



Towards A Strategic Response to Distance Architectural Education Programs in Egyptian Universities to Tackle The Coronavirus Pandemic And Any Future Contingency

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Abstract

Recently, the Egyptian community has witnessed a series of evolving challenges and variations at all levels, political, social, economic, and educational, as a result of the novel coronavirus pandemic. It has emphasized the critical role of science, technology, and innovation in various areas. Thus, the need to identify issues, and develop and change standards across countries through the dissemination of various technologies such as smartphones and their various applications. Within this research framework, the main hypothesis is set forward, coming after the unprecedented coronavirus (COVID-19) pandemic and its associated impact on the educational systems, especially Egyptian architectural education programs, as a new resilient learning model can be devised to share best practices and information during the crises. Accordingly, the research aims to document the outcomes of the experiment, including advantages and disadvantages, finding from the outcomes the know-how of preparing remote architectural education in case of emergencies in the hereafter. Hence, attaining a set of necessary indicators for the response of the various architectural education program strategies within Egyptian universities to ensure the continuity of the educational process within contingencies. Moving to research methodology by case studying of architectural education before and after the Coronavirus, also by studying the different means of distance learning and how different types of deal with it. And then a survey was prepared for each of the students, faculty members, and administrators, after completing the current semester exams, so that we get through a full background on the outcomes of such experimenting and how to able to deal with problems and obstacles faced, whether at the level of students, faculty, or administrators.

Keywords: Architectural Education, Coronavirus COVID-19, Distance Learning Means, The Impact of Coronavirus on Architectural Education

1. Introduction

The Corona pandemic has revealed the need to address many aspects regarding the lives of children and adolescents, most notably the closure of schools and universities according to UNESCO, the pandemic has caused 1.6 billion pupils in 190 countries to be cut off from education so far, and this represents 90 percent of the world's children of school and university age.[1]

Dr. Mahama Ouedraogo, Director, of Human Resources, Science and Technology presented the Expert Report of the Virtual Meeting of 7th April 2020, highlighting, the current status of COVID-19 and facts on the ground in the Continent in Africa, in which he advocated the institutions, schools, colleges, and universities and recommended a Continental education sector response comprising continuous learning based on DOTSS, knowledge and learning agenda among AU Member States and putting in place plans to reopen schools and catch up programs.

A wider debate took place about the extent to which the closing of practical universities contributes to controlling the pandemic in Egypt. Especially architectural education, because most of the curricula depend on communication through architectural sketches between the student and the staff members. And since the new Coronavirus only appeared two years ago, there is no solid evidence to demonstrate the strength of any of the measures that were demanded to control it.[2] So, Egypt has adopted many measures for the use of the distance learning system, despite the problems and challenges it faced Implementing this system containing the crisis in practical university discipline.

1.1. Research problem and aim

The remote architectural education system reflected the absence of direct interaction between lecturer and student, forcing the use of technology through different means of communication for all different group types. As the problem lies in the lack of a strategy to deal with the emergency conditions facing the remote architectural education system in the future. After the Coronavirus -disregarded the idea of learning in the traditional classroom, online learning is no longer confined to certain groups, hence the matter in the higher education sector has turned into compulsory technology.

1.2. Research Questions

- Is there an acceptance of the distance learning system by parents, teachers, and specialists in architectural education to discuss the most important advantages and disadvantages of the system?

- What can be attained for the architectural education sector in Egypt from the benefits of the following methods of distance learning?
- Is Coronavirus (COVID -19) an opportunity to improve the system of architectural education in Egypt in emergency situations?
- Is there a need to analyze the strategy of distance architectural learning towards finding quick and positive solutions to face crises in the hereafter?

1.3. Research hypothesis

Through the Coronavirus (COVID-19) crisis, a new learning strategy could be developed to grasp all stakeholders and ensure preparedness for contingencies. Realize the architectural education system in Egypt is more resilient in the face of crises, through self-reliance, as it is one of the most significant ingredients for the success of the operation. Distance education and addressing difficulties facing architectural education in Egypt, thus, the prevailing generations of students will have the ability to learn remotely thanks to their use of technology at an early age.

1.4. The research objective

- 1) Draw a comprehensive impression of distance architectural education and its institutions in Egypt.
- 2) Determine the most important roles and contributions of the participants in distance learning in achieving the success of the operation.
- 3) Articulate the dimensions and indicators of the problems and characteristics facing distance education institutions.
- 4) Take advantage of contemporary tendencies in the field of distance learning to develop a system for facing crises.
- 5) Contribute to enhancing the level of internal and external performance efficiency of distance architectural education institutions.

1.5. Methodology

Theoretical study: Getting acquainted with the terms of architectural education and distance learning during the Coronavirus crisis, examining the means of remote communication and how it affects architectural education. Subsequently, address the modes of remote education technology by (student - staff member - administration), and they reached A set of indicators needed for a business strategy.

An analytical study: By analyzing a set of surveys for each group of participants sharing in the distance learning process (students, faculty members, and administrators), then monitoring the experiment results and how to able to deal with the problems and obstacles

encountered by the participants. Results and discussion: Testing the necessary indicators for designing a distance architecture learning strategy in case of emergencies.

2. Literature review

2.1. Architectural education

Architectural education depends on the principle of learning by doing, according to contemporary architecture schools.[3] Thus, architectural, and urban education concerned with the production-built environments is a fundamental issue affecting professional practice and the ability to innovate and create. Indeed, we believe that distinguishing professional practice and enhancing the quality of architectural education are two sides of the same coin.

Architectural and urban education is not just an activity aimed at problem-solving, but the ability to perceive and define what the problems are, (Sean).[4] As Architecture students constantly need to work on themselves to create new challenges. A simple and direct understanding of creativity in architecture depends on the ability to create a distinct architectural work that attains a balance between the wishes, aspirations, and visions of the architect, user, client, environment, and society demands Within understanding such a framework, a vital question arises that needs an answer, which is How architectural education deals with surrounding environment developments occur in all fields and adapts to it, and how, the architect can develop his skills within crises times to keep posted with the future improvement

The process of architectural education in Egypt depends almost entirely on the triangle (the student, the staff member, and the scientific content). from the lecturer's perspective, the educational process depends on teaching experience, the student's creative s, sense, and intellectual ability in determining the appropriate project for the team grade, according to its objective, and the serious evaluation of the project based on the principles and evaluation criteria of the architectural design.

2.2 About Coronavirus (COVID-19)

The covid-19 disease is an infective disease caused by the last discovered virus of the Coronavirus strain. Their new virus outbreak began in the Chinese city of Wuhan in December 2019, Covid-19 has now turned into a pandemic affecting many countries of the world. The most common symptoms of COVID-19 are fever, fatigue, and a dry cough.[5]

Other symptoms that are less common but may be experienced by some patients include pains and aches, nasal congestion, headache, conjunctivitis, sore throat, diarrhea, loss of sense of taste or odor, and the appearance of a rash or discoloration of the fingers or toes.[6] These symptoms are commonly mild and begin gradually, and some people become infected with only very mild symptoms, see Fig. 1:

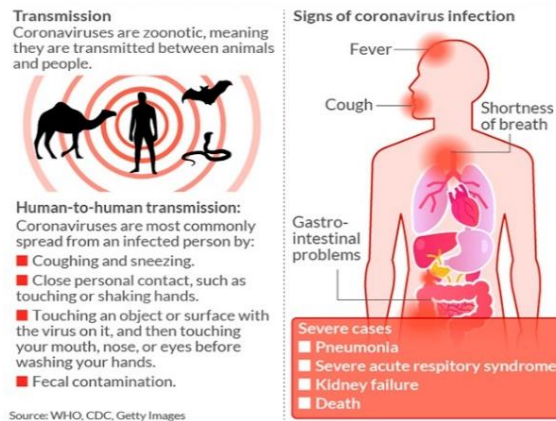


Fig. 1. shows the effect of the Coronavirus on the human body. Source: DeCambre, M. (2020). How the stock market has performed during past viral outbreaks, as coronavirus spreads to Italy and Iran.

The problems that faced architectural education in Egyptian universities Because of the Coronavirus: Egyptian universities and colleges faced a challenge from the health emergency that disrupted the lives of students, faculty, and staff around the world, here the World Health Organization called for commitment inside homes and concern for social distancing and work on the conduct of the remote educational process, see Fig. 2.

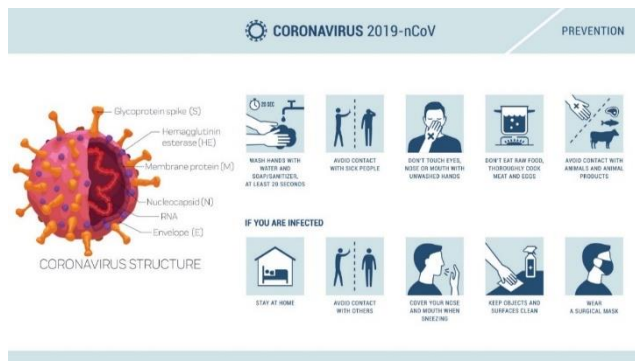


Fig. 2 Clarifies the precautionary taken against the Coronavirus. Source: The Coronavirus and the supply chain (2020).

A wider debate has been raised about the extent to which the closure of practical universities, especially architectural education, has contributed to the adoption of most curricula on communication through architectural paintings between students, faculty members, and their assistants in containing the pandemic in Egypt.

Since the new Coronavirus only appeared two years ago, there is no solid evidence to prove the effectiveness of any of the measures needed to contain it. Accordingly, the Arab Republic of Egypt has taken many considerations through shifting to distance learning operation, despite the problems and challenges that faced the implementation of this system

containing the crisis in architectural education. [7] Yet, it will contribute to highlighting a set of results for several problems facing crises in the hereafter.

In the Faculties of Architecture, a great effort has been constituted to propose an educational and practical experience a higher level, during and after this semester. Despite the difficulties and challenges that faced the experiment, it proved its success through the contribution of everyone, whether students, staff members or administrators, where the problems are summarized as follows [8]:

- Reluctance and disenchantment with modern technology.
- Adhere to the old teaching methods and not wanting to adapt to what is modern.
- Some felt that the use of technology would increase the teacher's burden by threatening his leadership role in the educational process.
- The inability to make skillful usage of modern technologies and the goals of awareness of them.

Challenges to address the Coronavirus inside Egyptian universities:

Since many of the university's workforce works remotely, to enhance the safety and security of society, a set of steps has been implemented to deal with the crisis and maintain the safety of everyone, by adhering to the following:[9]

Face protection: takes effect immediately and until further notice, in compliance with the executive order of the Government of the Arab Republic of Egypt, whereby all students, staff, and staff who are currently working are required to wear it on campus, When going out in public places or when social distancing is not possible, but any time someone is on campus and six meters away from some other person they must put on a mask (either cloth or surgical)[10] As universities provide the necessary medical masks in the case that no employee, students or faculty member is able.

Periodic sterilization: The universities are committed, according to the Prime Minister's decision, to comprehensive sterilization of all offices, classrooms, outdoors, service spaces, etc., during the graduate exam period and during the discussion of the graduation project, periodically between each committee and the others [11], Fig. 3.



Fig.3 Shows the necessary measures to avoid the virus spreading in Egyptian universities.
Source: Researcher

For employees: Heads of departments and directors are equipped to distribute masks to their employees who are present on a daily basis to follow the educational process at the Campus. Also finding solutions for both students and staff members' problems, as considerably as the exam center.

For students: to follow up on the problems, whether health or r practical, finding an appropriate solution for each problem, in parliamentary procedure to maintain the safety of all students and to ensure Full awareness of scientific data for each course in the such up-normal situation, considering finding solutions for any new considerations.

Social distancing: In Social distancing should be used in combination with other everyday preventive actions to scale down the spread of COVID-19. As it appears to have a positive impact on flattening the curve and this represents important and positive progress. To keep up this progress we must continue to adhere to social distancing restrictions to help stop the spread of coronavirus, as the government is advising everyone., in addition to the following precautions [12], see Fig. 4:

- Wear a mask or cover your face while in public places.
- Stay home.
- Stay at least a foot away from others.
- It is safest to avoid crowded places and gatherings.



Fig.4 Shows the social distance between students during the examinations in Egyptian universities.
Source: Researcher

Public events and programs: The health and safety of the community of the Egyptian universities are a top priority due to COVID-19, and accordingly restrictions related to travel, gatherings, and the rest of the remaining events in the Spring 2020 year programs have been canceled.

Accordingly, all the above was reflected in the universities for architectural education, as the university administration, staff members, and students resorted to using modern technology for communication and distance learning.

3. Distance learning

Distance learning also called distance Education, Distributed Learning, or Remote Education “is an educational model in which the teaching, and learning process takes place via video, computer, or other means. The relationship between the scholar and the lecturer depends on the online technical tools, a no fixed place needed for these lessons to take place”.[13]

This type of education appeared during the second half of the twentieth century, and interest in it increased with the end of this century to keep pace with technological progress and development.[14]

In the area of communication, transmission and reception of television and radio, and modern technology. A change has occurred not only in the subject area of distance education during short periods, but also in direct learning, self-learning, and other resulting areas such as e-learning.[15]

- The ongoing integral development between communications technology and computers.
- The staff need to acquire new skills without affecting their working time.

3.1 Objectives of distance architectural education

Distance learning in principle uses audio or audio-video learning recourses. These assistive technologies and materials increase the opportunities for supporting learning,

whether in terms of time, distance, travel, or disability, and the knowledge base for those running in the discipline of learning while they are in their work.[16].

3.2 Active parties in distance learning technology

Examples of different accessibility stakeholders working together include
In addition, we can briefly describe the main parties in the distance learning process in addition to the challenges they face as follows:[17]

Students: The preparation of students' education is the groundwork for all distance education programs, it is the scale upon which to measure every effort, regardless of the educational context, the basic task of the students is learning, enthusiasm, planning, and the ability analyze and apply educational content to be taught.

University teaching staff: The success of any efforts to distance education goes to the effective role of the faculty member. As effective distance learning is not limited to the transfer of knowledge but extends beyond that to include new areas and sophisticated,[18] it should be capable to exercise new roles and tasks entrusted as a supervisor, guide, expert, or scientific advisor directed to his students.

Where should lecturers remotely prepare themselves to face special challenges, and here for to develop a pragmatic understanding of the features and necessities of student's distance learners in the absence of direct contact and face-to-face, full skills diverse and imbues the varied and various teaching skills of its recipients?

The educational administration/ management: carrying out the process of building and setting the decision and how to work closely with those in charge of technical matters and support services to ensure that technological resources for them are employed for Effectively benefiting in the educational mission of the institution. The institution should be prepared and ready to take on its leadership role efficiently and effectively. It needs to invest more time in developing the educational structure in the educational process. And to build relationships, whether within the institution by establishing a communication network that facilitates education or outside it, to enable it to achieve effective performance.

Technical support: These people are the invisible soldiers in the e-learning education process, and they stand for one of the important parts in the e-learning education process, as they make sure that an enormous number of details are considered, these Supportive services include (Student registration, copying/distribution of materials, copyright protection, developing programs, work reports degrees, and management of technical sources. etc.). Training on how to use computer devices and applications. Also, to provide advice for uses development and adjustment. Plus, any IT-technical support either for maintenance or repair of both hardware and software When any technical failure occurs.

As a result, the technical supporters are the basis for maintaining the coordination and interdependence of efforts together in the subject of the e-learning education process.

3.3 Modern means of communication and architectural distance learning

It is a technological way of communication between a teacher and student who are spatially and temporally apart and officially recognized, as they plan, organize, and set academic decisions through educational institutions, whether they are (schools - universities - institutes). Thus, the student has a responsibility to learn; the terms and elements of learning through the diversity of data sources, Which, in turn, serves as an element of interaction between the student and the instructor. So, we can say then that the means of distance education are based on the interaction between the learner and electronic information sources.[19].

In the Egyptian universities' experience of remote architectural education methods resulting from the Coronavirus, a group of these methods has been utilized to facilitate the exchange of information among students, administration, and faculty members, as follows, Table 1.

Table 1 - Illustration of the means of distance learning and how to deal with it. Source: Researcher.

Distance Learning Means	Communicating method	
Microsoft Teams [20]		The Teams service enables instant messaging, audio and video calling, rich online meetings, mobile experiences, and extensive web conferencing capabilities. In addition, Teams provides file and data collaboration and extensibility features. In which you can create collaborative classrooms, connect professional learning communities, and link up with colleagues and both undergraduates and school students.
University email [20]		Indirect communication: where the instructor and the student can communicate with each other or with parties by e-mail or voice mail in an indirect way, with no necessity for both parties to be online at the same time.
Zoom application [20]		Is a video telephony software program. The free plan provides a video chatting service that lets up to 100 participants concurrently. Features include one-on-one meetings, group video conferences, screen sharing, plugins, browser extensions, and the ability to record meetings and get them automatically transcribed. This computer program is suitable for a group of work meetings
Student management system (LMS)[22]	Lives	union real-time video performance and non-linear editing in one professional program.
	Kdenlive	Not intended for experts only, it can be in use for minor personal projects.
	Pitivi	The free video editing program thts a nice and smart user interface, accurate code base, and a group of users.
	VidCutter	The simplest free open source for video cutter & joiner software for audio-visual fans
	OpenShot	The best video editing program for beginners that allows to create and edit videos online

Distance Learning Means	Communicating method	
	Natron	Powerful Digital Compositor software that can manage all 2D/2.5D needs
	Blender	Count as one of the Best professional 3D video editing/creation software.
	FlowBlade	Nonlinear and multi-track video editing software released under the GPL3 license. This can be used by beginners and professionals alike, and it helps convert your vision into sound and image.
Social media	Facebook	Via it, direct communication can be achieved by voice communication at the same instant, or indirectly through texting between both instructor and student.
	WhatsApp	Direct communication: by means of texting or voice communication.
Academic webpage	Indirect communication: where the teacher and the scholar can communicate with each other by sending e-mails for the mandatory task. The teacher can evaluate after and then raises the grades on the academy web page. Giving necessary important notes for the required amendments from every student.	

Through the above theoretical study, it is possible to gain a set of indicators that contribute to reaching a response strategy for distance architectural education programs in Egyptian universities and preparing for any critical situation in the hereafter, as follows, Table 2:

Table 2 –The Response in Egyptian Universities for distance architectural education programs and preparedness for future risks. Source: Researcher.

Architectural Learning Stakeholders	Distance Strategic Response to Distance Architectural education programs in Egyptian universities to tackle the coronavirus pandemic and any future contingency
Management	<p>Sufficient experience in the educational technology usage</p> <p>Training resources</p> <p>Duties and costs</p> <p>Set a team to manage and implement the distance learning program</p> <p>Setting the criteria that should be fulfilled in the courses developing</p> <p>Ensure the engagement of all stakeholders</p> <p>Approval of plans, agenda, and implementation method</p> <p>Student Affairs Management System (supervision and follow-up)</p> <p>Controlling the business scope and facing any urgent changes/ issues</p>

Architectural Learning Stakeholders	Distance Strategic Response to Distance Architectural education programs in Egyptian universities to tackle the coronavirus pandemic and any future contingency
Faculty staff members	Electronic lectures system (educational content - lecture program) Exams Electronic System (Student Calendar) Multiple means of educational plans Availability of both expertise and competence in using up-to-date technology in crisis spots The efficiency of follow-up students
Students	Availability of sufficient experience with the distance Learning system in case of crisis Access to programs for distance learning methods Preparing various architectural courses How to deal with the technical problems of the distance learning method? Understanding more about remote communication means

4. Methods/Experimental

Analytical study- Application of survey questionnaire

Throughout this research, a set of measurement that have been deduced from the theoretical study, to reach a strategy for remote architectural education programs in the Egyptian universities following the Coronavirus crisis, and how to be prepared for any future one. The various analysis steps through which the outcome was developed will be inaugurated. Assess the strategic indicators and re-ordering them according to the priorities of each influencer and their impact on the business strategy.

Data analysis used Methods

- First: SPSS program was used to analyze the participants 'questionnaires data.
- Second: Weighted Mean:

If we have a random sample of size n and its vocabulary $X_1, X_2, X_3, \dots, X_n$ respectively, and that $W_1, W_2, W_3, \dots, W_n$, when are the weights corresponding to the sample items, then the weighted mean is estimated according to the following steps:

- Find the sum of weights.
- Multiplying each sample item by the corresponding weights and finding the sum of multiplication products
- Calculate the weighted mean.

4.1. Design of the survey questionnaire

An integrated surveying study was held out to include all research field stages, as a preliminary questionnaire was designed to accomplish the objectives of the proposed strategy by analyzing the relative indicator weights of the architectural distance learning strategy in crisis time.

4.2. Questionnaire Objective

Rearranging the indicators of an architectural distance learning strategy in crisis cases, corresponding to their priorities through relative weighted mean.

Clarify and develop the basic assumptions of the research with the possibility of adding other hypotheses or asking new questions to attempt to meet answers in the research. Piloting the questionnaire on research samples to study problems that may face the application.

4.3. Defining research samples

In-person interviews were conducted for applying the questionnaire with a group of students, administrators and faculty members.

A group of students, administrators and faculty, where the participants included different levels of administrators and faculty members with different years of experience, and a group of students from different levels of study:

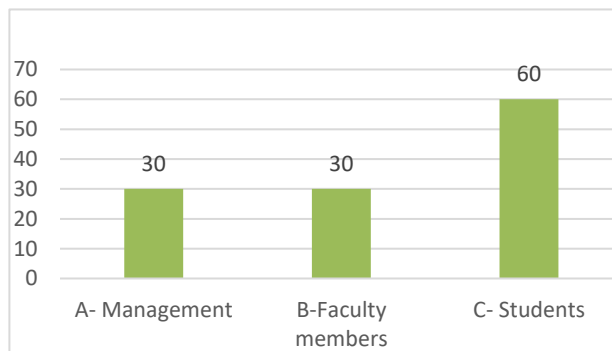


Fig. .5 Shows the final research samples. Source: Researcher

Questionnaire Application and design for the final samples:

The questionnaire was designed by formulating a set of problems after making all necessary adaptations to the initial one, to suit the required purposes of the research. In order

to avoid problems that faced the experimental application in the survey study and then projecting the final questionnaire for the final samples of the research so that it addresses a set of the following:

- First part: this part about the researcher and filling the questionnaire, general data from the participant (management, faculty member and student).
- Second part: arranging the problems from highest importance to lowest from the participants' point of perspective. (Management, faculty member and student).

Table 3. Illustrate the participants in the remote architectural education system (administration - faculty member - student). Source: Researchers

Architectural Distance Learning Parties	Strategic Distance Response to Architectural education programs in Egyptian universities to tackle the coronavirus pandemic and any future contingency	Coding	Rates are illustrated using the following five-point scale; the number indicates how important the factor is from highest to the least				
			Excellent	Above average	Average	Below average	Very poor
			1	2	3	4	5
Management	Sufficient experience in the educational technology usage	X1					
	Training resources	X2					
	Duties and costs	X3					
	Set a team to manage and implement the distance learning program	X4					
	Setting the criteria that should be fulfilled in the courses developing	X5					
	Ensure the engagement of all stakeholders	X6					
	Approval of plans, agenda, and implementation method	X7					
	Student Affairs Management System (supervision and follow-up)	X8					
	Controlling the business scope and facing any urgent changes/ issues	X9					
Faculty members	Electronic lectures system (educational content - lecture program)	X10					
	Exams Electronic System (Student Calendar)	X11					

Architectural Distance Learning Parties	Strategic Response to Distance Architectural education programs in Egyptian universities to tackle the coronavirus pandemic and any future contingency	Coding	Rates are illustrated using the following five-point scale; the number indicates how important the factor is from highest to the least				
			Excellent	Above average	Average	Below average	Very poor
			1	2	3	4	5
	Multiple means of educational plans	X12					
	Availability of both expertise and competence in using up-to-date technology in crisis spots	X13					
	Efficiency of follow up students	X14					
Students	Availability of sufficient experience of the distance Learning system in case of crisis	X15					
	Access to programs for distance learning methods	X16					
	Preparing various architectural courses	X17					
	How to deal with technical problems of the distance learning method?	X18					
	Understand more about remote communication means	X19					

5. Results

Analysis of survey response:

After display on the final questionnaire format, a visualization step for the statistical tests, which can be delivered as follows: Relative weighted mean results from the management perspective questionnaire sample:

Table 4 Represents the weighted mean, based on its importance from the management perspective:

Coding	Indicators	Management				
		Items No.	Average (Grand Total / Number of Items)	maximum score	Weighted Mean(average / maximum score(5) x 100	Ranking is according to relative weighted mean
X1	Sufficient experience in the	1	0.8	5	16%	2

Coding	Indicators	Management				
		Items No.	Average (Grand Total / Number of Items)	maximum score	Weighted Mean(average / maximum score(5) x 100	Ranking is according to relative weighted mean
	educational technology usage					
X2	Training resources	1	0.74	5	14.8%	3
X3	Duties and costs	1	0.38	5	7.6%	7
X4	Set a team to manage and implement the distance learning program	1	0.46	5	9.2%	6
X5	Setting the criteria that should be fulfilled in the courses developing	1	0.26	5	5.2%	8
X6	Ensure the engagement of all stakeholders	1	0.57	5	11.4%	5
X7	Approval of plans, agenda, and implementation method	1	0.16	5	3.2%	9
X8	Student Affairs Management System (supervision and follow-up)	1	0.65	5	13%	4
X9	Controlling the business scope and facing any urgent changes/ issues	1	0.98	5	19.6%	1
Total sum of indicators		9	5	5	100%	

It is observed from the previous table that the indicator for controlling the scope of crisis actions and facing emergency changes obtained the highest percentage (19.6%) in the evaluation, then sufficient experience (16%), followed by training of human cadres (14.8%) by the management participants. This is evidence for the need of a strategy that deal with emergency situations for the architectural distance learning.

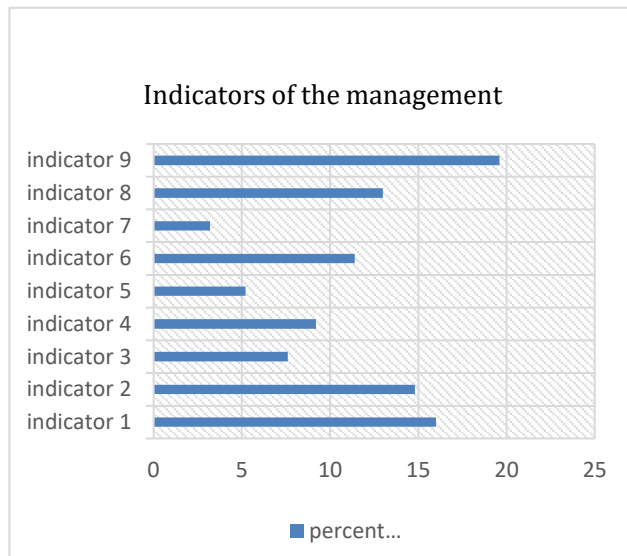


Fig. 6. Indicators the management strategic point of view. Source: Researcher.

Relative weighted mean results from the faculty members perspective questionnaire sample:

Table.5 Represents the weighted mean, based on its importance from the faculty members perspective

Coding	Indicators	Faculty members				
		Items No.	Average (Grand Total/ Number of Items)	Maximum score	Weighted Mean (average / maximum score (5) x 100)	Ranking is according to relative weighted mean
X10	Electronic lectures system (educational content - lecture program)	1	0.9	5	18%	3
X11	Exams Electronic	1	1	5	20%	2

Coding	Indicators	Faculty members				
		Items No.	Average (Grand Total/ Number of Items)	Maximum score	Weighted Mean (average / maximum score (5) x 100	Ranking is according to relative weighted mean
	System (Student Calendar)					
X12	Multiple means of educational plans	1	0.78	5	15.6%	4
X13	Availability of both expertise and competence in using up-to-date technology in crisis spots	1	1.75	5	35%	1
X14	Efficiency of follow up students	1	0.57	5	11.4%	5
Total sum of indicators		5	5	5	100%	

It is observed from the previous table that the indicator for controlling the scope of crisis actions and facing emergency changes obtained the highest percentage (35%) in the evaluation, then the electronic testing system (20%), followed by Followed by the online lectures system (18%) by the faculty members participants. This is evidence for the need of a strategy that deal with crisis situations for the architectural distance learning Properly without affecting all parties involved.

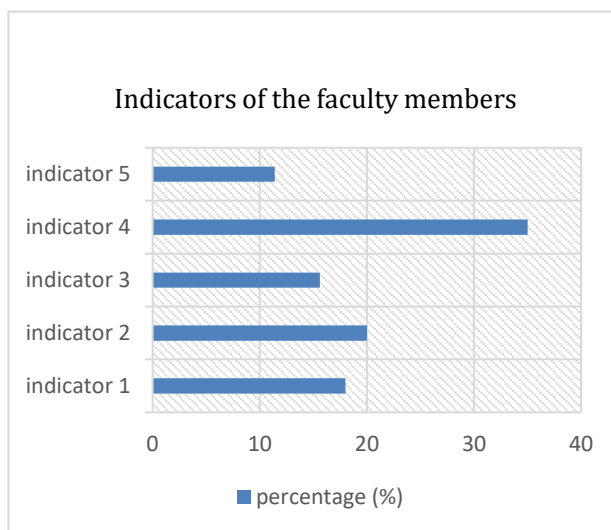


Fig. 7. Indicators the Faculty member strategic point of view. Source: Researcher.

Relative weighted mean results from the student's perspective questionnaire sample:

Table 6. Demonstrates the weighted mean, based on its importance from the students' perspective

Coding	Indicators	Students'				
		Items No.	Average (Grand Total / Number of Items)	maximum score	Weighted Mean(average / maximum score(5) x 100	Ranking is according to relative weighted mean
X15	Availability of sufficient experience of the distance Learning system in case of crisis	1	1.5	5	30%	1
X16	Access to programs for distance learning methods	1	0.84	5	16.8%	4
X17	Preparing various architectural courses	1	1.2	5	24%	2
X18	How to deal with technical problems of the distance learning method?	1	0.09	5	18%	3
X19	Understand more about remote communication means	1	0.56	5	11.2%	5
Total sum of indicators		5	5	5	100%	

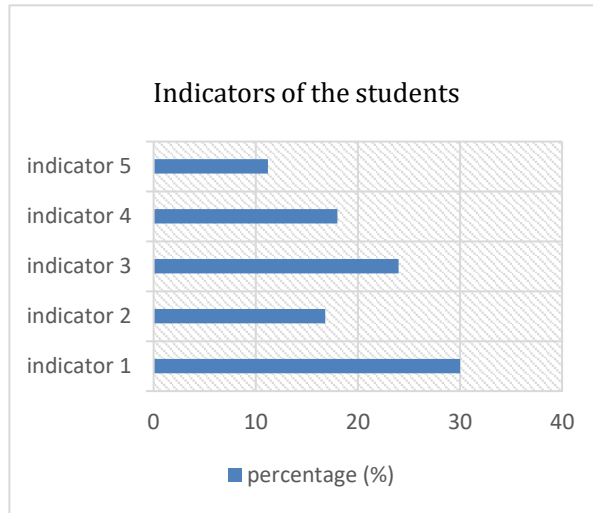


Fig. 8. Indicators the students' strategic point of view. Source: Researcher.

Hence, through the above theoretical and analytical study, it is possible to fulfill the proposed final framework strategy for distance architectural education in crisis situations, as follows:

Table 7. The proposed business strategy for distance architecture learning in contingency situations

Architectural Distance Learning Parties	Strategic Response to Distance Architectural programs in Egyptian universities to tackle the coronavirus pandemic and any future contingency	Indicators Ranking according to the relative weighted mean	Essentials for the indicators' success
Management	Sufficient experience in the educational technology usage	16%	<ul style="list-style-type: none"> • Providing modern educational devices necessary for the teaching and learning process and organizing their circulation and utilization. <p>Contributed for training in acquiring skills in the production of educational means, besides providing laboratories and equipment necessary for productivity.</p>
	Training resources	14.8%	<ul style="list-style-type: none"> • Experts in modern teaching methods.

Architectural Distance Learning Parties	Strategic Response to Distance Architectural education programs in Egyptian universities to tackle the coronavirus pandemic and any future contingency	Indicators Ranking according to the relative weighted mean	Essentials for the indicators' success
			<ul style="list-style-type: none"> • Experts in the area of preparing educational materials. • Experts in all disciplines Course materials. <p>Experts in information technology and education.</p>
	Duties and costs	7.6%	<p>University's policy to adopt Providing a technological Infrastructure in all areas, therefore the continuity of its work smoothly, with high efficiency and at the lowest cost, by using a technical staff in each of the followed sections: Educational Devices - Devices Maintenance - Optical and Digital Systems - Information Networks and Teleconferences Organizing</p>
	Set a team to manage and implement the distance learning program	9.2%	<ul style="list-style-type: none"> • Selecting out the necessary technical preparations for lectures, seminars, conferences and recording all. • Organizing, implementing training courses and workshops in the field of information. • managing the Information technology services for educational activity • Designing web pages, websites, and e-courses. • Providing educational interactive multimedia software. • Determine the specifications of computers, e-learning devices, and projectors

Architectural Distance Learning Parties	Strategic Response to Distance Architectural education programs in Egyptian universities to tackle the coronavirus pandemic and any future contingency	Indicators Ranking according to the relative weighted mean	Essentials for the indicators' success
			<ul style="list-style-type: none"> • Technical supervision, performance, and maintenance of smart devices. • Copying and distributing multimedia software to the concerned authorities
	Setting the criteria that should be fulfilled in the courses developing	5.2%	<ul style="list-style-type: none"> • Serving syllabus and academic decisions in order to avoid using the book as the only source of learning. • Analyzing educational curricula by offering them modern technical means that achieve their goals.
	Ensure the engagement of all stakeholders	11.4%	<ul style="list-style-type: none"> • As a specialized expertise, providing technical advice in the field of information technology to the various university institutions in all subjects to develop educational methods plus finding solutions. • Advise faculty members and administrators with innovative enlightenment methods.
	Approval of plans, agenda, and implementation method	3.2%	<ul style="list-style-type: none"> • Study the overall institutional strategy in addition to the various development plans. • Study the manpower requirements. • Consider the organizational structure of higher education institutions. • Study both options and alternatives for the different technology

Architectural Distance Learning Parties	Strategic Response to Distance education Egyptian universities to tackle the coronavirus pandemic and any future contingency	Indicators Ranking according to the relative weighted mean	Essentials for the indicators' success
	Student Affairs Management System (supervision and follow-up)	13%	<ul style="list-style-type: none"> • Reviewing and evaluating course presentation plans • Monitoring and following up the progress and procedures for preparing the academic courses.
	Controlling the business scope and facing any urgent changes/ issues	19.6%	<ul style="list-style-type: none"> • Finding out the university's needs and endeavoring in the subject of information technology to provide its requirements • The usage of information and communication technology through the formation, maintenance and development of centers, laboratories, and computer networks. • Provide the essential necessities for production operations
Faculty members	Electronic lectures system (educational content - lecture program)	18%	<ul style="list-style-type: none"> • Serving syllabus and academic decisions in order to avoid using the book as the only source of learning.
	Exams Electronic System (Student Calendar)	20%	<ul style="list-style-type: none"> • Training on the utilization of information technology devices, programs, and mapping
	Multiple means of educational plans	15.6%	<ul style="list-style-type: none"> • Encouraging readership so that it becomes a source of information.
	Availability of both expertise and competence in using up-to-date technology in crisis spots	35%	<ul style="list-style-type: none"> • Gain listening and observing skills. • Identify information sources, especially the appropriate materials for educational purposes

Architectural Distance Learning Parties	Strategic Response to Distance education Egyptian universities to tackle the coronavirus pandemic and any future contingency	Indicators Ranking according to the relative weighted mean	Essentials for the indicators' success
	Efficiency of follow up students	11.4%	<ul style="list-style-type: none"> • It takes into account the different needs and recipients' expectations • Act efficiently as a mentor and right guide to educational content. • Develops a practical understanding of the students' characteristics and needs in the absence of direct face-to-face contact.
Students	Availability of sufficient experience of the distance Learning system in case of crisis	30%	<ul style="list-style-type: none"> • Providing the learner with the skills of communicating with the various intellectual vessels at a distance.
	Preparing various architectural courses	24%	<ul style="list-style-type: none"> • The scholar should find out the essence of the topic, how to examine, in addition to the research method.
	How to deal with technical problems of the distance learning method?	18%	<ul style="list-style-type: none"> • The existence of a direct communication mechanism between the student and the technical support system. • Ease communication between teacher and student to provide alternative solutions
	Access to programs for distance learning methods	16.8%	<ul style="list-style-type: none"> • Communicating with the student and activating the training workshops.
	Understand more about remote communication means	11.2%	<ul style="list-style-type: none"> • Training on the utilization of remote communication means in its various subjects by attending courses and workshops by the technical support team within the university

6. Conclusions

A group of indicators that contributed to the development of the work strategy were achieved then examined on the sample population who participated in the distance education process and rearranged according to their priorities, and then determines the requirements for the success of the work strategy.

The planning process for preparing an emergency strategy has not started from scratch, as it is regulated by an educational policy and a reality represented in curricula that are applied and existing education. It is necessary to analyze this reality considering the modern desirable picture education and growth priorities, prior to resorting to or seeking refuge. Information, through placing up a comprehensive plan that includes all the factors that are related to the field of study

The opportunities available for education using remote IT tools have increased significantly in recent years, which will facilitate developing this technology to run in all Egyptian universities in crisis situations in the future.

The COVID-19 is a pandemic disease caused by a virus that affects the education system of the countries and Education is the pillar of every country's development, and in light of the coronavirus pandemic In the world, most schools, colleges, and universities are closed to control the spread of the COVID-19, This led to many difficulties for students, families, and teachers. So distance learning is a solution to continue the education system. However, distance learning is challenging in developing countries because lack of ICT infrastructures, computers, radio, and television.

So therefore, accomplishment of results and goals were not easy, and it had to put a deliberate strategy to stand in front of the urgent difficulties that we faced because of the new Corona virus and The most important of which are the following:

New ways of assessing students	<p>1-New formats of how students are evaluated have particularly challenged faculty and students, The move of assessments and final exams to a virtual form has arguably raised the most critical academic integrity issues among administrators, faculty and students.</p> <p>2-On the one hand, faculty had minimal experience in preparing for online exams, The open-book format and the lack of student monitoring paved the way for more cheating than usual. On the other hand students "especially those with limited access to the internet" feared that they would be at a disadvantage in the online assessments.</p> <p>3-Combining all these sources of stress has led to a detrimental impact on the mental health of students and academic staff, As a result many universities have been quick to include adaptive measures. On the one hand, this situation will likely have a temporary impact on the value of degrees. On the other hand, this context may also open the door for faculty</p>
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	and institutions to rethink course assessments and academic integrity in the future.
Virtual classrooms	<p>1-In most cases, the transition has not been easy. Students have often expressed their preference for more conventional classroom learning practices. But the most important impact of virtual teaching was felt in the drop of international students travelling to universities, so it can serve to explain why many international students decided to forgo the pursuit of studying in-person abroad.</p> <p>2-Even though the changeover from in-person to online learning has been a challenge, universities have also found several benefits to this teaching method, The shift to online learning has demonstrated the versatility and adaptability of administrative staff, faculty and library administrators.</p> <p>3-Besides, it has made universities aware of student access to personal computers in learning and the various systems for managing online learning in university education. The transfer to online learning has demonstrated the convenience of distance learning and has even convinced some students “including adults, workers, unemployed and disabled persons” to reintegrate into university study programs.</p>
Examining cost reductions	<p>1-In the process, universities have realized that e-learning can contribute to the diversification of their student population by reducing students’ costs, Students who can learn at a distance effectively do not have to deal with the costs of commuting, housing and meal plans. Besides, online learning saves time for students who live off-campus by not having to travel.</p> <p>2-In the short term, it also favors students who previously might have postponed pursuing higher education due to the inconvenience of distance. In short, this mode of teaching allows universities to reflect on the diversity of their student populations and to take into account particular needs.</p> <p>3-Beyond the educational issues, some see it as an opportunity to reduce operational costs. That puts additional pressure on universities to make their transition to distance learning a permanent reality, at least in part.</p>
Irreversible changes	<p>1-After this past year, universities will revise their contingency measures. By incorporating online and distance learning as crisis response measures, universities can normalize this alternative by anticipating future crises. It will also be necessary to maintain a critical approach to pressures from the private sector, as educational technology companies and other large technology firms advocate for an increased and permanent transition to online education.</p> <p>2-In sum, COVID-19 has changed the world, and academia is no exception. It has profoundly changed the way people interact with each other, the way they work and the way they learn. Universities are now</p>

	realizing that teaching practices will ultimately never completely return to the previous model.
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References

- [1] Position assessment paper on the implications of the emerging corona virus (Covid-19) (2020). [Version 312]
- [2] Governmental efforts to confront Corona (2020). Available at: <https://www.care.gov.eg/EgyptCare/Index.aspx> [Accessed:March 2020]
- [3] Al-Ferjani, A.A . (2002). Technology and Education Development; Gharib House for Printing, Publishing and Distribution: Cairo, Egypt.
- [4] Schoon, I. (1992). Creative achievement in architecture: A psychological study- (Psychological Studies).
- [5] Remuzzi, A., & Remuzzi, G. (2020). COVID-19 and Italy: what next. *The lancet*, 395(10231), 1225-1228
- [6] World Health Organization. (2020). Coronavirus disease 2019 (COVID-19): situation report, 82.
- [7] Gewin, V. (2020). Five tips for moving teaching online as COVID-19 takes hold. *Nature*, 580(7802), 295-296.
- [8] Education, U. N. E. S. C. O. From Disruption to Recovery.(2020).
- [9] Lau, J., Yang, B., & Dasgupta, R. (2020). Will the coronavirus make online education go viral. *Times Higher Education*,12.
- [10] Xiang, Y. T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., & Ng, C. H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *The Lancet Psychiatry*, 7(3), 228-229.
- [11] Spina, S., Marrazzo, F., Migliari, M., Stucchi, R., Sforza, A., & Fumagalli, R. (2020). The response of Milan's Emergency Medical System to the COVID-19 outbreak in Italy. *The Lancet*, 395(10227), e49-e50.

- [12] Chahrour, M., Assi, S., Bejjani, M., Nasrallah, A. A., Salhab, H., Fares, M., & Khachfe, H. H. (2020). A bibliometric analysis of COVID-19 research activity: a call for increased output. *Cureus*, 12(3).
- [13] Barron, A. E. (1998). *A teacher's guide to distance learning*. Florida Center for Instructional Technology, College of Education, University of South Florida.
- [14] Kearns, L. R. (2012). Student assessment in online learning: Challenges and effective practices. *Journal of Online Learning and Teaching*, 8(3), 198.
- [15] Guglielman, E. (2010). E-learning and Disability: Accessibility as a Contribute to Inclusion. In EC-TEL Doctoral Consortium (pp. 31-36).
- [16] Seale, J. K. (2013). *E-learning and disability in higher education: accessibility research and practice*. Routledge.
- [17] Seale, J. (2006). The rainbow bridge metaphor as a tool for developing accessible e-learning practices in higher education. *Canadian Journal of Learning and Technology/La revue canadienne de l'apprentissage et de la technologie*, 32(2).
- [18] Seale, J. (2006). A contextualised model of accessible e-learning practice in higher education institutions. *Australasian Journal of Educational Technology*, 22(2).
- [19] Cullen, J., Cullen, C., Hayward, D., & Maes, V. (2009). *Good Practices for Learning 2.0: Promoting Inclusion. An In-depth Study of Eight Learning*, 2.
- [20] Grudin, J., (2019, March). *5-things-every-microsoft-teams-meeting-newbie-should-know/ [UPDATE March 2020]*
- [21] bin Rosawi, K. A. (2020). Zoom User Guide. *International Journal of TESOL Studies*, 2(2), 174-183.
- [22] Guglielman, E. (2010). E-learning and Disability: Accessibility as a Contribute to Inclusion. In EC-TEL Doctoral Consortium (pp. 31-36).