

# تواصل علمي

T A W A S U L



عمادة البحث العلمي



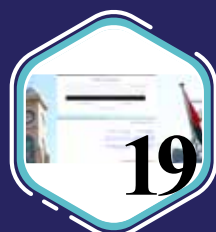
MAY 2021



We examine all scenarios  
for the next educational  
system



Alleviating  
e-learning anxiety



SQU's implementation  
of Moodle



Four studies on  
modern education  
system

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# Distance Learning

A microscopic virus, which can only be seen through a powerful lens, has changed the whole world in just one year. During this time, mankind has had to telescope time and leap into the future through chance, not choice, exploring the horizons of tomorrow, where technological progress imposes greater interaction with the machine, and less reliance on traditional methods that require a tangible space and a certain number of personnel. Were we prepared for what happened? The answer is no, we were not ready for it, and neither were other nations. The abrupt and sudden outbreak of COVID-19 has imposed on us all a reality we never thought we would have to experience for years to come, sooner or later, depending on the will and capabilities of different nations.

The pandemic has imposed an unprecedented lockdown on the whole world: everyday life has been paralyzed; people have been forced to change their way of life and use technology in communication and for problem-solving in various aspects of life, including education; e-platforms have replaced traditional classrooms and lecture halls, and the

screens of computers and smart phones have become a meeting place for students and teachers, wherein the former receive learning from the latter. It has been no simple matter dealing with this situation for most countries. E-learning was, and still is, in its current capacity, something new to educational systems, which has aggravated the situation and created many obstacles that need to be overcome. However difficult the reality might seem to be, it must be dealt with.

In this edition, Tawasul sheds light on distance learning as implemented by SQU and the views of concerned researchers and specialists, as well as their research findings on blended and distance learning.

## Editorial Board



# Research within SQU laboratories to keep pace with Oman 2040

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The laboratories of the projects emanating from the SQU Strategic Plan have involved a fundamental area for innovative research, which has come second after the quality of graduates, and is followed by three other areas, namely, building partnerships, financial sustainability, and governance and institutional organization. These five areas are addressed by 20 projects that represent the basic pillars of each area, including three projects devoted

to innovative research. The selection of a specific area for research is in line with the Oman Vision 2040 document, which contains 12 national priorities, including that of "education, learning, research and national capabilities." The University's stated vision is to continue its national leading role in higher education and community service, and also to be internationally recognised for innovative research, the quality of its graduates, and strategic

partnerships. As for its mission, the University strives to excel in teaching and learning, research and innovation, and community service by promoting the principles of scientific analysis and creative thinking in a collegial and stimulating environment, and to participate in the production, development and dissemination of knowledge, and interact with national and international communities. The laboratories built at the University aim to define future

developmental features and keep pace with what the Sultanate aspires to achieve in Vision 2040 and the objectives of the tenth five-year plan. Each of these projects has a team that includes members from inside and outside the University. They work according to the mechanism of the laboratories to develop operational plans for them, and devise outside-the-box creative and innovative ideas.



# Six research projects receive OMR 60,000

A joint committee of SQU and Omantel has recently approved the six research projects that won the company's grant in 2020. The projects are as follows:

Manufacturing and the use of modified electrodes with a nanoscale, zero-dimensional structure for the capacitive deionization system for groundwater desalination, by Dr. Muhammed Al-Abri.

Using iron-based nanocomposites to develop an effective technique for treating contaminated soil, by Dr. Muhammed Othman.

Assessment of mobile communication network coverage using drones and artificial intelligence, by Dr. Nasser Al-Tarhouni.

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Investigating the use of nanoparticles to enhance oil extraction, by Dr. Sanket Joshi.

A plan for implementation and challenges, by Dr. Dia Nader.

Designing and implementing a mobile application to monitor and follow up cardiovascular patients during physical activity, by Dr. Khaled Al-Rasadi.

The Omantel Research Projects grant was launched at SQU in 2018, with an annual budget of OMR 60,000.



**Education  
Minister to  
Tawsul ...  
We examine  
all scenarios  
for the next  
educational  
system**

**COVID-19 has affected various sectors, especially education, which has undergone radical changes that led to the adoption of blended education as an alternative to the traditional mode, to ensure that education is delivered to students at all levels.**

**In the following interview with H.E. Dr. Madiha Bint Ahmed Al-Shibani, Minister of Education, we have a look at this system, when it started, and what advantages and limitations it has.**

**Why has the Ministry resorted to blended learning, and what steps were taken prior to its implementation?**

Blended learning is a form of education that combines traditional (direct) education in the school, and e-learning in one system, thus bringing together their characteristics to achieve the desired educational goals. Teachers deliver part of the curriculum content directly to students, while completing and enriching the remaining part by employing technical applications and programs to provide study materials and assignments for self-learning. The Ministry has applied this system of education for many reasons, the foremost of which are:

- To ensure sustainable learning, as one of the options in support of education.
- To cope with the current exceptional situation of the COVID-19 outbreak, and the inability of both teachers and students to attend classes on a daily basis; to preserve public health through social distancing; to facilitate

## We pave the way for expanding e-learning

the follow-up of precautionary measures to avoid the spread of infection; to reduce the number of students in the school in general and the classroom in particular so that the number of students per class does not exceed 16.

- To take utmost advantage of the characteristics of both traditional classroom education and e-learning in an integrated model.

- To minimize the impact of the difficulties encountered in using technologies and weak network connections.

- To encourage students to be present and active on the e-learning platform to receive education according to the timetable prepared by the school administration and approved study plans that may include activities, duties, projects and assignments.

- To provide positive spaces and greater opportunities for enhancing the role of technology as an instrument that could support education, transforming its structure, issues, tools, methods and mechanisms of action in the future.

The application of this system was preceded by the following phases:

- Coordinating with partners and the authorities concerned in the Sultanate to disseminate information about the pandemic to all those concerned with the Ministry's projects and services.
- Participating in the activities

of the Supreme Committee in charge of examining the mechanism for dealing with developments resulting from the spread of COVID-19.

- Updating the activities of the Crisis Management Committee in line with the current conditions in the Ministry and its educational directorates in the governorates.

- Raising awareness among employees of the Ministry through awareness messages, guidelines and instructions approved by the Supreme Committee in charge of examining the mechanism for dealing with developments resulting from the spread of COVID-19.

- Examining all possible scenarios for opening schools in the academic year 2020/2021, and proposing measures and procedures that should be adopted, through analyzing reports published by regional and international agencies. Two main committees have been formed at the Ministry level, namely:

**Technical Committee**, which is concerned with studying regional and international experiences and the frameworks of international organizations in the mechanism of returning to schools in light of this pandemic, and thus developing alternatives / operational approaches

to schools, including study plans for the various educational stages; proposing amendments to the school curriculum and educational evaluation system and how to present them; determining preventive measures for classes in terms of the density of classes, the operation of cooperative societies and student activities; preparing training packages for electronic education / evaluation and health protocols; developing a general framework for the provision of learning that includes everything related to implementation procedures and the development of action mechanisms, plans and documents; ensuring that education reaches all students in the Sultanate.

**Executive Committee**, which is responsible for developing time-bound and procedural plans for operational alternatives proposed by the Technical Committee, following up their implementation in coordination with the educational directorates in the governorates, proposing appropriate alternatives in the face of possible challenges, and ensuring the activation of health controls and procedures (health protocols), as well as plans for the proposed professional development programs.

**What is your opinion of this type of education now that it has been up and running for some months?**

In spite of the challenges posed

## Weak internet is a challenge for blended learning



by the pandemic to educational systems in the world and particularly in the Sultanate, there have been many benefits drawn in this regard, such as activating e-learning, ensuring the level of students' access to the digital world and their readiness for

for e-learning and an executive framework that combines the components of the educational process such as learning management systems, interactive online curricula, learning platforms, digital libraries, interactive content, a channel for learning

and in some schools, and the lack of devices for some students to enable them to perform e-learning tasks.

**Initially, students, parents and teachers faced some difficulties in using this system. How did the Ministry deal with this matter?**

Such challenges were expected, but they were overcome by the Ministry through the following measures:

- Disseminating ongoing development updates for educational platforms (Google Classroom, Outlook) to address emerging challenges.

- Preparing guides and video clips for mechanisms to activate educational platforms and address any difficulties encountered.

- Conducting periodic opinion surveys among school administrations and teaching staff in order to identify both the challenges of using e-learning platforms, and aspects of improvement in activating the Ministry's efforts to provide technical support, train teachers and improve Internet service, and preparing guides on the evaluation of student learning through educational platforms.

- Directing teams from the directorates and schools to provide appropriate technical and technological support for activating e-learning in general and educational platforms in particular.

- Continuous ongoing training on educational platforms.

- Activating simultaneous and asynchronous classes to facilitate learning at times that suit the learners, and setting different dates for simultaneous classes according to the educational stages so that parents can support their children.

- Following up with students who were unable to attend simultaneous lessons on learning platforms by facilitating their learning and administering short tests in classrooms.

**If COVID-19 disappears, will schools return to the usual system or continue with blended education?**

The Ministry is considering all options and developing scenarios for the next educational system based on the circumstances of the pandemic and its repercussions, and ensuring that the system is ready to employ e-learning. Every year, the Ministry forms a committee to prepare for the next academic year, and this committee examines the issue of returning to schools according to the current health conditions. In light of the global concern to address the spread of the pandemic and its social, economic and educational effects, the Ministry is about to hold a virtual national symposium on the loss of basic skills and knowledge among pupils in light of COVID-19, and its effects and

## Soon, a national symposium on loss of education under the pandemic

this type of education through utilizing educational platforms, and the teachers' ability to deliver e-learning and refine their skills in this regard. Other benefits include reviewing the study plans and mechanisms for evaluating students' learning, developing e-learning values, and raising awareness of the ethics of e-learning. The Ministry has adopted a clear-cut strategy

resources, and enriching materials and references. The available resources have paved the way for the Ministry to expand and sustain e-learning, besides other achievements, including the establishment of educational channels and platforms in which teachers' initiatives, scientific output and explanations of the programs they used in e-learning are collected so that their experience could be circulated to other teachers in the Sultanate, thus establishing professional learning societies among teachers, which is one of the tools for professional development the Ministry seeks to develop.

As for the limitations of this approach, one could cite here the weakness of the Internet, which has prevented the activation of e-learning as required in some cases





## SQU is a thinktank that benefits us in several areas

methods of treatment. It will be attended by regional and international organizations, educationalists, and educational institutions in the Sultanate. The symposium aims to identify and get acquainted with the best international experiences and practices with regards to the actual ramifications of educational loss, to reduce its negative effects, find innovative and effective solutions to rectify it during the coming period, reduce its effects in the long-term, define the role of teachers and supervisors in dealing with it, and clarify the roles and responsibilities of educational directorates, teaching, supervisory and administrative bodies, parents and the private sector. It also seeks to make use of the technical, technological and financial capabilities in place to bridge the gap caused by educational loss, in addition to identifying educational priorities, objectives, skills and knowledge to be acquired by students during the next academic year. The symposium targets all cat-

egories of the educational field and the local community.

**SQU conducts a lot of educational research and studies annually. To what extent does the Ministry benefit from them?**

There is a joint committee between the Ministry of Education and the University that addresses many common aspects, as well as how to benefit from the results of studies carried out by the University, as part of a joint effort with the Ministry or other concerned institutions. No doubt, the Ministry has built on the University's research findings to develop its educational projects and programs.

**Does the Ministry benefit from research consultancies provided by the University, and how can this aspect be strengthened between the two sides?**

SQU is a thinktank in several fields, including education, and the Ministry urges researchers to benefit from the academic and educational expertise of the Uni-

versity in terms of refereeing and reviewing studies and research tools, and nominating professors to lead technical research teams, or become members of technical committees related to their academic interests and specializations.

faced such an enormous challenge. Since the beginning of the pandemic, the teachers have made huge sacrifices to deliver teaching, raise awareness of the importance of adherence to health procedures and positive interaction with e-learning

## Teachers have made enormous sacrifices in this exceptional year

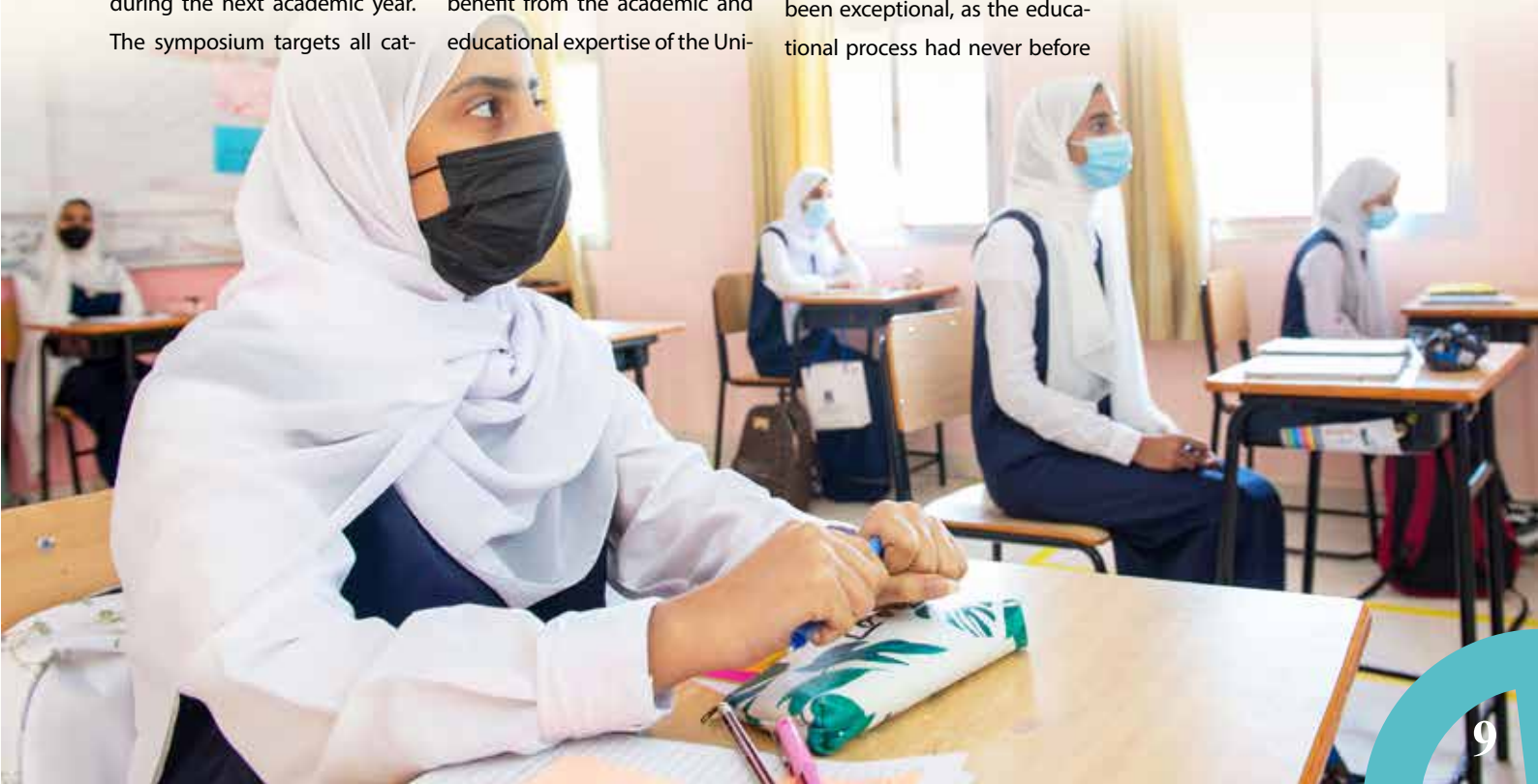
**Finally, what is your message to students, parents and teachers about this new educational system?**

The Ministry is keen to sustain the educational process in a way that achieves educational goals and ensures that our students continue to receive education smoothly. Therefore, blended education is a central component of the educational process, besides the precautionary measures that ensure the safety of teacher, student, and school environment, and benefit from the best global practices in education during this pandemic.

The current academic year has been exceptional, as the educational process had never before

platforms, produce educational content, give lessons through various TV channels, participate in training programs remotely, and develop innovative methods of teaching. The Ministry appreciates such efforts in preparing students for a better and brighter tomorrow for them and for the country.

Finally, the Ministry of Education is constantly keen to support teachers through enhancing their knowledge, providing them with the necessary teaching skills, and developing their e-learning techniques to ensure that teaching reaches all students in the Sultanate.





**Dr. Ali Sharaf Al-Musawi,  
College of Education**

# Four studies on blended and e-learning

Dr. Ali Sharaf Al-Musawi, Professor of Educational Technology at the College of Education, has carried out research into blended and e-learning.

Tawasul publishes below data from four studies conducted by the scholar.

1

## The impact of different levels of the blending the traditional and e-learning modes on academic achievement improvement

Co-researcher : Dr. Mohammed Ammar

### Its importance:

The study is important as it sheds light on blended learning from the perspective of contemporary programs at higher education institutions, and draws the attention of faculty members to the importance and effectiveness of using blended learning. It also develops a roadmap for employing blended learning to improve academic achievement among students of the College of Education at SQU.

### Objectives:

- To design three educational programs based on blended learning for an introductory educational technology course. Each program differs in blending proportions of traditional education to e-learning.
- To detect the most appropriate ratio of mixing traditional and e-learning education formats in the context of SQU.

### Results:

- Blended learning can compensate for the weaknesses of both traditional classroom teaching and e-learning.
- It has the distinction of enhancing effective communication between teachers and their students, as well as improving cooperation between students.

### Recommendations:

Attention should be paid to employing a blended learning strategy in all proportions/ ratios of blending in teaching different courses, and improving different variables, such as understanding and thinking.

## 2

## A study on blended learning

### Its importance:

The study provides a systematic model that includes methods of designing and using blended learning. It also sheds light on its impact and effectiveness in the educational process.

### Objectives:

To introduce blended (or hybrid) learning in terms of methods of design, use, and improvement.

### Results:

Blended learning is a way by which instructors can use various forms of delivery to enhance their students' learning.

Many institutions widely blend their course offerings, preferring this mode over any single one.

Blended learning gives more choices of interaction and participation to their clients and enables instructors to select tools and components from a diverse pool of blending options.

This is particularly important when it comes to practical skills in science education.

Students need to acquire these skills while practicing them in laboratory sessions, supported by pre/post online interactions to measure their achievement of instructional objectives.

A dramatic rise in using blended learning approaches will occur in the coming years, especially in workplace learning settings where it acts as a replacement for, or extension of, face-to-face environments.

The mode of delivery of course content does not affect student satisfaction or the ability of students to perform well in formal assessment.

There are technological challenges when providing support for students and instructors in the electronic aspect of the blending process.

### Recommendations:

The role of the instructor will definitely continue to shift to coaching, mentoring, and counselling. Learners will be less tied to traditional calendars for learning as they will report back daily or weekly through web cams, asynchronous discussions, desktop videoconferencing, instant messaging, and wearable computing devices.



# 3

## An Omani distance learning program to teach the Holy Quran

**Co-researcher : Salem Al Akhzami and Abdullah Al Hinai**

### Its importance:

There is a need to raise awareness about the importance of using technology to teach the Holy Quran through distance learning and provide data on the status of the distance-learning program (DLP) with regard to teaching the Holy Quran in Oman, and how to improve its methods.

### Objectives:

To investigate the usefulness of the Omani DLP to teach the Holy Quran, and identify its advantages and disadvantages as viewed by the program stakeholders (administrators, teachers, students).

### Results:

- There was a high degree of satisfaction among stakeholders on most items of the questionnaire with regard to the educational components of the program, with a mean score of 4.16.
- There were no statistically significant differences between the stakeholders' views in terms of the gender (male/female) variable.

### Recommendations:

Administrators of the program should enhance its positive aspects highlighted by the study and avoid the negative ones.

### More information :

- The DLP for teaching Holy Quran was launched in early 2015 and is supervised by the Ministry of Awqaf and Religious Affairs.
- It provides the stakeholders with multiple programs, based on a new innovative approach named after the Omani history of forts-building.
- It includes a course in Quranic Recitation (Tajweed).

### Its importance:

The study sets a theoretical framework on how to carefully plan for establishing an open and distance learning system (ODL) in the Arab world, particularly by integrating technology. It also prepares a meta-analysis of relevant literature about distance learning. It provides recommendations to overcome the difficulties that may prevent the use of ODL.

### Objectives:

- To examine the experiential status of open learning and distance learning systems in Arab higher education institutions.
- To explore the theoretical foundations for planning, designing and implementing ODL.
- To define and discuss the reality of national models of ODL in educational institutions.
- To determine the success factors and difficulties facing the application of ODL.
- To provide recommendations to solve problems in order to improve and develop ODL.

### Results:

- Open and distance learning has been a system in place in the Arab world since the seventies of the last century, but it is one that uses traditional correspondence and affiliation methods. It is in need of renewal and development.
- The private sector is leading efforts to develop the structure and spread of ODL, but there are some physical and social obstacles that limit these efforts
- The low perception of open and distance learning by community members is one of the widely observed obstacles.

### Recommendations:

- There is a need to prepare both distance learners and instructors by training them in the uses of technology and learning and teaching skills in a technology-based environment.
- Attention should be given to the educational design of curricula, courses and resources designed for distance learners.
- There should be standards of quality control and legal/administrative regulations that can have a positive impact on the officials and decision-making beliefs about ODL.
- There is a need to obtain academic accreditation and raise awareness about initiating the application of an open and distance learning system supported by technology.



## **Blended education ... in line with Oman Vision 2040**

**“Inclusive education, lifelong learning, and scientific research that lead to a knowledge-based society and competitive national talents” is a strategic direction of Oman Vision 2040. It underpins His Majesty Sultan Haitham bin Tariq’s keenness to ensure quality education that keeps pace with modern advances and contributes to raising a high-achieving generation that demonstrates qualities of innovation, creativity, mental revival, and impressive accomplishments. In his royal speech the Sultan stressed that: “We will also provide the education sector with all means of empowerment, since it is the basis upon which our children will be able to participate in meeting the requirements of the coming phase of development.”**

**In keeping with the awareness of the importance of education, the school year 2020/2021 has been announced as the year of blended education. What is happening today may make blended education the new normal. So, what is blended education, and what are its benefits, disadvantages, and the best ways to take advantage of it to the fullest? What basic steps has the University taken to apply blended education in its courses? Can this type of education become the norm and eventually replace a more traditional approach? The answers to such questions will be looked at in the following discussion.**

### Blended Education

In addressing these questions, Tawasul interviewed a number of concerned academics. First, we met with Professor Sobhi Nasr – College of Science – who defined blended education as that in which both e-learning and face-to-face education occur in the classroom. Consequently, it focuses on the importance of obtaining information remotely by electronic means, on the one hand, and critically examining such information by developing the skills of critical thinking, creativity, analysis, and communication, on the other. Blended education, together with its audio-visual resources, illustrations, and animations, has shifted teaching from lecturing into a more interactive style, with visual and auditory aspects that make the educational process more attractive and helpful for students to access the content without having to browse references and textbooks.

## Dr. Al-Rabaani: SQU has trained academics to prepare and use teaching programs.

### Its benefits and features

As for the advantages of blended education over the traditional approach, Professor Nasr said: "It uses a variety of means to benefit from the internet and other advanced technologies, in addition to face-to-face interaction. Therefore, it preserves the traditional method of learning, and strengthens it with e-learning, taking into account the differences between learners in their

ability to acquire and accumulate knowledge within the time and place constraints."

He added: "Blended education

ensures quality at a lower cost through the efficiency and quality of program management; universities and other educational institutions can double the number of students without the need to have new facilities in place."

Dr. Ahmed Al-Rabaani – Director of the Omani Studies Center – agreed with this, saying: "This type of education allows students to record lectures, retain information, and retrieve it anytime, and improves communication between students and academics. It also ensures flexibility in terms of classroom availability and timetables, and allows local

organised manner.

### Minimising negative effects

Meanwhile, Dr. Abdullah Al-Shabibi - College of Engineer-

## Prof. Nasr: Updated education strengthens students' mental and intellectual abilities.

ing – talked about the need to overcome the potential negative effects of blended education, saying: "They vary from one college to another, given the nature of the courses offered. One disadvantage of distance learning is the lack of personal interaction between the student and teacher and even between peers; conversely, in the classroom the teacher can better address any difficulties in understanding the subject in a timely manner. Likewise, the practical aspect, which is important in science-based colleges, can only be realized through class learning. However, some scientific techniques can reduce such negative effects."

Prof. Nasr shed light on the requirements that could mitigate the negative aspects of blended education. These include: "Providing adequate financial resources and expertise for faculty members, building a technological infrastructure, enabling students to bear the cost of blended education, and updating the quality of education for its impact on strengthening mental, intellectual, cultural and creative abilities. This results in graduates acquiring knowledge, access to technology, and creativity in various

fields of the arts and social sciences."

Highlighting the importance of developing the educational process, Al-Harthi stated that: "The best methods of educational design should be followed in choosing the most suitable programs to achieve the learning objectives of the courses, and enable students to use the necessary learning skills, study strategies, and time management to properly meet the requirements of blended education."

### The University's role in blended education

Al-Rabaani reviewed the University's measures to have the blended education system up and running. He stated that: "Technology has played an important role in the University courses; academics have managed to use technology in their instruction; training courses and technical support have been offered continuously for teaching staff to enable them to use a package of applications and programs; and mechanisms have been developed to help students who do not have access to the internet or have a weak connection."

On this issue, Prof. Nasr mentioned that: "The University has provided many digital educational resources, such as innovative curricula, study programs, and alternative educational pathways for under- and post-graduate students at the University; it has facilitated these services by online and distance learning, and provided short courses for its employees on the skills required in blended learn-



ing; examples are the Moodle the flipped classroom technique

## **Dr. Al-Harhi: both Moodle and face-to-face learning in my courses.**

and Google Meet platforms.” Al-Harhi reflected on the University’s readiness for blended education last spring, saying: “In the past the University did not follow this system, but rather moved completely to e-learning, since the option of blended education and students’ attendance at the University still posed a health threat to everyone. Before the pandemic, some teaching staff used the blended learning method; for example, I used both Moodle and face-to-face teaching, so that part of the course was scheduled in a computer lab whereby students engaged in e-activities, and the rest of the course took place in a regular classroom. I also used

whereby a previously recorded lecture was viewed by the students at home, and we focused in the classroom on additional applications or explanations of the subject.”

### **The future of education**

On the potentials of educational institutions to transform education in the future into a blended one, Prof. Nasr said: “In some cases, universities may be able to develop and deliver some courses and programs in science-based and engineering colleges through blended learning, and in social science colleges completely through distance learning, but first, we need to review current experiences and seek the opinions of

students, parents, and teaching staff. Many open universities around the world have adopted this type of education, including the British Open University, Arab Open University, and the Open Universities in Turkey, India, and the U.S.A.”

Al-Harhi pointed out that: “This

ing: “There is no doubt that the world is shifting towards this type of education because of the current challenges, such as a growing population and the rising cost of education.”

However, Al-Rabaani had another view: “There seems to be a move towards virtual learn-

## **Dr. Al-Shabibi: The world is shifting towards blended learning due to a growing population and the rising cost of education .**

type of education is widely available because the basic principle is to diversify teaching methods, integrate new methods, and give students more space for self-reliance and self-learning. Therefore, I think that blended education is currently dominant, and will continue to be so for years to come.”

Al-Shabibi agreed with her, say-

ing, or distance learning, rather than blended learning, and we have to be prepared for this as soon as possible; some educational institutions have already introduced it, and so I think traditional education will be abandoned eventually.”



**Dr. Hamed Al Sinawi,**  
**Senior Consultant, Old Age**  
**Psychiatrist - SQUH**



# Online psychotherapy reduces COVID-19 invoked anxiety

## Objectives:

- Ameliorating COVID-19 precipitated psychological distress.
- Assessing the efficacy of therapist guided e-therapy versus self-help e-mail delivered therapy on COVID-19 invoked symptoms of anxiety and depression.

## Method:

The study sample consisted of 60 participants surveyed for symptoms of anxiety and depression. They were divided into two groups:

**Group I:** The participants in the intervention group received one online session per week for 6 weeks from psychotherapists, who utilized the principles of Cognitive Behavioural Therapy (CBT) and Acceptance and Commitment Therapy (ACT) interventions.

**Group II:** The participants in the control group received an automatic weekly newsletter through e-mail containing self-help information, tips to cope with distress, and behavioural tips from principles of CBT.

## Results:

While the symptoms of anxiety and depression were reduced in both study groups, the reduction was higher in the intervention group.

## Conclusion:

- This study provides preliminary evidence to support the efficacy of e-therapy for ameliorating symptoms of anxiety and depression during COVID-19.
- Both therapies could be considered as viable options.





## Two studies on SQU's implementation of Moodle

**Dr. Muhammad Ali Shahat**, Assistant Professor of Curricula and Science Teaching Methods and **Dr. Muhammad Al-Alamri**, Professor of Curricula and Art Education Teaching Methods, have conducted two studies on using the distance learning platform of Moodle at SQU during the COVID-19 pandemic.

The studies are particularly significant as they come in response to recommendations by many local and international experts who underline the necessity of conducting research that focuses on distance learning and teaching, a trend which has been adopted in most universities during the pandemic. Special attention has to be given to assessing the practices of distance learning and teaching, which are a vital requirement for the national economy these days.

Tawasul sheds light below on the two studies:



1

## Assessing Moodle as a platform, from the viewpoint of faculty members.

To evaluate SQU's implementation of distance learning using the platform, in light of the variables of gender, teaching experience, and technological skills.

Objectives

◆ Faculty members believed that the experiment was moderately effective.

◆ There were differences in the opinions of faculty members according to gender and technological skills, but not teaching experience.

Results

◆ There is a need to deliver training programs and workshops to raise awareness of the technological culture.

◆ Distance e-learning management systems need to be employed, and e-courses designed.

Recommendations

To determine the faculty members' opinions on the challenges facing SQU's implementation of distance learning using Moodle and the proposals for developing it, according to the variables of academic rank, teaching experience, and technological skills.

Objectives

2

## The existing challenges, and proposals for development

◆ There were challenges of a moderate degree that emerged during the experiment, from the faculty members' point of view.

◆ There were statistically significant differences between the opinions of faculty members according to the variables of technological skills, academic rank, and teaching experience.

Results

There is a need for a clear alternative plan to deal with various crises that might arise in the future.

Recommendations

# Measuring diabetes, fat and iron for those recovering from Covid-19

Researchers from the College of Medicine and Health Sciences at SQU are conducting a study on people who have recovered from Covid-19 and its symptoms after being home isolated. The research aims to measure indicators of the presence of metabolic disorders after recovering from the disease. These include indicators of diabetes, fat and cholesterol disorders related to heart disease and clotting, changes in the level of iron in the blood, and the correlation of such factors with stress and immune changes.

Hopefully, the study results would inform the Sultanate's efforts to address the pandemic and its health consequences.

Some international research has indicated the prevalence of metabolic and immune disorders related to diseases such as diabetes and heart disease, in some patients who have recovered from Covid-19. Early detection of such changes will enable them to take appropriate preventive measures, or necessary treatment, to avoid potential complications in the future.

# Treating oil field produced water

SQU researchers have applied direct contact membrane distillation (DCMD) for the treatment of oil-field produced water.

This technique could help increase the production of desalinated water and reduce the risk of depleting groundwater reserves, as well as protecting them from contamination by discarded water.

The study was conducted by Dr. Muhammad Al-Abri, Dr. Suleiman Al-Obaidani and Engineer Moza Al-Salmi. The obtained results indicated the great potential of DCMD to treat hypersaline oil-field produced water with an

overall rejection of salts higher than 99.9%, and that of total organic carbon (TOC) greater than 93.3%. This was due to the presence of volatile organic compounds in oil-field water. A simple washing of the membrane with de-ionized water was found to be an effective method for cleaning the membrane and restoring the permeate flux, indicating the absence of irreversible fouling.

The study was a partnership between SQU, Petroleum Development Oman (PDO), the Middle East Water Research Center in the Sultanate and Complutense University of Madrid, Spain.


## The social impact of COVID-19 on mothers

Dr. Magdi Abd Rabbo - College of Arts & Social Sciences

While fathers play a big role in bringing up children, mothers actually carry the greatest burden of responsibility through pregnancy, breastfeeding, raising, and taking care of their children, sometimes until their graduation from university. Now that contemporary social life has become so complex, working mothers have become even more engaged in ensuring the progress of their children at school. They may have to spend at least six hours at work, and then come home to attend to the needs of their families, and maybe extended families.

Working mothers have been facing a so-called conflict of roles, a phenomenon whereby they find it difficult to reconcile the role of wife and mother of several children, and the demands of a job that requires eight hours of work. This juggling may be viewed not only in terms of the number of roles they assume, but rather, in how effective they can be in addressing the challenges associated with each role. The mother's role in raising her children is important for several reasons, such as providing for their upbringing, but more so in how successful she can be in satisfying their educational, emotional, and psychological needs, and communicating with them on a daily basis within the limited time available to her. In addition, she is expected to shield her children from the harmful effects of social media. This is a huge responsibility, which means that both parents need to play their roles in such a way to achieve their common goals.

The impact of the current crisis on mothers in particular, and families in general, should make everyone prepared to face any difficulties; precautionary and preventive measures should be followed exactly as prescribed, children encouraged to take responsibility and understand the realities, and fathers urged to help working mothers resolve the conflict of roles.



**CET Director:  
E-learning  
is not new to  
SQU**



COVID-19 has overshadowed all our lives, and this has particularly been felt in the field of education, which has brought about a quantum leap in the use of different types of technology in education to ensure uninterrupted learning and teaching.

E-learning, in all its forms, is the main mode that has been widely employed all around the world after the outbreak of the pandemic, and it has become the solution for sustainable education, allowing information to flow freely between the teacher and learner.

In this interview with Dr. Hamood Al-Muqbali, Director of the Center for Educational

## COVID-19 made Moodle a key teaching tool

Technology (CET), we shed light on the necessary measures taken by the University to activate e-learning during the pandemic.

Is e-learning something new to the University?

Not at all! A beginning was made in 2001 when we launched the e-learning management system, WebCT. In 2009, the University permanently switched to the open-source tool, Moodle, complementing and supporting the traditional teaching and learning processes at the colleges and Center for Preparatory Studies.

Are there any policies set for

e-learning at SQU?

We have always been interested in e-learning governance, and therefore a policy for activating the e-learning system for users was approved in 2016, which includes procedures for using the system, rights and respon-

sibilities, methods of offering e-courses, intellectual property rights, and other important aspects. In 2019, the University

endorsed the academic regulation system of e-education, which includes standards and procedures for offering and teaching e-courses.

So, what is new after the outbreak of the pandemic? Ever since the outbreak in early 2020, Moodle has become the main platform for teaching at the University.

What is the role of the Center in

## To help students, SQU library resources are connected to e-learning system

improving the skills of users of the e-learning system? To improve the skills of faculty members and students in

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## All training programs are now based on distance learning

using the e-learning system and designing e-courses, the Center has regularly held various workshops. During the pandemic, all training programs for using the e-learning system have, instead, been given remotely. The training courses and guides for using the system tools have also been redesigned and arranged in a way so as to be accessible and easy to use. The guides, in both Arabic and English for all the aspects and activities, have been uploaded to the e-learning system to be available to all faculty members and students with video illustrations on the Center's YouTube channel.

**Are there other programs attached to the e-learning system?**

In order to integrate the systems related to e-learning and link them to Moodle, the University has been using the Turnitin text matching system since 2011. This year, a subscription to the MathType software application was bought; it is used in editing and creating mathematical equations. Additionally, the main library's resources have been linked to the e-learning system to facilitate students' access to course readings without the need to search for them.

**What about learning by smartphone?**

The e-learning system includes an application for smartphones and other tablets that run on the Android and Apple systems, which enables a student to interact with e-courses, hand in tasks and assignments, browse educational content, and communicate easily with other students and faculty members.

**What about programs for simultaneous lectures?**

The University has provided the BigBlueButton visual communication application, as part of the Moodle system, in addition to Google Meet that allows direct meetings and lessons to be held through the accounts of faculty and students within the G-suite

service. These tools also provide for concurrent lectures to be recorded and included later in e-courses in order to be accessible to students at any time.

**In your opinion, have such tools produced the desired outcome in education?**

Yes, they were instrumental in allowing teaching, as well as the exams and various other assessment requirements, to continue during the spring, summer, and fall semesters in 2020. Along with other visual communication techniques, they were used by the colleges in the exams and discussions of master's and doctoral dissertations without any interruption.



**Omar Al Omari**  
**College of Nursing**

# Older students are at greater risk of depression, anxiety, and stress

A team of scholars from several Arab countries, headed by Dr. Omar Al Omari – College of Nursing – has carried out a TRC-funded study on the prevalence of depression, anxiety, and stress (DAS) among youth under COVID-19.

## The aim of the study was:

To explore the prevalence of DAS among youth and to identify the associated predictors.

## The project consisted of two stages:

### Stage I:

- A cross-sectional descriptive design was used to assess the relationship between depression, anxiety and stress during the pandemic.

- The target population was young people aged between 15-24.

- An online survey was distributed using social media platforms to recruit participants from different countries in the region.

### Stage II:

- A structured questionnaire was used to collect information about participants' socio-demographics, including age, gender, educational level and type, and presence of family members, friends, or colleagues with COVID-19.

- The previous history of depression, anxiety and medication for depressive syndrome was examined.

- Frequency of watching news about COVID-19, and internet use was measured.

- The Depression, Anxiety, and Stress Scale (DASS) was used because it is available in the public domain, the Arabic version has been validated, it is sensitive to youth, and it measures depression, anxiety, and stress in the same survey.

## The findings suggest that:

- COVID-19 has no significant impact on the selected DAS variables.

- The prevalence of anxiety ranges from 33.1% in Saudi Arabia to 51.6% in Egypt, with a total prevalence of 40.5% in the six countries.

- The prevalence of depression in the current study ranged from 47.9% in Saudi Arabia to 64.8% in Egypt, with a total prevalence of 57%.

- The lockdown and moving to online learning have increased the use of the internet from an average of 5.46 hours a day before the pandemic, to 9.74 hours a day. Therefore, healthcare organisations in collaboration with ministries of telecommunications are strongly encouraged to design and provide specific psychological promotion programmes for youth during this pandemic with the aim of promoting their mental health.

- Older students are at greater risk of DAS. Youth with health and academic problems were found to have greater stress.

## The study recommends the following:

There is a need to regularly screen youth and identify the newly evolved variables associated with DAS.

Parents need to let young people express their feelings and fears about the current situation. They also need to make an effort to increase family time to provide youths with a sense of security.

This study is the first of its kind to collect data from six different countries using a standardised method, and one of the few studies to investigate the prevalence of DAS during COVID-19.

## Balancing work and children's education

Dr. Nour Al-Najjar - College of Education

Mothers have, to a large extent, replaced the teacher in providing a learning environment for their children after the closure of schools. This role has become particularly challenging for working mothers, who have to balance work and family commitments. Very often, they find it difficult to manage time and attend to the needs of their children, who usually prefer to play with their siblings or spend their time with electronic devices.

All of this puts a huge pressure on mothers, especially with the introduction of e-learning in schools. First-cycle pupils do not know how to enter the learning platform, and watch and follow up assignments, duties or content. While at work, women worry about their children back home and how they might have to struggle to access the platform, which forces many of them to take leave in order to guide their children through this process. Sometimes, they rely on someone at home, like a maid or family member, to help their children in this regard.

Therefore, I think we should prepare for any future crises by sustaining e-learning, even after the end of the pandemic, and providing students with the necessary skills. We also need an agency run by experts in crisis and risk management at the state level, to set plans and scenarios for addressing future disasters and crises in the country. In addition, we need to have flexible laws that take into account the status of working women as mothers, so that they can work from home and take care of their children, without affecting work and family cohesion, which in turn will be good for the whole community.





**Dr. Laila Al-Salmi**  
**College of Education**

**Dr. Laila Zahir Al-Salmi – Assistant Professor and Head of the Department of Early Education at the College of Education – has conducted two studies, namely, “Distance Learning for Female Students of Early Education Department: Challenges and Advantages” and “E-learning from the Parents’ Perspective at the Child Care Center”. More details on the studies are provided below:**



# 1

## Distance Learning for Female Students of Early Education Department: Challenges and Advantages

Co-researcher : Maryam Nasser Al Maamari

### Objectives

- To review the experience gained by students from distance learning.
- To identify the educational challenges faced in distance learning.
- To utilize and develop the acquired know-how.
- To find solutions to the challenges.

- The students said they benefited a lot from distance education as they acquired online teaching and learning experience, and also learned how to communicate with children using modern technology.
- The study affirmed the role of distance learning in refining the skills of preparing lessons for nursery and first-cycle children, which increased the children's motivation to learn in spite of the reluctance of parents to engage their children in such learning.

### Results

### Recommendations

- There is a need to address the challenges facing students, and provide assistance for equipment maintenance.
- Community awareness should be increased about the importance of pursuing children's education under all circumstances, and the effectiveness of targeted education to improve children's skills.
- Teachers should be able to learn remote communication skills with children in order to sharpen their remote teaching experience.
- It is important to develop electronic educational content for the early education stage to meet modern educational requirements.
- Intensive courses should be offered to teachers to learn how to prepare virtual, recorded lessons or educational animations for children, used to enhance learning under all conditions.

# 1

## E-learning from the Parents' Perspective at the Child Care Center

Co-researcher : Dr. Ali Tekin

### Objectives

- To examine the parents' views on distance learning for the children at the Center.
- To identify the practices preferable in distance learning for early childhood education in terms of synchronization or otherwise.
- To investigate the parents' willingness to contribute to the children's education.
- To look into the main activities that children did at home during the pandemic.

- 77.3% of the study sample expressed their desire to have their children continue to receive distance learning, while 22.3% showed unwillingness to do so.
- Parents prefer children's asynchronous communication with the teacher.
- All parents are ready to contribute one hour a day to distance learning of the children.
- The main activity that children did at home during the pandemic were playing, either with their peers or alone, while watching television was the second type of activity.
- Parents are aware of the importance of education, even though remotely conducted, for their children and of helping them.

### Results

### Recommendations

- It is imperative to keep providing education for children.
- It is necessary to develop electronic educational content for child education centers to cope with current developments.
- It is important to offer parents educational courses to inform them about their role in teaching children in all circumstances.



# An alternative assessment to alleviate e-learning anxiety

Dr. Mustafa A. Khalaf, Dr. Taghrid Turki Al-Said  
College of Education

A research team from the College of Education, led by Dr. Mustafa Khalaf, has investigated psychological problems and their relationship to pressures of e-learning and e-assessment in a sample of Education College students.

The study is particularly significant as it seeks to fulfil quality criteria for e-learning and its development, through preparing interesting educational programs that take into account the psychological dimension of students, in addition to adapting students to this change to reduce the psychological burden of distance learning.



# An alternative assessment to alleviate e-learning anxiety

## The researched aimed to:

- ◆ Determine the most important psychological problems due to COVID-19 and their prevalence
- ◆ Identify the significance of difference between males and females in their perception of such problems
- ◆ Uncover the nature of correlation between pandemic-related psychological problems and the pressures of e-learning and e-assessment.

## To achieve these goals, the following tools were used:

- ◆ Building and codifying the scale of pandemic-related psychological problems
- ◆ A questionnaire on the pressures of e-learning and e-assessment
- ◆ Data collection by Google Form from 125 male and female students

## The results suggest the following:

- ◆ Psychological problems due to COVID-19 (emotional, behavioural and physical problems, fear of infection, social isolation, lack of motivation) are spread among the sample population to a moderate degree.
- ◆ There is a statistically significant, positive and moderate correlation between psychological problems and the pressures of e-learning and e-assessment.
- ◆ There are no gender differences in each of psychological problems, e-learning pressures, and e-assessment pressures.

## The study recommends:

The necessity for teachers to activate alternative evaluation methods, which could help reduce students' anxiety about e-learning and e-assessment.





**Wajeha Al-Ani**  
**College of Education**

# Moodle develops students' skills

Education is a major spearhead in the Omani renaissance and Vision 2040, which aims to establish a high-quality educational system, community partnerships, and an effective national framework for research, creativity and innovation that could contribute to building a knowledge based economy and society.

In this regard, Dr. Wajeha Al-Ani, from the College of Education, has carried out a study to encourage SQU faculty members to use Moodle to improve the quality of teaching, thus enhancing student learning achievement.

Moodle is a free, open-source and e-learning platform, using PHP and MySQL. It provides teachers, administrators and learners with a powerful, secure and integrated system to create educational experiences, or a specialized e-learning environment on demand.

As for the research objectives, Al-Ani said: "The study aims to investigate to what extent blended learning using Moodle can determine SQU students' achievement,

examine the dominant Moodle factors that lead to students' achievement, and identify the obstacles facing such an approach."

She pointed out that her theoretical framework was based on a socio-constructivist pedagogy, being a learning theory in the digi-

tal age, whereby educators and students jointly explore, inquire, critique, and build their own knowledge effectively and efficiently. The study followed the constructivist approach, which is about people knowing the world through their framework and helping them to organize and interpret their perceptions.

A sample of 283 students was randomly selected from all SQU colleges, she said, adding that it represented the students who were using Moodle as a medium of blended learning on the courses.

The results revealed that using Moodle in learning was around the average level of effectiveness according to the theoretical mean of 3.00 as a criterion to judge the result. The means ranged from 3.216, which was the highest mean of the distribution for using Moodle which makes students more motivated toward learning, followed by student collaboration and communication at 3.199. The students' learning achievement was rated between 3.164 and 3.46.

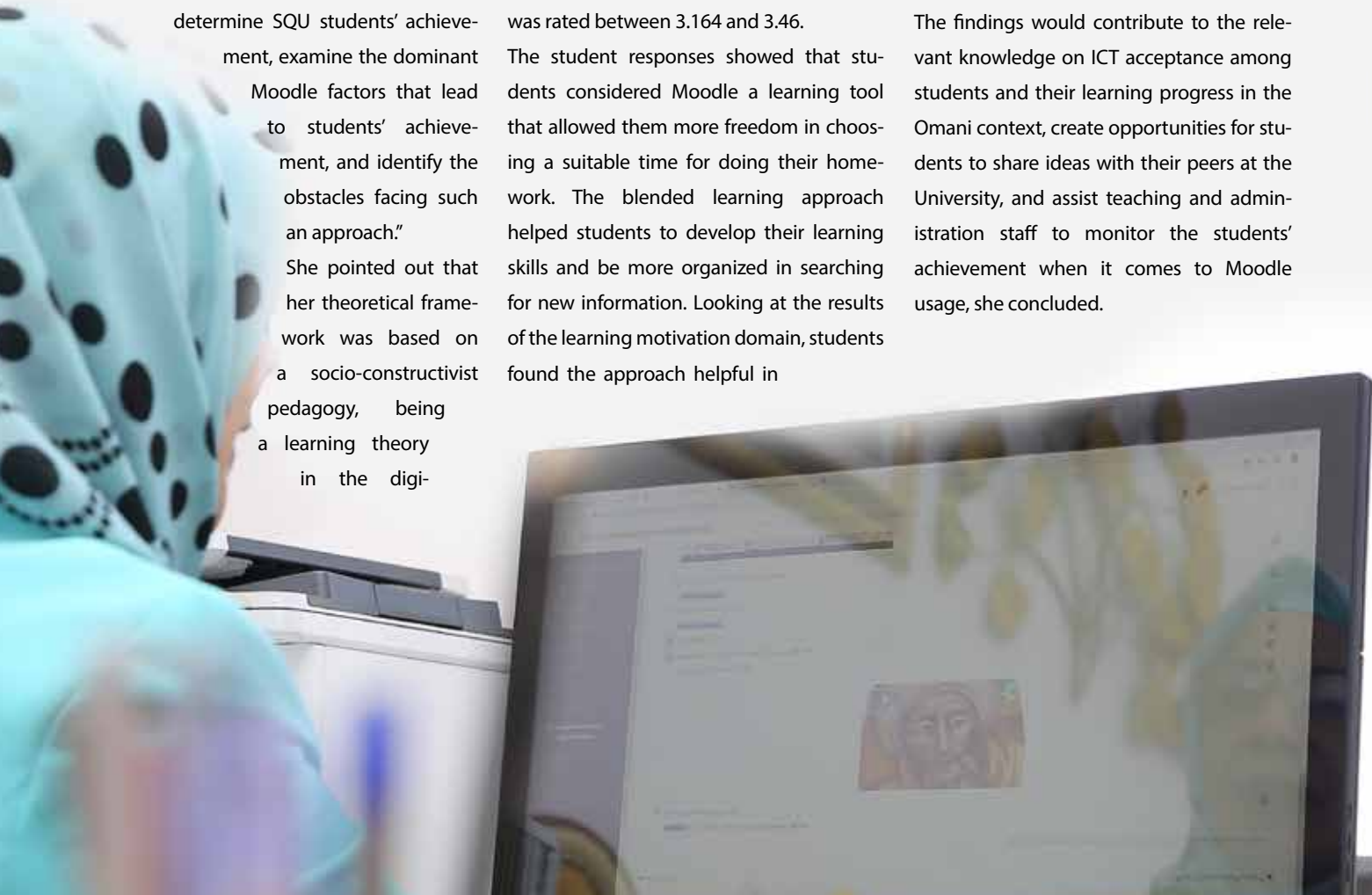
The student responses showed that students considered Moodle a learning tool that allowed them more freedom in choosing a suitable time for doing their homework. The blended learning approach helped students to develop their learning skills and be more organized in searching for new information. Looking at the results of the learning motivation domain, students found the approach helpful in

tracking lecture notes and reading materials, as well as developing their skills in browsing through websites.

Concerning the study recommendations, the researcher said: "The findings provide support for transforming traditional learning into a blended learning environment at SQU; the study could be further developed as a tool to effectively assess teacher use of Moodle in a similar environment, such as a private university in the Sultanate; the data collected could provide the service Center of Educational Technology at SQU with some information that helps in designing workshops for developing the skills of the teaching staff in using Moodle in teaching."

She stressed that the findings would help decision makers to determine the need for transforming the learning environment in the University from face to face to blended learning. Moodle would increase the students' learning responsibility through social interaction, she said.

The findings would contribute to the relevant knowledge on ICT acceptance among students and their learning progress in the Omani context, create opportunities for students to share ideas with their peers at the University, and assist teaching and administration staff to monitor the students' achievement when it comes to Moodle usage, she concluded.





# The Technical Efficiency of Leading Vegetable Crops in Oman and their Contribution to Economic Diversification

Oman Vision 2020 emphasized the need to diversify the sources of the economy of Oman and aimed at substantially increasing the contribution of non-oil sectors to GDP. Traditionally, agriculture has always been one of the primary sources of employment since the 1960s and even earlier. Today, it provides about 5 per cent of the total employment to Omanis. Therefore, Oman Vision 2040 aims to increase agricultural growth by 4.5% annually to contribute 3.1% to the GDP of Oman. This target seems quite ambitious but achievable if focused on efficient technologies such as dual-purpose commodities, achieving food security goals as well as serving as cash crops that generate employment and income.

Technical efficiency analysis of selected crops indicated the ability to improve crop production with the present state of technology in-line with regional food security objectives. Agricultural commodities produced in Oman include date palms, fruit, vegetables and livestock. It is interesting to note that all over Oman vegetable crop production has increased from 313,000 to 818,000 tons in a span of five years from 2013 to 2018. It amounts to almost triple, showing tremendous scope for the future. Vegetable production, therefore, has the potential to expand and contribute significantly to economic diversification.

Therefore, the broad objective of this research is to increase the productivity of selected veg-

etable crops such as tomato, cabbage, eggplant, okra and capsicum in Oman. Vegetable crops are selected based on the Food and Agricultural Organization report (FAO, 2008) and the Ministry of Agriculture and Fisheries, agricultural census (MAF Census, 2012/2013). Development of this sector promotes food security, provides a decent source of income to Omanis in the rural areas and it is also environment friendly. The following three objectives have been identified.

The first objective is to assess the nature of the production efficiency of important vegetable crops in Oman. The efficiency of the farms is estimated based on the sample picked during the survey of the vegetable farms.

The second objective is to identify factors that influence the production efficiency of these vegetable crops in Oman. The inefficiency model is estimated, and the factors that influence production efficiency are identified.

The third objective is to propose specific corrective policy measures geared towards helping farmers to improve their production efficiency. Some specific corrective policy measures are proposed towards helping farmers to improve their efficiency.

In a nutshell, the aim is to improve crop production with the present state of technology. Investment on educating the farmers is crucial to achieve improved agricultural productivity. Besides this, mechanisms that facilitate farmers to get access to better ways of farm-

ing through extension services and improve market information should be explored. This study places emphasis on improving technical efficiency of household farms to substantial productivity. Therefore, the current level of inefficiency in production calls for better attention of policymakers and researchers in tackling the sources of these inefficiencies to improve the welfare of producing farmers.

The data for the model that was obtained from the survey comprised cross-sectional data with a sample size of 537 observations. The sample covered four governorates, North Al Sharqia, North Al Batinah, South Al Batinah and Al Dakhiliya. Evaluation of Technical Efficiency (TE) was conducted using a Trans-Logarithmic function (TL) with SHAZAM comprehensive economics and statistics package to achieve meaningful results. Technical efficiency for chosen crops in this thesis, based on selected samples, indicated the ability to increase production drastically of tomato output by 35.8%, eggplant output by 19%, capsicum output by 13%, okra output by 30% and cabbage output by 15% with the current level of input employed by farmers. Technical efficiency analysis indicated a potential increase in the production of vegetables with the present state of technology, thereby, contributing significantly towards achieving the objectives set in Vision 2040.



