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P U B L I S H I N G

Research Article

The Impact of Modern Education Technologies on the Development of Vocational Qualification Skills in Light of the Requirements of the Labor Market

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Abstract

The study aims to know the role of modern education technologies in developing vocational qualification skills for diploma students at Umm Al-Qura University. This study used the quantitative approach to achieve the goal of the study, the questionnaire was used as a data collection instrument, and the study population included (777) students diploma of students studying the course of vocational qualification skills in the Applied College at Umm Al-Qura University and the study sample that was reached (534) Students, and the questionnaire was distributed electronically for the target sample, and the results of the study showed that diploma students have the average level in the use of modern educational technologies. The results also showed that modern education technologies have a role in developing vocational qualification skills for diploma students at Umm Al-Qura University.

Keywords: modern education technologies, the development of vocational qualification skills, requirements of the labour market, Saudi Arabia

1. Introduction

Technology has become one of the most distinctive elements of the 21st century, which is defined by the information and industrial revolutions that have reshaped every aspect of human existence (Nurullina & Ramazanov, 2020). The information and communication technologies of today are undergoing a transformation that has never been seen before in human history. Many countries have had to reevaluate their policies to keep up with the rapid pace of technological development, and the components of modern society have been transformed into digital knowledge, cultural transparency, smart institutions, and virtual environments because of this technology (McGuinness, Pouliakas & Redmond, 2021). Many educators and educational decision-makers in many nations now see the potential of these contemporary technologies as a window of opportunity that should be invested to bring about a qualitative shift in the educational system's inputs, processes, and outputs (Makarenya, Stash & Nikashina, 2020). According to Saif et al. (2022), technological advancement is now the yardstick by which the performance of any area is measured, and the success of the educational process is predicated on the efficient use of advanced technology in teaching. Also, as Drossel, Eickelmann and Gerick (2017) pointed out, technological advancements are what make universities adjust their stances; the most obvious consequence of this is that today's universities have the

prestige of being the institutions of the future. The university can't claim to be a "university of the future" if it doesn't embrace modern technologies. As a result, new directions in education have emerged intending to take advantage of these advancements in technology to boost academic outcomes, increase the effectiveness of learning, and provide students with better chances to develop the skills necessary to succeed in the market labour (Hew & Tan, 2016).

Recent developments in e-learning have pushed institutions of higher education to keep pace with the explosion of available scientific and knowledge-based information and to provide effective education in the face of globalization. Because our contemporary society requires generations that can keep up with the changes and advancements of the times and because we have a constant need for talented employees, the use of technology in the service of education in the modern university is an essential requirement (González-Zamar, Abad-Segura, López-Meneses & Gómez-Galán, 2020). The most significant technological advancements in education may aid and activate the teaching and learning process to improve the quality of education. The use of advanced technology in the classroom, including interactive teaching approaches, is widely regarded as one of the most recent developments in the field of education, with the potential to have a profoundly beneficial impact on student achievement and teacher effectiveness (Willermark, 2018).

Technology in education helps to prepare a generation of teachers and students who can deal with technology and are equipped with the newest skills of the era. It also helps to provide a rich educational environment with a variety of sources, encourage communication between the parties involved in the educational system, model education and present it in a standard format (Okoye et al., 2022). The role of the student has also changed as a consequence of the development of educational technology, and the function of the instructor has altered to represent his new duties. Because he must participate actively in the educational setting by engaging and reflecting on his performance, the learner is no longer only a passive user of information (Barton & Dexter, 2020). The primary standard for educational systems and equal opportunity has been proficiency, which has influenced curricula, their content, activities, methods of presentation, and methods of assessment. Students are also being given the tools for self-education and individualizing their education (Boninger, Molnar & Saldana, 2019).

The educational process and its effects on the instructor and student have developed quickly as a result of the use of educational technology. Because technology not only deals with information but also with pictures, music, maps, and video, all of which are exhibited in front of the student's eyes, it has an impact on life and work (Chick et al., 2020). They evolved into instruments for inquiry, discovery, and interaction with universities, research institutions, libraries, and other institutions. Additionally, it helped to preserve, disseminate, and transfer information (Chiu, 2020). It changed education from using traditional methods to using individual electronic methods, resulting in the development of creative thinking, problem-solving techniques, scientific thinking abilities, and long-term learning (de Souza Rodrigues, Chimenti & Nogueira, 2020).

Starting in 2019, technology forces will be the ones that may reshape global economies, industries, and employment. Students that are interested in education will wish to join in and profit from this highly advanced, future environment (du Toit & Verhoef, 2018). Therefore, it is impossible to discuss education reform without mentioning the use of technological approaches, since this is the most significant component of the current educational system (Henderson, Selwyn & Aston, 2017). One of the most significant fundamental foundations of the construction of any powerful and lasting civilization is constructed is the educational system. The goal of the educational system is to equip students with the information and skills they need to realize their greatest potential (Hosseini, Peluffo, Okoye & Nganji, 2021). Therefore, it becomes essential for them to have the freedom, support, and empowerment they need to carry out their work in a way that benefits society as a whole. This will also allow them to benefit from opportunities for high-quality qualifications, to continuously take advantage of opportunities to advance their professional skills, and to work in a setting that ensures their safety during technological changes (Jassir, 2018).

As a result, considering that the students are a major component of the educational system and

that the discussion centres on defining the best educational techniques to prepare the future workforce, the preparation and qualification of students have taken up much of the attention and thought of educators and have become a focus of discussion and study in conferences, seminars, research centres, and universities, whether at the local, regional, or international level (Acemoglu & Restrepo, 2019). No matter how well-prepared pupils are, they will not be able to carry out their roles efficiently at a time of advancements, ongoing change, and industrial revolutions. The preparation of the students during the academic stages and their training when he enters the labour market are two connected and complementary processes (Bessen, 2016). Therefore, the development of a student's professional and technical skills has become important to simulate his abilities with technological development. This is particularly true given that the majority of students lack experience working with technology and the strategies for integrating it into the educational process (Bresnahan & Yin, 2017). As a result, to keep up with the age of the technological revolution, the process of students' professional growth must be on a firm foundation and concentrate on expanding and improving the methods of the educational process (Martens et al., 2020).

One of the current global trends in education is the focus on students' professional growth and the development of its forms and methods of presentation. This is because student professional development is essential to keeping up with the advancements and changes in the educational process and is also a component of the growth of the educational system as a whole, not just the students (Shutenko et al., 2018). Since the educational future differs from the reality that education is already experiencing and it is obvious that contemporary technologies generate renewable educational environments, the professional growth of students is the cornerstone of development for the development of other disciplines (Das, 2019). Based on the above; the study seeks to determine the role of modern educational technologies in the vocational qualification of students from the point of view of Umm Al-Qura University students.

1.1   Problem Statement

Higher education faces major challenges as a result of the accelerated transformation towards modern technology technologies, and ACEMOGLU and RESTREPO (2019) confirm that the current trend is increasing to use modern technology technologies instead of traditional theories and methods to narrow the gap between the requirements of the technical labour market and the development of professional qualification for students. The problem of deficiencies is evident in the needs of the labour market in the field of modern technology. By reviewing the theoretical literature, it became clear that many previous studies direct the management of universities towards employing these modern technologies in the education for the benefit of students, but there are no comprehensive sources of the latest modern technologies in the field of education and how to use, activate and integrate them into universities.

Hence the importance and necessity that the role of the educational system changes, as the main axis of the generations industry with its details and directions, and preparing human cadres capable of keeping pace with all the requirements. Consequently, her role requires that the student be eligible to do this by preparing him in a way that suits the nature of that role, as preparing the human rule armed with modern technological technologies is the most important condition for keeping pace with the smart knowledge age, and building the knowledge economy based on its applications, which requires the necessity of restoring Consider professional rehabilitation courses in universities; To keep pace with the requirements of that technological revolution used in the labour market.

1.2   Research Questions

In light of what was previously mentioned, the study questions focus on the following:
    1.   What is the level of use of modern educational technologies from the point of view of Umm

Al-Qura University students?
2. What is the level of vocational qualification of students from the point of view of Umm Al-Qura University students?
3. Is there a statistically significant relationship between modern educational technologies and the vocational qualification of students from the point of view of Umm Al-Qura University students?

1.3 Research Objectives

Based on the study questions, the study sought to achieve the following objectives:
1. Determine the level of use of modern education technologies from the point of view of diploma students at Umm Al -Qura University.
2. Determine the level of vocational qualification for female students from the point of view of diploma students at Umm Al -Qura University.
3. Explore the relationship statistically significant between modern education techniques and vocational rehabilitation from the point of view of diplomatic students at Umm Al -Qura University.

1.4 Terminology of Research

Modern educational technologies: It means everything new and modern in the field of technology employment in the educational process, including modern devices and machines and teaching methods to increase the learner's ability to deal with the educational process.

Qualification development for students: An organized, continuous and comprehensive process aimed at developing female students' competencies to be more efficient and effective; to meet the current or future specific needs that society needs to meet the requirements of the profession, and the developments and developments in this field.

2. Literature Review

One of the characteristics of the present period and one of its passions is the use of new technology, which is virtually always necessary for a job or leisure. However, it is clear that the enormous advances in knowledge that the third millennium saw contributed to enormous changes in societies in a variety of areas (Ra et al., 2019). The educational sector is the one that has been most significantly impacted by these changes, particularly educational institutions of all levels. Technology in education is described as the research and moral practices that support the learning process and strive to increase performance by developing technical resources and procedures that are compatible with the learning process, employing and controlling them in that process (Gekara, & Thanh Nguyen, 2018). Modern educational technology is described by UNESCO as a systemic approach that aids in the design and implementation of the educational process following specific goals resulting from research in the fields of human communication and education by utilizing human and non-human resources to improve the educational process (Nurullina & Ramazanov, 2020). It is also referred to as the method of using technical programs in education to enhance the educational process' effectiveness and foster discussion through re-planning, organizing, putting into practice, and assessing the educational outputs (McGuinness et al., 2021). This is an integrated system of hardware, software, procedures, and operations that the teacher uses in the educational process (Makarenya et al., 2020).

When the scientist "Fin" first coined the term "educational technology" in 1921, the idea of it was only beginning to take shape. From that time till today, the notion has influenced several phases until it reached the concept recognized in the present period (Drossel et al., 2017). It has developed to now incorporate communicative, visual, and audio education (Hew & Tan, 2016). The evolution of

education technology has gone through several phases that have helped to shape its concept. The technology employed in education does not necessarily refer to electronic gadgets, but rather to a method of application that enhances performance and advances the educational process. The word "educational technology" refers to two key elements: the hardware components, also known as software and programs, and the instructional materials that are transformed from their conventional forms into new technological forms (González-Zamar et al., 2020).

For a long time in history, educational instruction relied on traditional approaches to achieve a variety of educational objectives, particularly the explanations and ongoing planning for the lessons that the teacher delivers (Willermark, 2018). This teacher frequently exerts ongoing effort to achieve the serious indoctrination of the educational program. The book is essential to attaining this objective, but the information revolution's data forced a shift in the book's function from explanation and ongoing preparation to planning and assessment (Okoye et al., 2022). There are now complicated phases in education that need planning, arranging, and sharing of duties between the instructor and the student. Through the abilities he has developed in the areas of communication and interaction with modern technologies as well as the findings of knowledge in various scientific fields and disciplines, the student was given the chance to contribute to the success of the educational process in its modern concept (Barton & Dexter, 2020).

Modern educational technologies focus on the objectives and benefits of influencing them in terms of quantity and quality by depending on fundamental achievements made throughout the globalization and information age (Boninger et al., 2019). Due to its reliance on cutting-edge methods for disseminating information and practical knowledge, particularly the Internet, which is now widely used in all areas of scientific research, particularly in the creation of academic scientific projects (Chick et al., 2020). One benefit of using contemporary technology in education is that the issue of the temporal and geographical dimension of access to scientific information has been solved (Chiu, 2020). The problem of a shortage of educational equipment, which was often brought up forcefully in the area of developing scientific research at all educational levels, has also been effectively addressed by applying these technologies (de Souza Rodrigues et al., 2020).

The student is now the centre of the educational process because the student is the one who is learning, investigating, discussing, exploring, and obtaining information. This makes the student active and interactive in the classroom and helps him or her understand the value of knowledge and education (du Toit & Verhoef, 2018). This perspective led to the development of techniques and approaches that allow learners to cohabit with their academic and professional lives while also igniting their excitement for teaching (Henderson et al., 2017). Jassir (2018) stated that the goals of integrating technology into education are as follows:

1. Enhancing students' capacity for creative thought.
2. Making the student aware that he is in charge of his education.
3. Giving the student the ability to learn new technologies.
4. Allowing the student to perform analysis, study, and scientific investigation.
5. The variety and abundance of teaching techniques used to impart knowledge to students.
6. Creating an environment of activity and engagement in the learning space.
7. The inclusion of variety and enthusiasm in the learning process.

The Ministry of Education has acknowledged the benefits demonstrated by research and studies on the viability and efficacy of integrating technology into the educational process and how it reflects in the quality of educational outputs and students' acquisition of skills, experience, and knowledge in a more effective and advanced manner (Acemoglu & Restrepo, 2019). Several factors may contribute to technology's significance, the most significant of which is that it is a way that students find engaging and pleasant and is widely used in classrooms. In light of this, the following are some reasons why technology integration in education is crucial (Bessen, 2016):

1. Increasing the efficacy and quality of education.
2. Addressing the issues caused by packed lecture halls and classrooms. Reviewing data and literature on education reveals that pressure on education is growing as a result of the rising

demand for education in emerging nations, particularly in Arab nations.

3. Considering the unique characteristics of each student in the various courses.
4. Assist in creating opportunities for sensory experiences that are as authentic as feasible. To improve the quality of education, teaching aids and educational technology aim to provide students with actual or alternative experiences and bring reality closer to their brains.
5. Using a variety of strategies in a teaching-learning environment and integrating them effectively results in more profound learning, has a bigger impact, and lasts longer. Studies have shown that the return on information and experience increases as the number of senses used in teaching and learning increases.

Bresnahan and Yin (2017) and Martens et al. (2020) stated that the following techniques for incorporating technology into the educational process are among those that constitute the successful use of educational technology:

Learning Environment: This term refers to the initial use of the personal computer or laptop, which was limited to the computer lab, with its set of devices and a display screen or projector to display information to students and other computer programs that greatly facilitated the delivery of information to students and made the class more interactive. It's successful in the classroom, using PowerPoint, instructional videos, and other approaches (Bresnahan & Yin, 2017).

Information and Communication Technology: The word information and communication technology (ICT) started to arise in educational institutions with the advent of Internet networks, and the classroom extended such that access to information is not restricted to being within the classroom. While it can be accessed from any location and at any time if there is Internet access. Additionally, electronic conversations and surveys are now possible, and teachers may provide feedback to students online (Martens et al., 2020). The most significant ways that this technology has helped students broaden their views in education include the following (Martens et al., 2020):

– Gathering data from the internet, analyzing it, and contrasting it with results from experiments conducted in a lab.
– Using a variety of technical tools to address the issues that students can run into while studying, just as if they were problems real.
– The evaluation of several scientific investigations via the use of computer simulation tools.
– The ability to communicate through a variety of channels, including social media and email.

Distance Learning: The term "distance learning" refers to a type of education that takes advantage of the flexibility and portability afforded by modern information technologies such as the Internet, e-mail, and Skype to deliver content and facilitate student-instructor communication in a way that facilitates active learner engagement with the course, peers, and instructors, whether in real-time or asynchronously and in a manner that is best suited to the learner's circumstances and lifestyle. Educators' responsibilities in a classroom when students' learning styles vary greatly from their own (Bresnahan & Yin, 2017). The following are only a few of the various e-learning methods that have been implemented in educational institutions worldwide (Martens et al., 2020):

– Flipped classrooms: Flipped classroom technology allows students to examine and debate classroom lectures with the lecturer, either live or asynchronously, using electronic recordings. In other words, the student no longer needed to go to the classroom; rather, the classroom came to them and the student has become part of the educational process, debating, modifying, and adding material. The instructor is no longer constrained to the indoctrination approach.
– Major courses: Because all that's required to access the scientific content in these courses is an internet connection and a laptop, they attract a huge student body.
– Online open courses: Except for some of the parties responsible for these courses, who reserve the right of ownership of scientific resources and use them only with permission, the availability of these courses in all of their components via the Internet has become available to everyone.

- Blended Learning: Blended learning is used in various computer programs and applications, such as videos and pictures, it is the combination of direct learning in traditional classes with e-learning tools like the Internet that enables the learner to receive information from the Internet with the teacher's voice for providing practical instructions during class. This method of learning captures the student's attention more than indoctrination manner. Numerous research looks at this educational system's evolution in the future.
- SMART Boards: A computer and a data display device are required for it to function. It is a particular kind of display device. Connecting it turns it into a big, high-resolution computer display that stores all text, data, and images and sends them to the students' PCs. termed an interactive whiteboard as well.
- Class Blog: Teachers who use Word Press and Blogger to construct these free blogs publish everything they teach. These blogs provide students with the chance to communicate with teachers, comment on their work, publish it, and gain from it.
- Social Media: One of the most significant tools used to improve interactions between students, professors, and other students is social media. Additionally, it enables the posting of significant articles that engage students and challenges their thinking, as well as the possibility of holding contests for students to solve puzzles and issues.
- Cloud Sharing: Students may share their study materials and presentations with other students by using tools such as Dropbox, Google Drive, Microsoft SkyDrive, and Apple iCloud to store and exchange files.
- iPad: Due to its portability, wireless Internet connection, and ability to store instructional resources, it is now one of the technologies that are used most often in the area of education. In many industrialized nations, it has even replaced books.
- Email improves communication between instructors and students so that news and events may be shared via it. Both sending a message to one person and sending it to several recipients at once is possible.

When discussing education and modern teaching methods, the capabilities vary depending on whether they are logistical in securing these machines or if they are skill-related. Often, the learner and the teacher overcome the skill obstacle by simply securing the devices, as they are frequently simple to use and require only a basic understanding of computers and how to use those (Shutenko et al., 2018). Due to carelessness or an overestimation of the value of technology in the classroom, not all instructors, however, make advantage of the resources provided by these methods (Das, 2019).

One of the current global trends is to pay attention to student's professional growth, which is essential to stay up with advancements and changes. Additionally, one of the primary directions for the improvement of the educational system is the creation of professional development for students (Durmus & Dagli, 2017). The majority of studies concentrate specifically on student growth, while others pay attention to improvements in the classroom that help students become professionally qualified. Professional development is therefore concerned with helping students learn and apply their knowledge to real-world situations to help the expansion of labour markets (Krisnawati, Mei, & Puspitaningtyas, 2019). This is a difficult process that calls for everyone's cognitive and emotional involvement as well as the capacity and desire to learn (Durmus & Dagli, 2017).

The goal of professional development for students is to provide them with the information, skills, and strategies to enhance their performance in all areas of the educational process in a manner that satisfies societal goals and expectations (Gekara et al., 2017). These methods are predetermined in advance by authorities. A vocational qualification is a sort of ongoing education for students and one of the methods by which students may enhance their abilities and provide better outcomes that can satisfy market expectations (Jawarneh, Al-Sheboul & Al Azam, 2019). Vocational qualification refers to broadening the knowledge and honing the skills of students to advance professionally, work more efficiently, and address issues that allow them to help fulfil market demands (Lee et al., 2018). A vocational qualification is also defined as increasing students' effectiveness by improving their skills to use technological innovations, raising their performance, developing their abilities and

capabilities, renewing their experiences to face technological development in business, and investing in technology tools to achieve goals (Bautista & Ortega-Ruiz, 2015).

New educational ideas have emerged as a result of the global surge in science, technology, and development. These and other developments had an impact on education and presented difficulties, which changed the responsibilities of educational institutions and students and necessitated attention to professional development as well as the updating and development of its programs. For students to continue in their responsibilities and roles, it is important to make sure that the information they have received can keep up with development, the explosion of knowledge, and the technological revolution (Qararah, 2017). In light of the technological revolution, in particular, he cannot depend on his prior academic and professional skills to stay connected to fresh information and cutting-edge technology. Therefore, it was essential for individuals with an interest in education to actively contribute to giving students the chance to take in these advancements and changes as well as to engage in their professional growth (Al-Shdefait & Al-Zboon, 2020).

Since it plays an important role in enabling students to complete their updated and advanced assignments so that they can contribute to their work, professional development for students has become a pressing necessity. Which requires continuous development to keep pace with changes so that they can carry out their jobs to the fullest. In the age of the technological revolution, students' professional growth objects to accomplish several objectives related to their duties and responsibilities (Al-ukosh & Badah, 2020). Maintaining current with developments in the field of specialization, putting all that is new and emerging into practice, establishing the principle of continuous learning and lifelong learning, relying on electronic self-learning techniques, and updating students' knowledge and skills following the demands of the technological revolution are all examples of professional development. Additionally, it helps students to access information resources, does thorough research, and acquire a variety of competencies and evaluative abilities, particularly those related to self-learning (Aldahshan & Mahmud, 2021).

As a result of educational institutions' interaction with the changes of the times in the student's professional development, and as a result of their efforts to provide individuals who can keep up at all times and in all places in light of the technological and information revolution, many new trends in professional growth have emerged in recent years (Durmus & Dagli, 2017). The research discusses the most significant of these tendencies because of their significance to professional growth (Krisnawati et al., 2019):

- The future direction of planned and scheduled professional development: This direction concentrates on the student's development while paying great attention to the future aspect, whether in terms of philosophy, objectives, or approaches. Planning for the student's professional growth must reflect his future role since he will confront obstacles in the future that won't manifest right away but that he must be prepared to face head-on and learn from (Jawarneh et al., 2019).
- The direction towards focusing on educational institutions as units for the professional development of students: Institutions of higher learning serve as crucial training grounds for students' professional growth. To develop programs that address such demands, educational institutions can recognize the professional needs of their students as a community of learners (Lee et al., 2018).
- The direction towards the use of distance education and e-learning systems: This direction is founded on the goal to use information and communication technology to provide chances for professional development for all students, regardless of age, location, or economic circumstances. The direction has several benefits that encourage student innovation, making it one of the necessary alternatives for educating students in light of technology advancements and serving as a vital tool for increasing prospects for students' professional growth in the future (Jawarneh et al., 2019).
- The direction towards self-professional development: When it comes to enhancing his knowledge, skills, and talents, the student chooses to accomplish this on his initiative. The

notion of self-learning must underpin professional development programs for students, and this tendency is steadily increasing as a result of technological advancement (Krisnawati et al., 2019).

Recent developments in the area of student professional development suggest that current educational practices need reevaluation and that innovative strategies, programs, and policies are required to equip today's students with the professional skills they will need to adapt to a rapidly changing world.

2.1 Previous Studies

Qararah (2017) explains how technology in the classroom aids students at the intermediate level in acquiring and enhancing their skills. Researchers analyzed data from 172 middle school educators. Random sampling was used to choose (100) educators. The questionnaire was used in the research depending on a descriptive approach. The research found that the use of technology teaching techniques and teaching aids significantly contributed to the growth of student's cognitive and behavioural competencies. It also revealed that conventional assessment techniques are still used in educational settings where technology is used for evaluation, which does not promote the growth of social competence.

Al-Shdefait and Al-Zboon (2020) identified the reality of employing educational technology in the classroom in Kasbah Al Mafraq from the viewpoint of the educators who work there. The study's sample included 360 educators from schools in Kasabah AL Mafraq, and data collection was conducted using a descriptive methodology that included the development of a questionnaire with three sections (knowledge, skills, and assessment) and 22 items. The research found that in Kasabah AL Mafraq's schools, the actual use of educational technology in the teaching process is low from the viewpoint of the educators. There were also no statistically significant variations in the sample's perceptions of the actual use of educational technology in the pedagogical process, as judged by the teachers themselves when broken down by either gender or level of scientific training.

Al-ukosh and Badah (2020) identified the value of technical education and training in satisfying industry needs for skilled workers in the technological sector. It's an empirical investigation of Gaza's technical universities. Researchers in Gaza utilized questionnaires as part of their descriptive analytical strategy to gather information from five different technical colleges. A total of 324 participants were surveyed using a stratified random sampling technique. One of the most important findings was a statistically significant relationship between education and technical training, specifically between the following variables: the technical trainee skill, the technical trainer skill, the efficiency of the training curriculum, the modernity of the applied means used, and the degree to which technical colleges in the Gaza Strip meet the labour market needs in the field of modern technology.

Aldahshan and Mahmud (2021) constructed a strategic plan for expanding training opportunities for educators to meet the demands of the Fourth Industrial Revolution. Teachers in the Assiut Governorate, of which there are a total of 710, were surveyed using a questionnaire designed to collect descriptive data to determine how seriously educators placed various criteria for designing professional development programs for educators to keep up with the Fourth Industrial Revolution. According to the findings, there are three main categories of what is needed to create professional development programs for teachers so that they can keep up with the Fourth Industrial Revolution: (1) requirements related to the goals of the professional development for teachers, (2) requirements related to the content of the professional development for teachers, and (3) requirements related to the delivery of the professional development for teachers. The means teacher's replies varied significantly by level of education, with those holding a master's degree or above and those holding a doctorate being more likely to agree with the statement.

3. Methodology

The quantitative method was used because it was thought to be the most appropriate for this research and because its goals extend beyond just describing the phenomena under investigation, elucidating its features, and expressing it qualitatively or quantitatively by defining its magnitude.

3.1 Study Population and Sample

Participants included all students of programming diploma, computer science and students of the banking business diploma and financing registered at the course of vocational qualification during the second semester of the academic year 1444 AH in the Applied College at Umm Al -Qura University in the Kingdom of Saudi Arabia, which number 777 students. Referring to the Krejcie and Morgan table (1970), it was found that the size of the sample population is 260.

The basic plan was to survey all female students to ensure that the sample was representative of the population, to collect as much data as possible from the respondents, and to prevent any bias in the results (Cooper & Schindler, 2014). Therefore, the questionnaire was distributed to all students electronically. A total of 560 questionnaires were retrieved. As more than 50% of the questions in 26 of the 560 questionnaires were left unanswered, they were excluded from the study (Hair et al., 2010), this resulted in 534 valid questionnaires for analysis.

3.2 Research Instrument

The research instrument was a questionnaire that the researcher created to accomplish the study's goals by drawing on several other studies, including those by Al-ukosh and Badah (2020), Al-Shdefait and Al-Zboon (2020), and Aldahshan and Mahmud (2021). The questionnaire is divided into three parts, and the basic formulation of the items was based on those studies. The purpose of the first part is to gather individual information about the research sample, such as the academic year of students and cumulative grades. The second section's goal is to assess the extent of the use of contemporary educational technology with 20 items. The third segment is to determine the level of meeting the market requirements in the vocational qualification course for female students of Umm Al-Qura University with 17 items. The five-point Likert Scale ranging from "1" (extremely low) to "5" (extremely high) was used.

The researcher showed the instrument to ten specialists from Saudi universities who all had doctorates in education technology. This was done so that the language's scientific rigour, formulation, and clarity could be guaranteed. In light of the recommendations made by these specialists, the number of questions about the use of contemporary educational technology has decreased to 15 and the number of questions about the level of meeting the market requirements in the vocational qualification course has decreased to 13 questions.

By examining whether or not the same results can be obtained using the same sample and the same instrument while keeping all other variables, it is feasible to assess whether or not an instrument is trustworthy. The internal consistency of the respondents' replies was assessed using Cronbach's alpha. According to Bryman and Bell (2011) and Saunders et al. (2016), a score of 60% or above implies that the responses supplied by respondents may be believed. This is shown in Table 1.

Table 1: Cronbach Alpha Test

Variable	Value
Modern educational technology	0.740
Vocational qualification	0.865
Total	0.837

The study's measurements, whose findings are shown in Table 1, were found to have good levels of internal consistency and to fall within the range (0.740-0.865). Since all of the questionnaire's subcomponents have Cronbach Alpha values greater than (0.60). This shows there is congruence between the various parts of the research instrument.

3.3 Data Analysis

The researcher made use of the mean scores, standard deviations, and linear regression offered by the SPSS software to accomplish the goals of the study. The following explains the results, which were based on the means that were employed to describe them. The mean score of the item is less than or equal to (2.33); the grade of the item is low. The mean score of the item ranges between (2.34- 3.66); the grade of the item is moderate. The mean score of the item is more than or equal to (3.67); the grade of the item is high.

4. Results and Discussion

4.1 Profile of the Respondents

The method of descriptive analysis was used to characterize the respondent's demographic information, such as "academic year of student" and "cumulative grades." According to the table that follows, first-year students made up 71.9% of the respondents, while students in their second year made up 28.1%. According to Table 2, 67.0% of respondents have a cumulative degree that falls between 81-90, while 26.6% of respondents have a cumulative degree that falls between 91 and 100, and 6.4% of respondents have a cumulative degree that falls between 71-80.

Table 2: The Profile of the Respondents

Variable	Category	N	%
The academic year of the student	First-year students	384	71.9
	Second-year students	150	28.1
Cumulative grades	60-70	0	0.0
	71-80	34	6.4
	81-90	358	67.0
	91-100	142	26.6

4.2 Results about the first research question

The first research question was answered by calculating means and standard deviations for all items of level use of modern educational technology.

Table 3: Mean scores and standard deviation

Items	M	St.devi	Dec
Courses materials are provided as electronic files for students	3.05	1.35	M
The university has ready-made software for scientific material.	3.00	1.33	M
The university employs modern technology as one of the main sources of knowledge	2.98	1.33	M
Courses are enriched with introductory programs to enhance them.	3.06	1.35	M
Scientific experiments and research are presented, opinions are surveyed and inquiries are made.	3.15	1.26	M
Students are contacted via social media (video clips, audio clips, and educational files).	3.09	1.33	M
Preparation for the lecture is carried out with the students in an interesting way through educational technology.	3.11	1.31	M

Items	M	St.devi	Dec
Modern technology is used to develop motivation and a spirit of competition among students.	3.01	1.34	M
The use of e-learning methods works to integrate students into effective activities that differ from traditional teaching methods.	3.08	1.35	M
Modern educational technology is used to develop student's communication skills	3.16	1.40	M
Modern educational technology is used to develop modern scientific thinking methods.	2.36	1.26	M
Modern educational technology is used to develop and train students to think critically.	3.16	1.43	M
Modern educational technology is used to conduct electronic tests.	3.20	1.32	M
Modern educational technology is used to send and receive assignments and students' work.	3.08	1.39	M
Modern educational technology is used to answer students' inquiries and questions	3.16	1.39	M
Total	**3.04**	**0.62**	**M**

Table 3 showed that the mean value of the use of modern educational technology was (3.04) with a standard deviation of (0.62). This means that the use of modern educational technology from the point of view of students at Umm Al-Qura University was moderate. Item 1, which states, "Modern educational technology is used to conduct electronic tests" has the highest mean value among the items of the use of modern educational technology (3.20). Also, items 10, 12, and 15 states, "Modern educational technology is used to develop students' communication skills", "Modern educational technology is used to develop and train students to think critically", and "Modern educational technology is used to answer students' inquiries and questions" respectively, have the moderate means value among the items of the use of modern educational technology with (3.16). While item 2, which states, "The University has ready-made software for the scientific material", and item 3, which states "The University employs modern technology as one of the main sources of knowledge" have the lowest value of the means among the items with 3.00 and 2.98 respectively. This result differed from the study of Qararah (2017) and Al-Shdefait and Al-Zboon (2020) which revealed that the level the use of modern educational technology was low.

This finding may be explained by the fact that despite educational technology's ability to remove geographical and spatial obstacles, it is not being widely used in classrooms. The fact that most educators believe that conventionally delivering information is more obvious than current learning approaches also contributes to this rejection and resistance to modern and new. This may also be related to the instructors' lack of understanding of learning styles as well as the fact that each category of students needs a certain kind of learning style since conventional education is the best style for all students in the classroom. This outcome may also be explained by the instructors' opinion that conventional methods of student testing are essential and better equipped to gauge students' levels of accomplishment than computerized examinations.

4.3   Results of the second research question

The second research question was answered by calculating means and standard deviations for all items of the level of meeting the market requirements in the vocational qualification course.

Table 4: Mean scores and standard deviation

Items	M	St.devi	Dec
Keeping abreast of developments in teaching and learning theories and their application.	3.36	1.32	M
Providing students with updates in the professional field.	3.33	1.39	M
Develop creativity and encourage students to pursue their interests.	3.30	1.39	M
Establishing the principle of continuous learning and lifelong learning and relying on self-learning methods.	2.72	1.35	M
Dealing effectively with the technological techniques necessary for the professions.	3.00	1.38	M
Enabling the student to use information resources and search for everything new and developed.	3.42	1.40	M
Training to deal with robots.	3.46	1.15	M

Items	M	St.devi	Dec
Employing Google Apps in the work environment.	3.42	1.28	M
Employing cloud computing applications in the work environment	3.44	1.23	M
The skills of organizing and arranging data and outputting it in the form of information.	3.93	1.06	H
Effective and flexible teamwork skills.	3.97	1.01	H
Provide flexibility and adaptability to new and future roles and responsibilities.	3.76	1.24	H
Providing leadership skills and taking responsibility towards others.	3.73	1.24	H
Total	3.45	0.76	**M**

Table 4 showed that the mean value of the level of meeting the market requirements in the vocational qualification course was (3.45) with a standard deviation of (0.76). This means that the level of meeting the market requirements in the vocational qualification course from the point of view of students at Umm Al-Qura University was moderate. items 11, 10, 12 and 13 which state, "Effective and flexible teamwork skills", "The skills of organizing and arranging data and outputting it in the form of information", "Provide flexibility and adaptability to new and future roles and responsibilities", "Providing leadership skills and taking responsibility towards others" have the high means value among the items of the level of meeting the market requirements in the vocational qualification course with (3.97), (3.93), (3.76) and (3.73) respectively. Also, items 4, and 15 which state, "Establishing the principle of continuous learning and lifelong learning and relying on self-learning methods", and "Dealing effectively with the technological techniques necessary for the professions" have the lowest means value among the items the level of meeting the market requirements in the vocational qualification course with (2.72) and (3.00) respectively. This result is consistent with the study of Al-ukosh and Badah (2020) and Aldahshan and Mahmud (2021) which revealed that the level of meeting the market requirements in the vocational qualification course was moderate.

This finding makes sense given the deficiencies in the vocational qualification course in meeting the demands of the job market. This suggests that there is still work to be done to create and relate the various changes that impacted higher education to the needs of the job market. The gap between the university and the labour market has widened as a result of the rapid technological changes seen in the labour market; whereas vocational qualification necessitates practical skills, the ability to solve problems, and rapid adaptation to the variables of reality, the curricula focus more on theoretical skills, leading to the student's inability to put his knowledge to use.

4.4   Results of the third research question

With the use of a simple linear regression coefficient analysis, the researcher was able to answer the third research question by determining the kind and degree of influence that modern educational technology has on the vocational qualification of students. A simple correlation study of this effect's regression findings is summarized in Table 5 as follows:

Table 5: Simple linear regression

Variable	Beta	t- value	P- value
Modern educational technology	2.416	14.08	0.000
R	0.278		
R²	0.077		
F	37.885		
df	454		

The information in the table above indicates that there is a statistically significant correlation between modern educational technology and the vocational qualification of students. According to the model's simple correlation coefficients (R), the correlation coefficient has a significant value and represents roughly 27.8%. This finding is consistent with the results of Qararah (2017), Al-ukosh and

Badah (2020) and Aldahshan and Mahmud (2021).

5. Conclusion

The main purpose of this study is to evaluate the impact of modern educational technology on the professional qualification of Umm Al-Qura University students. The results indicated that there is a significant relationship between the levels of modern educational technology and the vocational qualification of students. On the other hand, the results indicated that the levels of modern educational technology and vocational qualification for students were moderate. According to the research findings, most of the teachers believe that traditionally presenting information is more straightforward than the current learning approaches; this may also be related to teachers' lack of understanding of learning styles as well as the fact that each class of students needs a specific type of learning style. In addition, there is still work to be done to establish and link the various changes that affected higher education with the needs of the labour market, which leads to a widening gap between the university and the labour market as a result of the rapid technological changes in the labour market.

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