retain the information for a more extended period (Eyadat, 2003). The existence of vocational workshops in schools depends not only on obtaining information, practicing measurement skills, recording and analyzing data, but also on allowing for inference and interpretation. Instead, the workshops' role extends beyond developing students' abilities to utilize manual, academic, and social skills, thanks to the constant movement within the workshop and the interaction between students and teachers (Teacher's Message, 2012). Therefore, this study revealed the obstacles to using practical applications in education for female teachers of vocational sciences, specifically the home economics branch of the secondary stage, in the capital of Jordan, Amman.

Problem Statement

A noticeable weakness is observed among female students of the home economics branch of the secondary stage and female students who joined the university with applied specializations from the same branches of home economics (Eyadat, 2003). The researcher found that female students face specific challenges and need to improve in implementing practical applications. Sometimes they use them at a low level of proficiency or incorrectly. This research aims at explicating the practice of the science vocational curriculum of the home economics specialization branches, implementation sites in branches, secondary workshops preparation for vocational practices, and participation of teachers of vocational specialization in workshops, considered to be practical aims of the study process in Jordan. These events reflect the practical usage of competences that are advanced by the modern education for the educational process, as well as the development of applied skills by students. Taking into consideration the characteristics of the vocational science curriculum in terms of its focus on practical applications, the need for implementation of the applications by a skilled teacher, and the need for sufficient time for students to implement and train the applications in order to reach the required levels of proficiency, potential problems may arise that impede training in the application of skills.

Research on vocational education in Jordan has indicated challenges that hinder curriculum implementation and limit emphasis on practical application (e.g., Al-Hadidi, 1994; Eyadat, 2003). However, these studies predominantly relied on teachers' perceptions and consequently failed to identify specific reasons for the insufficient focus on practical application. This study aims to examine the extent to which teachers in the vocational specialization of home economics emphasise practical applications in the instruction of vocational sciences, given that the attainment of the vocational science curriculum objectives relies on training students in practical applications. The components involved are the attributes of the teacher and the educational institution where instruction occurs.

Research Questions

In light of the problem discussed earlier, this study attempted to answer the following questions:

1. What are the obstacles to using practical applications in education for female teachers of vocational sciences in the home economics branch of the second stage in the capital of Jordan, Amman?
2. Are there statistically significant differences at the significance level ($\alpha = 0.05$) in the use of practical applications in education among female teachers of vocational sciences in home economics branches of the second stage in the capital Amman due to the variables of "number of years of experience" and "home economics branch"?

Significance of the Study

The study gains its theoretical importance from introducing the topic of vocational sciences in the secondary education stage and the necessity for female learners to practice various manual and applied vocational activities. This links theoretical concepts with practical application, manual training, and scientific knowledge. The theoretical importance of the study also stems from the importance of guiding female students in secondary education, developing their tendencies to choose a future profession through their interaction with various technologies, training in self-related practical activities, encouraging them to work in manual professions, and qualifying them to work in these professions that society needs.

The study addresses contemporary educational trends advocated by Arab and international organizations focused on educational matters. This illustrates the degree to which practical applications are implemented in the educational process as stipulated by the Education Law and the extent to which female students learn practical skills for real-world application to enhance their proficiency.

The study also gains importance as it provides a clear vision of the obstacles to using practical applications in education for female teachers of vocational sciences, specifically in the home economics branch, during the second stage in Amman.

The researcher asserts that this study is the inaugural investigation in the Hashemite Kingdom of Jordan regarding the teaching of vocational sciences, explicitly focusing on practical applications in workshops, thereby conferring significant importance to the research.

Those responsible for building and developing curricula will benefit from this study. This study will also provide information and data for those concerned with teaching practical vocational applications to activate and improve their performance for follow-up, planning, and attempting to highlight problems that teachers face while applying practical lessons.

Hypotheses of the Study

Since the current study includes multiple factors that may affect the internal validity of the results of the study, these hypotheses were developed:

1. It is assumed that the vocational science curriculum, with its branches in the home economics specialization, contains unified skills, how to train students on them, and the place of training in them is the workshops of home economics branches.
2. The schools of Amman Governorate are similar in terms of the potential and the material facilities provided to the vocational workshops, so it is assumed that such conditions are similar in all the schools' workshops for applying practical skills in the governorate.

Limitations of the Study

The following elements determine the study:

- The selected sample of teachers is a purposive sample from the schools within the Capital Governorate districts of Amman.
- The study tool is a questionnaire designed to assess the level of practical application utilisation and the challenges hindering their effective implementation in instruction by female home economics educators.
- This study was limited to female teachers who study vocational sciences in the significant branches of home economics (food processing, clothing production, cosmetics).
- *Spatial boundaries*: This study was conducted in secondary schools in the capital of Jordan, Amman.
- *Human limits***:** The study was applied to vocational science teachers majoring in home economics in its three branches at the secondary stage in the capital, Amman.

REVIEW OF RELATED LITERATURE

Sarigoz's (2022) study aimed to identify the challenges that vocational educators are experiencing when they are educating in the field. To get the information as required for the study, a semi-structured interview question form was used. This qualitative research sought to obtain from educators some views on challenges in delivering vocational training. The research approach was to use the case study approach, which is a popular one among qualitative researchers. The research data were coded by using the content analysis method and then analyzed. Thirty teachers working in the vocational section of the state vocational high schools in the central districts of the Hatay province in the 2020-2021 school year were voluntarily selected to be in the research group. Of these teachers, 21 are men and 9 of them are women. One of the answers presented by the research indicates that, although some students will come away from the vocational education programs with at least some of the skills needed to succeed in the business world, students may turn out to be unable -- due to cognitive, affective, and psychomotor factors -- to adapt to the discipline involved in the workplace, and that these problems may be further complicated during internship training. Furthermore, the results indicate that students should be selected for issues of admissibility to vocational education institutions based on aptitude examinations as well as a broader perspective on the manifestation of practical training.

As Suhaimi & Nasir (2021) stated, in the write-up of the review study, there is a need to comprehend the problems and challenges related to Technical and Vocational Education and Training (TVET) programs in light of the present COVID-19 pandemic. The search results from SCOPUS, WOS, and ERIC databases are selected based on their relevance to the problems and solutions of technical and vocational education institutions under the epidemic conditions. The COVID-19 pandemic is posing several challenges to TVET, such as access to the Internet, learning platforms, curricula content, methods of assessment, teachers' preparation for e-learning, and students' readiness. The findings indicated that insufficient student motivation and career advice, low prestige associated with TVET education, varying instructor competency, and inadequate infrastructural resources have consistently hindered TVET education throughout the years.

Al-Khazaleh's (2019) study was aimed at evaluating the impact of community colleges on the enhancement of vocational education importance as perceived by the faculty members. The method adopted by the researcher was descriptive in order to achieve the aims of the study. The data collection tool, a questionnaire, was developed after the confirmation of the validity and reliability of the instrument. The study sample was faculty members of various academic levels at community institutions who were selected using a simple random sampling technique. One hundred members were selected. The result of this survey was that faculty members see the contribution of the community colleges to increasing the importance of vocational education as limited.

However, what are the special needs for vocational training for the digital age? Köhler & Drummer's (2018) study first covered the aspect of the importance of instructional design strategies, keeping in mind the style of each learner. In addition to presenting several of the most essential ideas, the author also attempts to recognize several theoretical methodologies that provide a bigger context. The instrumental conflict can be considered a very precious theoretical structure as it can extend the instrumental genesis theory into the setup of ICT (Information and Communication Technology) facilitated learning environments. Moreover, the idea of didactic design incorporated into the newest advances in information technology explains the structures and processes of online education. It improves understanding of the interaction between expert pedagogical practice and individual behavior in online learning. Both methodologies can be used to study the synergies of a particular educational approach with current technology hardware. The final section of this book outlines the subsequent chapters and sections, clarifying their relevance about technical vocational education and training (TVET). It also provides the logic for the authors to choose a design-oriented approach to research as the best way to explore the challenges of a rapidly evolving field beyond Central Asia.

Danaa's (2018) study sought to determine the barriers to the effective utilization of the fashion maker from the perspective of home economics educators at the secondary level in Jordan, as well as the degree to which practical skills are implemented in the educational process. It also sought to examine how pupils had concretely developed these skills in practice. The study sample comprised thirty secondary school instructors from the Directorate of Education Schools in Amman. A questionnaire of 14 items was employed to gather data for the study's aims. The study results indicated that the challenges to implementing the practical skills of vocational science teachers in the home economics sector, particularly in apparel production specialization for the second stage, had intensified. The results indicated multiple challenges, including a substantial student population in the class, with a mean score of 1.6, and an inadequate supply of equipment appropriate for the number of pupils, with a mean score of 1.3, both rated at a high degree. Furthermore, it indicated a necessity for additional time for practical application, with an arithmetic mean of 1.3, at a significant level.

Farraj's (2017) study aimed to identify the requirements for the application of vocational learning societies in Al-Azhar institutes from the point of view of teachers. To achieve the objectives of the study, a descriptive

approach was used by distributing a questionnaire to a sample consisting of (702) teachers, of whom (411) teachers belong to regular institutes, at a rate of 58.5%, (196) teachers belong to model institutes, at a rate of 28%, and (95) teachers belong to private institutes with a rate of 13.5%. The study results showed that the application requirements fall under six domains: vision formulation, supportive leadership, intended collective learning, supportive conditions, mutual personal practices, and focus on learning.

Ahmed and Al-Saeeda (2012) examined the emphasis on practical skills in vocational education instruction within schools in Al-Balqa Governorate, Jordan, and its correlation with variables including teacher specialization, school gender, employer status, and student enrolment in the fifth, sixth, and seventh grades. The researcher conducted observations of 70 class sessions using an observation checklist and interviewed 25 teachers. The instruments' authenticity was verified by presenting them to a panel of arbitrators. The watch list's stability was validated through the observation of multiple class sessions and the assurance of their compatibility. The study revealed that the emphasis on practical abilities was 74.7% when using the observation checklist, compared to 76% when using the interview method. It was determined that 71.1% of educators dedicated less than 75% of the subject's duration to skill practice. The results indicated statistically significant differences at the $\alpha = 0.05$ level in the emphasis on practical skills in teaching VE, favoring female students, and regarding teacher specialization, favoring VE over academic specialization. The results did not reveal statistically significant changes due to the class size or workshop status.

The study conducted by Al-Ghawanimeh (2008) aimed to investigate the attitudes of science educators of grades five to twelve in Palestinian public schools of Jerusalem and Ramallah governorates towards the application of practical activity in education and its pedagogical implementation, and also the relationship of such attitudes with some characteristics. The defined experimental procedure method was used. The sample group of the study was 283 male and female teachers. Two questionnaires were created, and a personal interview was also developed as an additional method in order to address specific questions of the study. The results of the study showed that there are impediments that affect the implementation of practical applications in science teaching, including material, lack of equipment, and laboratory materials, and a lack of laboratories. Numerous human impediments existed, encompassing curriculum-related issues, time limitations, student-related difficulties, and teacher-related hurdles. Additionally, there were several impediments and hurdles associated with regulations and legislation, along with the necessity for laboratory technicians.

Eyadat's (2003) study aimed to determine the skill training needs of VE teachers from the point of view of teachers and supervisors in the Irbid Governorate. The study sample consisted of (180) male and female teachers and (12) supervisors of VE. A questionnaire included five fields: industrial, agricultural, commercial, public health and safety, and home economics. The study results showed that the commercial field came. First, the industrial field was ranked second, the home sciences field third, the public health and safety field fourth, and the agricultural field fifth in their skill training needs. Significantly, the need for practical skill training in all areas was high.

In conclusion, the results of previous studies performed regarding the significance of the use and training process reveal that several difficulties regarding the real application were identified among students, who had not received appropriate attention in many subjects. The challenges are caused by the shortage of equipment and devices that hinder the learning objectives, along with the inadequate opportunities for transferring knowledge, which are necessary conditions for fostering the students' development of abilities (Danaa, 2018).

The major drawback to 'achieving the objectives of science education in the practice of a science education' is related to student aspects and the methods of implementing these applications (e.g., Al-Ghawanimeh, 2008). Studies show that there are many barriers to the implementation of practical applications for science education. This includes material limitations such as insufficient equipment and laboratory resources; human resources related to the curriculum and time constraints; issues associated with students; issues directly related to the educators; regulatory and legislative limitations; and a shortage of laboratory technicians. This study aims to explain the obstacles faced by female vocational science educators in the home economics of the second stage, around the conclusion of effective execution of the practical application in education.

METHODS

The present study employed a descriptive methodology. It utilized books, web resources, references, and empirical studies from peer-reviewed scientific publications to analyze the data. The analytical field research involved collecting data through a questionnaire designed to address the study's questions.

Study Population

The population was composed of all those female vocational sciences teachers of home economics for the second stage of education (10th, 11th) of the female vocational schools of government educational comprehensive schools

belonging to the first, second, and third education directorates in Amman, Jordan, in the second semester of the 2020/2021 academic year.

The Study Sample

The sample was three sets of 30 female vocational science teachers teaching subject contents in secondary schools in first and second classes in schools under the control of the Director of Education in the city. The sample was carefully selected from schools that would be conveniently accessible to the researcher. The researcher confirmed the similarities in the schools about the infrastructure, the organizational environment, and other contextual factors, except for the characteristics of teaching staff. Table 1 shows the frequencies and percentages of the demographic characteristics of the study.

Table 1. Distribution of the Sample Members according to Demographic Variables

Variable	Category	Frequency	Percentage %
Home Economics Branch	food manufacturing	8	26.7
	clothes production	8	26.7
	cosmetic	14	46.7
Years of Experience	5 years or less	19	63.3
	5 - less than 15 years	11	36.7
	15 years and over	0	0

Study Tool

A questionnaire was created to identify the challenges associated with the effective utilization of fashion workshops, informed by many relevant studies and the systematic organization of the items in their final format. The questionnaire items were constructed using a five-point Likert scale: "strongly agree, agree, disagree, strongly disagree," corresponding to the values (5, 4, 3, 2, 1) accordingly.

The researchers assigned a value of 1 to the "strongly disagree" response, resulting in a relative weight of 20%, which corresponds to this reaction. Furthermore, to ascertain the reaction level (weak, medium, high), the range between the maximum and minimum values was calculated (maximum value - minimum value = 4). The three levels were established at (4/3), resulting in a category length of (1.33). Consequently, the first category is (2.33), the second category is (2.34-3.67), and the third category encompasses (3.68 and above). The arithmetic mean values that were analyzed are as follows:

- If the arithmetic mean value of the item is (2.33 or less), the response level to the teachers is considered weak.
- If the arithmetic mean value for the item is (2.34-3.67), the response level for secondary school vocational science teachers is considered medium.
- If the arithmetic mean value of the item is (3.68 and above), the response level for secondary school vocational science teachers is considered high.

Validity of the Tool

To ascertain the validity of the questionnaire, which evaluates the performance level for the practical application of educational practices among female vocational science teachers in the home economics sector at the secondary level, it was submitted to seven educationally specialized arbitrators from Al-Balqa Applied University. These arbitrators expressed their willingness and interest in assessing the tool to determine the relevance of the items to the study's subject (referred to as the arbitrators' credibility). Numerous revisions were implemented, particularly addressing linguistic and grammatical corrections and altering the placement of some things.

Tool Stability

The researchers evaluated the internal consistency of the study instrument's items by computing the Cronbach alpha coefficient. The Cronbach alpha approach relies on the consistency of an individual's performance across different items. It denotes the intensity of the connection and unity among the elements on the scale. Moreover, the alpha coefficient offers a reliable assessment of the instrument's stability. While there are no established guidelines for the acceptable values of the Cronbach alpha coefficient, a threshold of alpha >= 0.60 is deemed acceptable in management and humanities research, as illustrated in Table 3.

Table 3. Internal Consistency Coefficients for the Domains of the Study Tool

Dimension	Reliability of Internal Consistency	No. Of Items
Obstacles related to students	0.70	12
Obstacles related to teachers	0.79	9
Obstacles related to the workshop and equipment	0.77	12
The scale as a whole	0.98	33

Table 3 provides a breakdown of the internal consistency coefficients for the scale as run from the survey sample data. The Cronbach's alpha coefficient for the total scale was 0.98. The Cronbach's alpha coefficients of internal consistency values in the sub-domains and the total scale were between 0.70 and 0.77.

Study Procedures

In order to achieve the objectives of the study, the following steps have been taken:

1. Identify the questions that the study has sought to address.
2. Citing the theoretical literature and prior credible research pertinent to the study's topic
3. Attend the Directorate of Education in Amman to obtain detailed information regarding the study, visit the Department of Educational Supervision, and interview with a supervisor to examine the challenges teachers encounter in executing practical applications.
4. Identify the study population of vocational science instructors in secondary government schools associated with Amman's Directorate of Education.
5. Identify the sample participants from the secondary school vocational science teachers within the research population who were instructing during the second semester of the 2020/2021 academic year.
6. Formulating and designing a questionnaire for female educators that assesses the challenges of effectively implementing practical applications in the teaching process for female teachers in vocational sciences, specifically within the home economics sector of secondary education.
7. Evaluate the questionnaire and implement requisite modifications based on the feedback provided by the arbitrators.
8. Engage extensively with the sample participants and the researcher, as the sample was deliberately selected from individuals who showed willingness and eagerness to respond to the questionnaire items.
9. Securing the authorization and consent of the Directorate of Education and the School Principal at the respective schools included in the study.
10. Conduct interviews with the teachers (sample of the study) who participated in responding to the questionnaire items and questions.
11. Gather the questionnaires and input their findings into the SPSS software for statistical analysis.
12. Administer the questionnaires to the sample members from February 14, 2021, to March 28, 2021, for the actual implementation with the designated sample population.
13. Utilize computer software to calculate the arithmetic mean, standard deviation, and relative importance, and conduct a 2-WAY ANOVA without interactions study to assess the performance level of secondary school vocational science instructors.

Statistical Design and Processing

This research was aimed at finding out the barriers hindering the proper implementation of practical applications for home economics workshops, specifically in the fashion design subject domain, for secondary school teachers. According to the tables for the study design, the sample size was determined to be 25 female teachers. The study used descriptive statistics such as means, standard deviations, and standard errors to solve the research problems. The research questions were: What are the obstacles towards the effective use of practical applications of vocational science in teaching female secondary-level home economics students? Do you find statistically significant differences at the level of significance (= 0.05) in the use of practical educational methods among vocational science teacher females teaching the home economics stream among the secondary level teachers in Amman according to the variables of years of experience?

FINDINGS AND DISCUSSION

This section presents and discusses the results of the study according to the research questions as follows:

Obstacles to the use of practical applications in education for female vocational science teachers

To answer this question, the means and standard deviations of the obstacles to using practical applications in education were calculated, as shown in Table 4.

Table 4. Obstacles to Practical Applications in Education for Female Teachers

No.	Domain	SMA	SD	Rank	Degree
1	Obstacles related to students	3.03	.56	2	medium
2	Obstacles related to teachers	2.84	.75	3	medium
3	Obstacles related to the workshops and equipment	3.42	.56	1	medium
	The tool as a whole	3.09	.34	---	medium

As a result of the findings of the study, the averages were between 2.84 and 3.42, which showed a more or less moderate level. The domain concerning issues related to the workshop and equipment had the highest ranking with a mean of 3.42 and a standard deviation of 0.56, indicating a moderate level of difficulty. The domain of difficulty that concerns female students was the second, with an arithmetic mean of 3.03 and a standard deviation of 0.56, suggesting a moderate level. In contrast, the category of problems with teachers was the lowest, with a mean of 2.84 and a standard deviation of 0.75, which showed a relatively low level. The overall arithmetic mean score of the scale was 3.09 with a standard deviation of 0.34, which indicates a moderate amount of variance.

The results indicate that there are impediments to the implementation of practical applications in education for instructors of vocational sciences in the home economics sector at the secondary level in Amman. The results may be attributed to the lack of training and qualifications among female home economics teachers in workshop management and student supervision, which hinders their ability to enhance the proficiency of female educators and support them in overcoming challenges during the teaching process. Consequently, greater emphasis should be placed on vocational sciences and the organization of follow-up sessions for home economics educators, particularly at the secondary level, as it serves as the foundational stage for future careers.

For a better understanding of the barriers faced by female vocational science teachers in the domain of home economics at the secondary level in Amman, the mean and standard deviation of the study sample scores were carefully calculated in each of the study domains. This paper reports on the findings.

Obstacles Related to Female Students

Means, standard deviations, and ranks were calculated for the item "obstacles related to female students," as shown in Table 5.

Table 5: Obstacles Related to the Female Students Items Arranged in Descending Order

No.	Domain	SMA	SD	Rank	Degree
6	Students can perform the skills collectively	4.16	0.746	1	High
7	Each student can perform the skill individually	3.88	1.092	2	High
5	The student needs to repeat the skill several times to master it	3.6	0.764	3	medium
4	The student's ability to absorb the skill from the first time	3.48	1.159	4	medium
10	Students are concerned about the teacher's evaluation while practicing the skill	3.36	1.036	5	medium
8	Students follow the steps of practical applications automatically without thinking	3.32	1.145	6	medium
1	The achievement of the tenth-grade student is low	2.72	1.308	7	medium
3	The student's disregard for practical applications (not taken seriously) is noticeable	2.68	1.701	8	medium
9	Difficulty in controlling students during practical applications	2.64	1.114	9	medium
2	There is a weakness in the student's reading and writing in general	2.28	1.1	10	low
11	There is no discussion before starting to implement practical applications	2.2	1.384	11	low

12	There is no concluding discussion when practical applications are completed	2.04	1.098	12	low
	Domain as a whole	3.03	.56	--	medium

The means, standard deviations, and rank of all the items that discuss the challenges faced by the female students are shown in Table 5, with means ranging from 2.04 to 4.16. On the other hand, item (6), indicating that 'learner(s) show ability to apply skills collaboratively,' was ranked highest with an arithmetic mean and an arithmetic standard deviation of 4.16 with 0.746, implying a relatively significant level of importance. Besides, No. (12) was the last ranked one and means that "there is no conclusive discussion at the end of the practical applications," with an arithmetic mean of 2.04 and a standard deviation of 1.098, which clearly shows a relatively high level of vulnerability. The arithmetic mean in the domain was 3.03 with a standard deviation of 0.56, indicating moderate levels of variability. This result shows how ambitious and aware the student is about the importance of doing. The result could be attributed to the absence of practice where female students can be provided with practical training to be competent in home management. The lack of student engagement and their ability to successfully participate in discourse and in teams is reflected in their learning outcomes. The absenteeism of students in various activities and experiences hurts their results in practical applications and learning. This finding confirms Triadafillidis' (1996) result, which indicated that practical applications are the solution, as they can be used as activities to spread fun and suspense. Consequently, knowledge should transition from being deemed vital by the scientist or educator to what is significant from the student's perspective. This outcome aligns with the findings of the National Centre for Human Resources Development in Jordan (2002), which indicated that students from the Ministry of Education exhibited an average proficiency in vocational sciences and employment, while their performance was subpar. This deficiency is ascribed to the inadequacy of candidates in applying vocational knowledge derived from theoretical competencies and insufficient time allocated to develop practical skills necessary for achieving the desired performance level.

Obstacles Related to Teachers

Means, standard deviations, and ranks were calculated for the items "obstacles related to teachers," as displayed in Table 6.

Table 6. Obstacles Related to the "Teachers" Items Arranged in Descending Order

No.	Domain	SMA	SD	Rank	Degree
8	The presence of an assistant organizing the workshops' work and preparing it for the lesson and practical applications has an important role	3.92	1.115	1	High
9	I find enough time to supervise students when they practice practical applications	3.48	1.046	2	medium
3	The lack of training courses for teachers to use different practical applications	3.12	1.333	3	medium
4	The inability of the teacher to change the teaching methods and strategies	3	1.291	4	medium
5	The lack of criteria for evaluating female students during the implementation of practical applications	2.56	1.121	5	medium
7	The teacher's heavy loads and her inability to match the requirements of teaching theory with the requirements of practical applications	2.52	1.388	6	medium
6	The inability of the teacher to use some tools and equipment during practical applications	2.44	1.083	7	medium
2	The teacher feels that she does not have the necessary skills to employ practical applications	2.28	1.37	8	medium
1	The inefficiency of pre-service and in-service teacher education	2.24	1.128	9	medium
	Domain as a whole	2.84	.75	--	medium

Table 6 lists the means, SDs, and ranks of items related to inhibitors related to instructors, ranging from 2.24 to 3.92. Item (8), which asserts that "the presence of an assistant organising the workshop and preparing it for the lesson and practical applications is crucial", obtained the highest ranking with an arithmetic mean of 3.92 and a standard deviation of 1.15, which shows that the presence of the assistant is significant. In contrast, item (1), which claims "inefficiency of pre-service and in-service teacher education," got the lowest ranking with an arithmetic

mean of 2.24 and a predictor of standard deviation of 1.128, which shows the importance of the middle level. The arithmetic mean for the domain was 2.84, with a standard deviation of 0.75, indicating a moderate level of variance. This result may be attributed to the teachers' need for more awareness of the importance of using practical applications and their reflection on clarifying scientific concepts. Thus, it is reflected in the student's level, as evidenced by the approval of most teachers on item (2), which states, "The teacher feels that she does not possess the skills necessary to employ practical applications ."This indicates that vocational science teachers might not be qualified for the requirements of the present time, so they sometimes do not realize the importance of scientific applications, especially in employing knowledge, critical thinking, and developing students' creativity to match what is taught that the local community requires. The teachers' lack of willingness, knowledge, and skills hinders the effective use of practical applications in achieving the intended goals. The primary determinant influencing classroom practice is the educator. The efficacy of these applications necessitates a substantial level of expertise and a readiness to assume responsibility from the educator. The result agrees with the result of research done by Al-Ghawanimah (2008) that some obstacles interfere with the application in practice of the scientific education, specifically for the educators.

Obstacles Related to the Workshop and Equipment

Means, standard deviations, and ranks were calculated for the items "obstacles related to the workshop and equipment," as displayed in Table 7.

Table 7. Workshop and Equipment-Related Obstacles Items Arranged in Descending Order

No.	Domain	SMA	SD	Rank	Degree
7	The workshop is prepared in advance of class time to facilitate the demonstration process.	3.76	1.128	1	High
12	Equipment is invested in the workshop with high efficiency.	3.76	1.091	2	High
2	Vocational safety and security are available at the school	3.68	1.145	3	High
8	The teacher organizes the classroom environment (the workshop) to be attractive for learning.	3.68	1.03	4	High
10	The equipment is not enough for all the students in the workshop to be trained on it	3.52	1.085	5	medium
11	The time is enough to practice the skill on the part of the teacher and train the students in it	3.48	1.046	6	medium
3	The equipment in the workshop conforms to the applicable curricula	3.44	0.768	7	medium
4	The equipment required to practice the single skill entirely is often available	3.4	1.225	8	medium
6	The lesson is always displayed in the workshop.	3.36	0.995	9	medium
1	The equipment in the school corresponds to that available in the labor market	3.24	0.831		medium
9	The workshop can accommodate large numbers of students	3.16	1.248		medium
5	The equipment in the workshop is being modernized to match the rapid technological developments	2.56	0.961		medium
	Domain as a whole	3.42	.56	--	medium

Table 7 shows the results of means, standard deviations, and ranking of items on the difficulties with respect to the workshop and equipment, with means that vary from 2.56 to 3.76. The last one, which says, "The workshop is ready prior to the class time for the explanation process," received the highest ranking with an arithmetic mean of 3.76 and a standard deviation of 1.128, indicating the importance of the power. Finally, the fifth sentence says, "The equipment of the workshop is being modernized to correspond to the fast-technological developments," with a mean of 2.56, a standard deviation of 0.961, and moderate agreements. The domain had a mean value of 3.42 and a standard deviation of 0.56, which indicates a relatively high amount of variation for this domain.

This result indicates that there are areas for improvement in providing facilities for the home economics branch's workshops. The result might be attributable to the high number of female students in one class, not commensurate with the workshops' standards. The equipment needed to be sufficient for the number of students. Additionally, it required development, and the class time needed to be increased to allow the teacher to deliver the lesson and practical application, and then train the students on the skill. The weekly lessons needed to be increased to apply

the required practical skills. These results align with the findings of Danaa's (2018) and Al-Ghawanimah's (2008) studies, which confirmed that the workshop equipment was insufficient for all female students to train and that the equipment in the workshop was not updated to cope with the rapid technological developments. Moreover, they also revealed the need for more time to give the lesson and practical application.

Obstacles to the use of practical applications in education among female teachers of vocational sciences

In order to answer this question, the means and standard deviations of the scores of the sample members on the total degree of obstacles to the use of practical applications in education were calculated according to the variable (number of years of experience, home economics branch):

Table 8. Sample's Scores On the Total Score According to the Study Variables

Variables	Category	No.	SMA	SD
Home Economics Branch	food manufacturing	8	3.23	.58
	clothes production	8	2.94	.13
	cosmetic	9	3.12	.19
Years of Experience	Less than five years old	18	3.22	.32
	5 - less than 15 years	7	2.78	.27
	15 years and over	0	0	0

Table 8 clearly illustrates significant disparities among the mean scores of the sample participants on the total scale score, based on their distribution according to the study factors. A 2-WAY ANOVA without interactions was performed to assess the significance of these differences for the overall score. Table 9 encapsulates the findings.

Table 9 2-WAYS ANOVA without Interactions for Samples' Scores of "Study Variables"

Contrast Source	Squares Sum	Freedom Degree	Average Sum of Squares	Q Value Calculated	Statistical Significance
Home Economics Branch	.214	2	.107		.330
Years of Experience	.808	1	.808	1.169	007*
The error	1.921	21	.091	8.836	
Total	242.816	24			

** Function at significance level a = 0.05*

Table 9 clearly indicates that there were no statistically significant variations ($\alpha = 0.05$) in the scores of the sample participants about the overall degree of impediments to the implementation of practical applications in education, attributable to the study variable "home economics branch." The results indicated statistically significant differences ($\alpha = 0.05$) in the scores of the sample members on the overall degree of hurdles to utilizing practical applications in education among female teachers, attributable to the variable "years of experience." These disparities favored educators with fewer than five years of experience. This outcome may be attributed to the teachers exhibiting nearly identical tendencies, regardless of their years of experience and educational credentials. Moreover, all female educators, regardless of their tenure and educational qualifications, face identical contextual challenges, including inadequate technical and administrative support, large class sizes, and an excessive number of classes, which hinder their ability to implement practical educational applications.

CONCLUSION

In conclusion, this study has resulted in giving some fruitful insights about the obstacles of Jordanian home economics teachers to implement practical applications in the curriculum. The analysis shows that several challenges need to be addressed in order to maximize the effectiveness of the workshop and equipment, such as insufficient materials and facilities, a lack of student interest and motivation, and inadequate teacher qualifications and training.

In order to effectively overcome these barriers and improve the quality of vocational education, several actions need to be taken, if at all, by the Jordanian Ministry of Education. First, investment in aggressive modernization and maintenance of workshop facilities and equipment is important, ensuring educators have access to the necessary resources for the delivery of practical situations. This is the investment that will benefit the teachers and also create a favorable environment for the students to learn and foster hands-on skill development among them.

Second, those initiatives to develop student engagement and student motivation should be developed, as this study has illustrated the importance of student engagement and motivation in a practical application of home economics education scholarship. Programs focused on the importance of teamwork, critical thinking, and solving problems will help prepare students for real-life situations and future careers.

Third, the study has determined the need for specific professional development opportunities for home economics teachers, especially those with less than five years of teaching experience. These training programs aim to develop pedagogical skills, good workshop management, and how to implement them into real applications in the classroom. Equipping the teachers with the necessary skills and knowledge will boost the quality of vocational education, and in turn, help those who can contribute to society as a whole.

Lastly, there is a need to create a supportive and collaborative system amongst home economics teachers and educational establishments. Promoting discussion and the sharing of best practices will see teachers learn from each other and find solutions to problems more efficiently. Long-term, this collaborative approach will result in the overall transformation of VET in Jordan.

By targeting the learning challenges highlighted in this research, the Jordanian Ministry of Education can make sure that its home economics teachers are well-prepared to provide excellent vocational education. Finally, they will lead to the creation of well-rounded individuals with a skill set that will prepare them for the challenges that they will inevitably face in real life and what they will do in order to help create a better society.

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