

DIGITAL TRANSFORMATION IN HIGHER EDUCATION IN JORDAN

2020

Evaluation of Online Teaching Within COVID-19 Era

Benefits, Opportunities and Challenges



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Table of Acronyms

- 1. MoHE: Ministry of Higher Education and Scientific Research in Jordan.
- 2. EC: Early Career.
- 3. PC: Personal Computer.
- 4. BBRC: Biocon Bristol-Myers Squibb R&D Center.
- 5. MRC: Medical Research Council.
- 6. NIH: National Institute of Health.
- 7. PPT: Power Point Presentation.
- 8. STEMM: (Science, Technology, Engineering, Maths and Medicine).
- 9. BC: British Council



EXECUTIVE SUMMARY

This report outlines the results from an online survey conducted with 36 Early Career Academics⁽¹⁾ from Jordanian universities, almost **86%** of the participants are from our Early Career Development programme⁽²⁾ which ran in 2019 as part of our Higher Education programme.

The survey evaluates the current situation related to online teaching as a result of COVID-19. It captures the main benefits, opportunities, and challenges which Early Career Academics are facing; and we can see from the report that this comes under some elements which are: online teaching, digital literacy, students' engagement, transfer of knowledge and assessment.

The impact of online teaching affected both academics and students. The below academics' responses affected the challenges they face and what their students are facing. Connectivity and technical issues related to delivery of online teaching was one of the elements faced by academics; whereas receipt of information and students' engagement are the main challenges as most of the students preferred the face to face method of delivery specifically to the practical subjects.

Academics in many universities are supported by their departments to deliver virtual classes effectively through providing them with online platforms and virtual classroom training. In addition to this, academics supported the delivery of practical elements by providing students with educational videos, notes, manual on practical work and recording the classes. Other academics shared best practices between them to overcome some issues with the practical classes' delivery.

Some Academics found the practical elements hard to be delivered online and the support by their department either weak or not available. We can see that the new model of delivery is quite challenging where it comes to work life balance, connectivity and other essential elements for virtual delivery. Yet, it has many positive factors for academics such as, it is a new way of delivering classes, innovation and creativity. As a result, important factors are highlighted, and some specific training is required so that academics can overcome the challenges and enhance the delivery of virtual classes.

(1) STEMM Early Career is PhD holder working at a Jordanian University as an Assistant Professor and Lecturer for 5 years or less (since completing their PhD).

(2) The British Council Jordan in cooperation with the Ministry of Higher Education and Scientific Research has launched the Professional Development Training Programme for STEMM Early Career Academics in Jordan's Universities in 2019. The programme entails a practice-based signature learning experience (SLE) for STEMM specialised early career academics employed in Jordanian universities to develop their fit-for-purpose teaching and research excellence as well as engagement and leadership.





INTRODUCTION

This report presents the results of an online survey carried out end of September 2020, by the STEMM based Early Career academics of the Jordanian Universities.

The survey, analysis, report and design format was conducted and completed by British Council Jordan Partnerships team which are comprised of Nour Aljumaili, Abeer Ahmad, Bayan Abdullah and Farah Alhasan.

The aim of the survey was to collect information related to online teaching/ virtual delivery of classes and current issues related to COVID-19 and to help British Council shape their Early Careers Development programme



The chart shows that respondents were more male than female.



The Early Career academics who filled out the survey are from 9 private and 11 public universities(3).

The specialisations of academics who were part of the survey:

- Information System
- Analytical Chemistry
- Computer Science
- Animal Production/Nutrition
- Plant Production
- Business Information Technology
- Accounting
- Biology
- Telecommunications Engineering

- Electrical Engineering
- Industrial Engineering
- Mechanical Engineering/Nano Technology
- Mathematics
- Dental Technology
- Civil Engineering
- Software Engineering
- English Literature

INTRODUCTION

This report is structured around six main sections:

1) Online teaching development

The first part shows the affect of online teaching on academics. It also effects how effective the hybrid learning at universities. Finally, it presents the students online engagement.

2) Students Engagement via virtual online classes

This section shows the challenges academics face in virtual delivery and how they are trying to overcome this challenge and this is one of the main elements that they need training in

3) Transfer of knowledge

The third part focuses on the difficulties that students face in terms of receiving information via classes. It also demonstrates the main challenges that academics face due to virtual classes.

4) Assessment for delivering of virtual online classes

In the forth section, the focus is on the specific criteria that has been used for students assessments and how academics populate specific methods for assessing students. It also demonstrates different platforms that academics have been using.



5) Digital Literacy

This part shows if universities provide any specific guidelines or training to support academics with delivery of virtual classes. It also demonstrates the level of familiarity of academics with digital methods of virtual classes and what are the needed skills to enhance their knowledge in digital delivery.

6) Research

Finally, the last section includes the barriers academics face to do research and how often they do it. It also shows what is the needed support for academics for applying for grants and if they have access to data, opportunities and facilities inside universities campuses. Furthermore, it demonstrates if any university publishes any communication research with national and international Higher Education institutions in response to COVID-19.

ONLINE TEACHING

1) HOW ONLINE TEACHING AFFECT ACADEMICS.

This section represents how online teaching affects academics in different universities and the below figures demonstrate the positive and negative aspects of online teaching.

100% of the universities indicated that they published specific platform for online teaching.

Became more familiar with using updated technologies for teaching purposes. Improved learning outcomes in certain topics, encouraged students to rely on themselves and seek the information presentations. rather than just obtain it from their instructors. Saves some time e.g. transportation respect for the deadlines. Quite doable and we got more time to plan for research. resources and assignments. Spending more effort to follow up with students and more time to prepare and deliver knowledge and information. Evaluation and assessment mechanisms are not accurate as most of students cheat. Spending time in re-designing lectures and content.

Stressful, sitting long time causes back ache and dry eyes. In addition to this, you need to be online all day to answer students' questions.





- It's great to listen to your recorded
- Became more patient and have
- Improved our bank of educational



- Lack of interaction with students that may affect students understanding.
- Affect the real relations between professors and students.

HOURS OF ONLINE TEACHING THAT ARE **DELIVERED BY ACADEMICS PER WEEK**







ACADEMICS WHO RECORD THEIR SESSIONS



2) HOW EFFECTIVE IS HYBRID LEARNING AT THE UNIVERSITIES.

In this section, many universities agreed on how powerful hybrid learning is and how careful respondents should be when they select topics that would be delivered online. Some universities push the hybrid learning system to update its learning platforms and some of them assign time to train its staff on implementing online courses.



Others think hybrid learning is the best choice in all environment and it creates opportunities for online courses on long term. As well as this, some of the academics mentioned that it's a good chance for both teachers and students to try a new type of education.



However, there are some universities who find it not very useful especially when it comes to sciences courses and lab work so they prefer the face to face element. Also, there's still shorting in the infrastructure in some universities and academics are not prepared to use this approach.

Some academics indicated that the evaluation method of this system should be according to global education standards or at least the current standards. Others mentioned that hybrid learning solve just the problem of international students.

3) ADDITIONAL WORKLOAD/ELEMENTS NEEDED FOR ONLINE DELIVERY.

Looking at the responses from academics on the additional workload for online delivery questions, It shows that they are facing many difficulties which include the following: putting more time and effort to prepare online classes and engage students, handling technical issues, spending extra hours to upload all lectures on university's channels and watching recorded lectures to improve classes.

As well as this, keeping contact with students outside the teaching hours through different applications, spending more time using different tools to make sure that students understand the content very well and preparing quizzes in many formats is a headache.

Moving to the additional elements needed for online delivery. Academics indicated that training courses are needed on how to use online teaching tools and software, courses on ethics for students to minimise cheating, teach them how to respect, confidentiality of information and writing emails, e.g English language, etc.

In addition to this, providing students with the latest technology to feel that online learning can be a replacement for conventional teaching and it's not only for emergency.

On the other hand, many senior teachers have lack of understanding for online teaching and how they redesign courses specially for those who work for humanities. They are also illiterate using professional tools such as smart boards, camera, and high-quality IPad. Moreover, some software still not open to students & instructors yet appropriate digital tools for online teaching are a must nowadays.



1) HOW ACTIVE STUDENTS ARE WITH VIRTUAL ONLINE CLASSES

It's shown in the figure below, how academics see students engagement.



2) CHALLENGES FACE STUDENTS DUE TO VIRTUAL CLASSES



3) HOW UNIVERSITIES MANAGED TO SUPPORT THE DELIVERY OF VIRTUAL CLASSES THAT REQUIRED PRACTICAL ELEMENTS

The level of support provided to academics varies from university or department to another. Universities manage and support online teaching process either through connecting with students directly using survey or providing students with many digital educational tools.

Academics have supported the delivery of practical elements by providing students with educational videos, notes, manual on practical work and recording the classes. Other academics shared best practices between them to overcome some issues with the practical classes' delivery.

Some academics found the practical elements hard to be delivered online and the support by their department either weak or not available.

4) MAIN ELEMENTS USED TO KEEP STUDENTS ENGAGED IN VIRTUAL CLASSES



TRANSFER OF KNOWLEDGE

1) DIFFICULTIES STUDENTS HAVE IN TERM OF RECEIVING INFORMATION VIA VIRTUAL CLASSES

75% of the early career academics indicated that students are having difficulties in receiving information via virtual classes. Students have different levels of knowledge in using technology, this affects the information they receive and sometimes can't follow up on the uploaded materials and assignments. Also, if an academic is not used to deliver online courses, this will affect the delivery of information and will be difficult for students to understand.

One of the main difficulties is internet connectivity and speed which affect attending live classes. Some universities solved this issue by recording the classes and uploading them and if anything is not clear, they can ask the lecturers in online office hour allocated for this purpose.

Other difficulties are related to the availability of proper technology with students like personal computers, some of students are using mobiles to attend the lectures. Others face difficulties in understanding the practical lectures when they deliver online.

2) MAIN CHALLENGES FACE ACADEMICS DUE TO VIRTUAL DELIVERY

The academics are facing many challenges due to virtual delivery. Mainly the engagement of students during the online classes, also the direct feedback from students on lecture is not available.

Other difficulties are related to the course design which is not suitable to be delivered online, changing the course design requires administrative approval which can be impossible to get in timely manner. Another two challenges are delivery of practical classes online and the fairness of online assessment/evaluation.

Of course the technical issues related to the infrastructure of teaching platform and the availability of technological tools which support the delivery of online lectures. As well as this, delivering virtual classes from home for students and academics sometimes is not suitable due to home environment and noise.

On the other hand, many academics indicated that they prefer the online teaching and have no difficulties.



ASSESSMENT FOR DELIVERY OF VIRTUAL ONLINE CLASSES

1) NEW METHODS THAT ARE USED BY ACADEMICS FOR STUDENTS' ASSESSMENT

The figures below show different criteria academics for students assessments.



Some academics indicated that the criteria they set are not effective. Others said that there are not standard criteria. It depends on the instructor.

2) PLATFORMS THAT ACADEMICS CURRENTLY ARE USING



Above are the platforms used for assessing students. Some academics use one platform and others use more than one.

3) HOW ACADEMICS MANAGE TO POPULATE SPECIFIC METHODS FOR ASSESSING STUDENTS

Some academics indicated that they invented a simple method for assessment by delivering material in small chunks and then ask students to do small tasks during the semester. Finishing all tasks will draw the full picture of a project they designed specially for evaluation others are using existing methods for instance, assignments, presentations, reports, absence, midterm exam, forms, assays, oral & scuffle questions and final exam.

Other academics said that they are using formative assessment through posting case study analysis and final exam. Also, they indicated that by diversifying questions between different groups within the same class and by diversifying the types of questions and assignments as well.

Looking at it the other way, some academics indicated that they are not using any methods due to the specific criteria that are set by the university and that they need to stick to the existing methods.

DIGITAL LITERACY

1) GUIDELINES/TRAINING PROVIDED BY UNIVERSITY TO SUPPORT ACADEMICS FOR DELIVERING OF VIRTUAL CLASSES

Some academics indicated that their university conducted a training course for all staff. The training course includes: training on how to use university platform, Moodle, Zoom, uploads courses, and recording classes. Also, the workshops include solutions for some platform issues and ways of communicating knowledge through them.

Others mentioned that universities sent videos and guidelines on how to record a video through PPT, and how to create a YouTube channel. Some universities have Tel-econ support and expert teams which are available at all times⁽⁴⁾.

However, there are some academics who indicated that the given training was not according to their needs and it's only limited to technical matters in the e-learning system.

2) ACADEMICS FAMILIARISED WITH DIGITAL TOOLS OF VIRTUAL CLASSES



(4) The support that is provided by the expert teams is including training on how to use universities' and different platforms such as Moodle & Zoom and upload courses and recorded classes

3) SKILLS/CAPACITY BUILDING THAT CAN ENHANCE KNOWLEDGE RELATED TO DIGITAL DELIVERY

Academics indicated that they should put some efforts to create an environment where students always feel confident and assured enough to learn. Also to drive students' interest in the course by providing day-to-day examples of each aspect apart of the courses content and by providing feedback that fosters their independent learning.

All academics stressed on the importance of getting online courses in using the online tools, transfer skills, how to use different platforms in teaching & learning and digital technology. As well as this, they said that the following courses are needed too: How to design an online class which is harder than designing traditional class material, how to engage/ attract online students, web design, 3D software that mimic the real structures for engineering and medical students and some good interactive simulation to cover practical part of classes.

Others suggested to learn from the online teaching available like Udemy, Udacity and Coursera. Some academics stated that skills can be enhanced when they become knowledgeable of everything new, plan their online courses, have time management, know blended learning approaches, have engagement skills and apply various assessment methods.

RESEARCH

1) ACADEMICS AND RESEARCH







47% of the academics answered that they have applied for research fund and **53%** answered no.

2) HOW ACADEMICS FOUND THE PROCESS OF APPLYING FOR RESEARCH FUNDING AND HOW MUCH TIME DO THEY SPEND ON RESEARCH.

47% of the Early Academics have applied for fund, they found the process very difficult with the current situation under COVID-19. In addition to this, they described the process as bureaucratic, long, difficult, requires a lot of effort and at the end they don't get all fund they need. In some cases, not all information are available and some early career academics don't have enough experience.





25% of academics didn't specify the time allocated for research and their answers were as follow: they don't have practical research, academics had to spend time on electronic survey to collect data for research, some of them answered all my time on research, others said that they do research during semester break, summer and second term.

3) ACADEMICS NEED SUPPORT TO APPLY FOR GRANT APPLICATIONS



60% academics in the survey indicated that they need training, while **30%** said they don't need training and 10% of them said they maybe need training.

SUPPORT NEEDED FOR ACADEMICS TO APPLY FOR GRANT APPLICATIONS

- Applying for Grants internal/external.
- Familiarize EC with Funding agencies.
- Writing proposals.

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- Applying for international agencies like BBCRC, MRC, NIH, and others is an art.
- How to write and discuss the idea in a specific way.
- How to submit a successful proposal in the humanities.

4) HOW ACADEMICS RESEARCH IS LINKED TO POLICY/ INNOVATION/ COMMERCIALISATION OUTCOME.



The research in universities is linked to policy/innovation and commercialisation outcomes as **69%** of the Early Career Academics stated in the sample but **31%** said no.

5) DO ACADEMICS HAVE ACCESS TO RESEARCH FACILITIES INSIDE CAMPUS AND IN OTHER CAMPUSES.



64% of the academic clarified that they have access to research facilities⁽⁴⁾ inside campus and in other university campus, while **36%** said that they don't have access to any research facility⁽⁵⁾.

6) DO ACADEMICS HAVE ACCESS TO CAREER DEVELOPMENT OPPORTUNITIES



50% of the academics in the sample said that they have access to opportunities, **47%** said they don't have access to opportunities and **3%** of the academics didn't answer.

WHAT ARE THE PROVIDED OPPORTUNITIES!

- Conferences.
- Promotion & internal funding.
- Scientific Research Fund MoHE.
- Funding opportunities.
- Emailing list for Welcome Genome Campus.
- Funding opportunities for At-Risk Scholars.

7) DO ACADEMICS HAVE ACCESS TO DATA FOR RESEARCH



78% of the academics confirmed that they are having access to data i.e. research analysis, papers and publications, contacts, etc., while **22%** of them confirmed that they don't have this access to data.

8) THE LOAD OF RESEARCH VS. TEACHING UNIVERSITY THAT ACADEMICS FACE

Mainly most academics said the research vs teaching ratio is either 2:5 or 3:5. The others said that the main focus is on the teaching and administrative work so the ration for research vs teaching is 0:5. One of the academics commented "Only if the academic staff got external fund, his teaching load will be decreased by 3 hours weekly teaching, maximum weekly load for academic staff 12. Another academic commented that major load for teaching and other administrative work consume time allocated for research".



9) DO ACADEMICS OR THEIR DEPARTMENTS / UNIVERSITY HAVE ANY RESEARCH IN RESPONSE TO COVID-19

DO ACADEMICS OR THEIR DEPARTMENTS / UNIVERSITY HAVE ANY RESEARCH IN RESPONSE TO COVID-19



61% of the academics said that their department/ university are currently doing some research in response to COVID-19, while the others said that they didn't do any.

10) HAVE ACADEMICS OR THEIR DEPARTMENTS / UNIVERSITY PUBLISHED ANY COMMUNICATION/ RESEARCH WITH NATIONAL OR INTERNATIONAL HIGHER EDUCATION INSTITUTIONS IN RESPONSE TO COVID-19.





university have published communication/ research with national and international higher education institutions in response to COVID-19 while **47%** of them said they didn't.

11) MAIN BARRIERS THAT ARE FACING ACADEMICS IN DOING RESEARCH

- Lack of time.
- Lack of funding.
- Lack of facilities.
- Lack of motivation.
- Stress from workload.
- Teaching commitments.
- Lack of research protective time.
- Teaching load particularly during COVID-19.
- Overwhelmed with paper workload and administrative work.
- The long approval and permission procedures/ bureaucracy.
- Lack of research support especially in data analysis and bio-statistics.

CONCLUSION

The academics in the higher education institutions in Jordan have had to move to the online teaching as a result of COVID-19 pandemic.

As a result, the academics found themselves dealing with different challenges and difficulties in different areas related to online teaching:

Online Delivery of Teaching

The online teaching can be an effective way for teaching when the proper conditions are available, the availability of high-speed internet, proper laptops and software for academics and students, specific materials and tools for online teaching especially for practical subjects, evaluation and assessment mechanisms.

Also, one of the main challenges that the work-life balance, the academics need to specify an hour/daily or hours weekly for students' enquiries as part of the teaching hours.

The Hybrid learning is a new system for learning which will offer a new horizon to the higher education, its excellent for students and academics to move for a new way of teaching instead of depending on face to face traditional teaching on campus, as a first step the academics need to be trained on the hybrid learning and to be according to the global education standards.

Students Engagement via Virtual Online Classes

Many academics indicated that the students' engagement is one of the main factors for the success of the virtual online teaching. During the last period the engagement of the students varied between acceptable to weak due to many reasons, one of them is the time management skills, incentive for online teaching, interaction with peers through teamwork, some complex ideas need face to face discussion. In addition, the weak students need more support specially in the practical courses.

Many academics have overcome the weak engagement of students through assigning projects and which require teamwork and prior preparation to the lecture and discussion lectures, encouraging students to participate by asking questions, or through using simulations, videos and virtual boards.

Transfer of Knowledge

75% of the students are facing problems in receiving the information via online, they have different levels of using technologies, using specific software or know how to follow up on materials and assignments uploaded online and follow the provided information by the lecturer. This weakness may affect the way they are receiving, understanding the information or interacting with course.

The academics are facing many difficulties in transferring the knowledge especially that the course design is for face to face delivery and not for online, changing the design of the course needs approval and takes time which was hard to secure during the sudden transfer to online learning. The availability of different teaching tools⁽⁶⁾ that enrich the course and make it more comprehensible impact the transfer of information.

Assessment for Delivering of Virtual Online Classes

Different platforms are being used for online assessment. Many universities set specific criteria for students' assessment such as: specifying assessment time with different types of questions, reallocate the marks between the exams and semester work, projects and quizzes.

The academics also have populated specific methods for assessing their students by different methods like diversifying questions between different groups within the same class, also diversifying the types of questions and assignments, using different evaluation methods such as: online quizzes, online homework, case presentation and reports. Other universities have set specific criteria for assessment.

Digital Literacy

67% of the academics are facing difficulties with online teaching. Many of the academics find it stressful online teaching system is stressful, needs preparation and training on how to explain concepts and skills, know about the available technical tools for specific application and how to use them, managing team based and project based classes as well as the practical part of classes, and how to engage the students.

Research

97% of the academics are doing research, they are facing different difficulties in doing research like teaching load, lack of connection with community, lack of facilities, lack of funding and university administrative work.

47% of the academics applied for fund and found the process long, bureaucratic, takes time and a lot of effort, sometimes not all information are available and some early career academics don't have enough experience. In the other hand, many of the academics said applying for internal funding is easy. **60%** of the Academics specified that they need training for applying for fund, theses training focus on Applying for Grants internal/external, familiarise early career academics with Funding agencies, writing strong proposals.

Currently during the COVID-19 pandemic universities are doing research in response to COVID-19, and many of them populated communication and research with national and international Higher education institutions.

RECOMMENDATIONS

Many universities provided specific guidelines and training to support academics with delivering virtual classes, the provided training focus on using platform, uploading courses, and recording classes. Also, they provide videos and step by step guidelines for using specific programme or software. However; these didn't meet the academics' needs for virtual delivery.

Specific training were recommended by almost all ECs as a result from the survey to overcome the challenges and enhance the virtual teaching. These training would include focusing on the following areas:

- Using the online tools and digital technology for teaching and training (including designing the online classes).
- Transfer of knowledge and students' engagement.
- Blended learning approach.
- Assessment of online learning (students and courses).