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Attitudes of University Professors towards Distance Education during the COVID-19 Pandemic

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Abstract:

Introduction: With the spread of the COVID-19 pandemic, we wanted to study the attitudes of university professors towards distance education during the home-quarantine period.

Methods: The sample of the study included 426 professors from 37 universities across the country. The study used the questionnaire as a tool to collect information, based on electronic distribution. Besides, the descriptive method was used to analyse the results.

Results: Findings revealed positive trends among university professors towards distance learning during the home-quarantine period. In addition, the results indicated that distance learning can be adopted by both sexes without any additional special features. Moreover, the finding demonstrated positive attitudes towards distance learning with non-significant differences concerning their speciality. It means that professors' speciality was not a hindrance in the distance learning process. Furthermore, the results suggested that distance learning could be one of the promising pedagogical technologies for higher education in Algeria.

Discussion: We conclude that the distance learning is a good alternative to the classic traditional system. Also, it facilitates the training and qualification process for the student. Moreover, professors have a positive attitude towards the distance learning process. In addition, the gender and the academic speciality do not affect the attitude among professors towards the use of distance learning.

Limitations: The study results are only regionally generalisable because the study data were only collected in Algeria.

Conclusions: Distance learning is a good alternative in these current circumstances. In addition, professors have a positive attitude towards the distance learning process.

Key words: COVID-19 pandemic, distance learning, attitude, gender, speciality.

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Introduction

Nowadays, technology has invaded our daily lives and has become an indispensable part of it (Pesti, Tamášová, Lajčin, & Bodonyi, 2021). Education is one of the most significant fields in which technology has been invested. Several forms of education have emerged, including E-learning, M-learning, and U-learning. Those last represent distance learning (Moreira, Santos Pereira, Durão, & João Ferreira, 2018). Moreover, higher education students are becoming consumers of technology, especially the social media when they use it for educational purposes (Torun, 2020).

Algeria has been engaged in efforts to digitize higher education and scientific research; as it has drawn up a program since mid-February 2006. And this is through the establishment of the National Committee for Virtual Education; in cooperation with UNESCO, the European Commission and the Cooperative Program with Switzerland' 'Coselearn' (cursus, 2005).

At the beginning of the 2013/2014 season, Algeria launched the national distance learning project, In order to improve framing and the quality of formation in the school. Where it aims to achieve objectives divided into three phases.

At the end of 2019, a new outbreak of the viral disease was announced (COVID-19) and the situation was declared a pandemic on March 11, 2020 (WHO, 2020). Due to COVID-19, distance learning increased rapidly during the 2020 academic year. At the same time, online learning was perhaps the only realistic response to the health crisis (Metzgar, 2021).

In Algeria, the Ministry of Health declared the registration of the first case of the Coronavirus, COVID-19, on February 25, 2020 (Ministry of Health and Population, 2020). On March 12, 2020, the study was suspended after new cases have been recorded that express the spread of the pandemic. Universities have adopted distance education as a solution to continuing teaching.

In this article, due to the outbreak of the COVID-19 pandemic, we study the attitudes and differences in these attitudes towards the use of distance education during the home-quarantine period by university professors in Algeria according to sex and speciality. In addition, our research aims to answer the following questions:

1. During the home-quarantine period, what is the nature of the attitudes of professors at the University of Algeria towards distance learning?
2. In terms of gender, are there any significant differences in the attitude of professors towards distance learning?
3. In terms of academic speciality, are there any significant differences between the professors' attitudes towards distance learning?

This study aims to:

1. Evaluate the attitudes of Algerian professors towards distance education;

2. Find out about the extent of the university's ability to engage in the endeavour of distance learning;
3. Find out about the difference in the perceptions of professors about distance learning according to gender or academic specialization?

The rest of this article is organized as follows: Section 2 describes the literature review. Section 3 introduces methods and materials. Sections 4 and 5 provide results and discussion. Finally, Section 6 summarizes the paper.

1 Literature review

With the rapid spread of COVID-19 pandemic, distance learning has become very important. Therefore, many several studies have been conducted on this topic. This section describes the relevant works related to the field of distance learning.

In the research study by Moreira, Santos Pereira, Durão, and João Ferreira (2018), the authors surveyed the views of professors in higher education regarding M-learning. Besides, they have also identified the needs of professors related to mobile technology and how they can be used to facilitate the participation of students within and outside the classroom. The study sample included 70 professors (37 Portuguese and 33 Spanish). The gender of most respondents was male (67.1%). Thus, the majority of professors were between the ages of 41 and 50 (55.7%). The obtained results conclude that the majority of professors know how to perform the most trivial task with mobile devices and high results about the utilization of both augmented reality and gamification applications.

Teachers' approaches to distance education are determined by Çelen, Çelik, and Seferoğlu (2013). There are 95 professors in the research sample (36.85% male and 63.15% female). The majority of participants decided to engage in activities for distance learning. Professors have stated that distance education programs are ineffective in terms of content, materials used, methods of assessment, the quality of the certificate taken at the end of distance education, and employment opportunities. In addition, more than half of the participants believed that the Turkish Open University courses were not adequate; they did not trust about half of the participants in the Turkish distance education program.

The Al-Emran et al.'s (2016) research aims to examine the attitudes of students and educators towards the use of M-learning in Oman and UAE higher education universities. 383 students and 54 instructors from five universities are involved in this study. The findings showed that the genders of both students and educators have a positive attitude towards M-learning, and there is no significant difference, which indicates that both men and women can adopt M-learning without any other special characteristics. Moreover, results showed that almost all educators have positive attitudes towards M-learning with no significant

difference in their academic ranks, academic experience, and smartphone ownership, suggesting that M-learning can be adopted by all educators. Besides, the results showed that mobile learning can become one of the promising pedagogical innovations used in higher education environments in the Arab Gulf countries (Al-Emran, Elsherif, & Shaalan, 2016).

In Uzunboylu and Ozdamli's research (2011), the research sample included 467 teachers from Cyprus' various universities. The outcome showed that the attitudes of male instructors were more positive than female instructors towards M-learning. In addition, teachers showed above-average levels of perception towards M-learning.

Alwraikat and Al Tokhaim's (2014) study aimed to investigate the attitudes of faculty members towards mobile learning at King Saud University. The study sample included 362 faculty members from King Saud University in Saudi Arabia. The findings showed that faculty members' attitudes toward mobile learning are positive. In addition, there are statistically significant differences attributed to sex in favour of female faculty members, academic rank in favour of instructor, and academic experience in favour of 21 years of experience and more.

2 Methods and materials

2.1 Participants

The study data were collected from 426 study participants. All participants were university professors of more than 35 universities across the country. In addition, the sample size consists of 142 (33.3%) females and 284 (66.7%) males. Regarding specialities, 145 (34%) participants Human and Social Sciences - Languages, 93 (21.8) technical and economic sciences, while 188 (44.1%) in other specialities. Table and figure below show the joint frequency distribution between gender and specialities (Table 1).

Table 1

Participant demographics

Characteristics	*Participants (n=426)*	*Frequencies (%)*
Gender		
Male	284	66.7
Female	142	33.3
Specialities		
Human and Social Sciences – Languages	145	34.0
Technical and economic sciences	93	21.8
Other specialities	188	44.1

2.2 Instruments and procedure

The questionnaire was answered by 14 professors to measure the validity and reliability Coefficient. We found the Alpha Cronbach coefficient equals 0.96. The Intrinsic validity coefficient equals 0.97. This means that the questionnaire contains Intrinsic valid.

The questionnaire included 32 questions divided into four factors:

1. Factor 1: Professor information (04 questions)
2. Factor 2: Use of technology (09 questions)
3. Factor 3: Distance learning (09 questions)
4. Factor 4: Professor and student relationship (09 questions)

A five-point Likert Scale, with Strongly Agree (5), Agree (4), neutral (3), Disagree (2), and Strongly Disagree (1), has been used to measure attitude.

Table 2

The factors and items of the questionnaire

Factors	*Items*
Professor information	Sex
	Academic rank
	Speciality
	Experience
Use of technology	Use the computer and the Internet comfortably.
	I handle email with ease.
	Comfortably control the course publishing platform.
	It facilitates my work more and saves effort.
	I have all the necessary capabilities.
	I can reach my goals.
	I can develop myself and my abilities.
	The quality of the education that I offer is enhanced.
	I have the desire to teach with this technique.
Distance learning	It makes it easier for me to design the teaching content.
	The information arrives is better and clearer.
	It is easier for me to explain the lesson more.
	Facilitate the evaluation process.
	All lessons can be delivered.
	I can carry out supervised directed work and applied works.
	Technology is compatible with all teaching methods.
	Have a desire to develop my capabilities.
	The technology is compatible with all materials.
Professor and student relationship	I communicate better with my students.
	Good student participation.
	Facilitates the delivery of knowledge to the student.
	The student's understanding of the subject increases.

The student can access the material at any time.
The process eases student laziness.
Contributes to raising the quality of student formation.
Reduces many problems.
It is a temporary solution for any emergency or stop.

In addition, the study hypotheses are:

1. Algerian professors accept the method of the distance learning process during the quarantine period.
2. There is no difference in the attitude among professors by gender towards the use of distance learning during the home-quarantine period.
3. There is no difference between professors' attitudes according to their academic specialization.

2.3 Data analysis

The statistical analysis was performed using SPSS. Based on the Kolmogorov Smirnov test, the Shapiro-Wilk test, skewness and kurtosis, the normal distribution was checked. The skewness and kurtosis ranging within −1/+1 range, which means that the data follow a normal distribution (Table 3). Moreover, this is confirmed by the Kolmogorov-Smirnov test and Shapiro -Wilk test, where the P>0.05 (Table 3).

A Chi-square test, the mean, standard deviation, and the midrange was used to evaluate the nature of the attitudes of Algerian professors towards distance learning. Moreover, the T-test was used to determine the differences according to gender. In addition, ANOVA test was used to determine the differences according to speciality. The values obtained after the analysis were interpreted with the 0.05 significance level.

Table 3

Normality test

	Kolmogorov-Smirnov		*Shapiro-Wilk*		*Skewness*	*Kurtosis*
	Statistics	*P*	*Statistics*	*P*		
Gender						
Male	0.042	0.200	0.994	0.302	0.092	0.023
Female	0.050	0.200	0.993	0.737	0.019	0.007
Specialities						
Human and Social Sciences – Languages	0.051	0.200	0.991	0.443	0.118	0.128

Technical and economic sciences	0.068	0.200	0.984	0.311	0.190	0.596
Other specialities	0.057	0.200	0.991	0.304	0.053	0.353

3 Results

Algerian professors accept the method of the distance learning process during the quarantine period.

In this section, the Chi-square test was used to determine if there were significant differences between the expected and observed frequencies in all items. The results of the Chi-square test show the presence of statistical significance because the P value is less than 0.05. In addition, there is a difference between the opinions of the sample members in all the items of the questionnaire, which tends to the positive opinion (Table 4).

Table 4

Chi-square test

Factors	*Items*	χ^2	*P*
Factor 2: Use of technology	Use the computer and the Internet comfortably.	340.268	.00
	I handle email with ease.	456.300	.00
	Comfortably control the course publishing platform.	220.315	.00
	It facilitates my work more and saves effort.	153.836	.00
	I have all the necessary capabilities.	94.610	.00
	I can reach my goals.	108.695	.00
	I can develop myself and my abilities.	257.638	.00
	The quality of the education that I offer is enhanced.	129.516	.00
	I have the desire to teach with this technique.	108.624	.00
Factor 3: Distance learning	It makes it easier for me to design the teaching content.	331.793	.00
	The information arrives is better and clearer.	159.117	.00
	It is easier for me to explain the lesson more.	134.352	.00
	Facilitate the evaluation process.	149.352	.00
	All lessons can be delivered.	135.972	.00
	I can carry out supervised directed work and applied works.	124.587	.00
	Technology is compatible with all teaching methods.	137.333	.00
	Have a desire to develop my capabilities.	221.277	.00
	The technology is compatible with all materials.	128.695	.00

Factor 4: Professor	I communicate better with my students.	143.906	.00
	Good student participation.	215.362	.00
	Facilitates the delivery of knowledge to the student.	123.319	.00
	The student's understanding of the subject increases.	173.977	.00
	The student can access the material at any time.	315.995	.00
	The process eases student laziness.	96.723	.00
	Contributes to raising the quality of student formation.	94.141	.00
	Reduces many problems.	144.141	.00
	It is a temporary solution for any emergency or stop.	416.042	.00

To find out the nature of the trend, we calculated the mean and standard deviation of the sample responses. After that, we compared them with the midrange. If the mean value is greater than the midrange value, this indicates the positive trend and vice versa.

$$\text{midrange} = \frac{(\text{number of questions} * \text{max Score}) + (\text{number of questions} * \text{min score})}{2} \quad (1)$$

$$\text{total score midrange} = \frac{(27 * 5) + (27 * 1)}{2} = 81 \quad (2)$$

$$\text{Factor midrange} = \frac{(9 * 5) + (9 * 1)}{2} = 27 \quad (3)$$

The table below shows that the professors' attitudes are positive for the total score and the three factors because the mean value of the total score (88.27) and the mean value of each factor (33.18 - 27.3 - 27.74) were greater than the total score midrange (81) and factor midrange for the three factors (27). As for the standard deviation for the total score and the three factors are (19.4-6.9 - 7.33 - 6.8) respectively (Table 5).

Table 5

Mean and standard deviation

Factors	*Mean*	*SD*	*Min score*	*Max score*	*Sum of degrees*	*Trend*
Factor 2: Use of technology	33.18	6.9	09	27	14135	+
Factor 3: Distance learning	27.35	7.3	09	27	11652	+
Factor 4: Professor-student relationship	27.74	6.8	09	27	11818	+
Total score of the questionnaire	88.27	19.4	27	135	37605	+

There is no difference in the attitude among professors by gender towards the use of distance learning during the home-quarantine period.

We used a parametric test which is the T-test because the data follow the normal distribution. The T-test will be used to determine the differences according to gender.

Table 6 shows that the F value is not statistically significant, where the P=0.845. This last is greater than the level of significance α=0.05, which indicates the equal variance of the homogeneity of the two samples. This last signifies that the assumption of equal homogeneity was achieved. Thus, we note that the value of t is not statistically significant (P=0.596), which is greater than the significance level α=0.05, and therefore there are no statistically significant differences according to the gender variable.

Table 6

Result of t-Test

		Levene's Test for Equality of Variances		*T-test for Equality of Means*	
		F	*P*	*t*	*P*
Mean of factor 1	Equal variances assumed	.038	.845	.530	.596
	Equal variances not assumed			.535	.593
Mean of factor 2	Equal variances assumed	1.025	.312	.796	.427
	Equal variances not assumed			.779	.437
Mean of factor 3	Equal variances assumed	1.164	.281	.244	.807
	Equal variances not assumed			.237	.813
Mean of the 4 factors	Equal variances assumed	1.157	.283	.577	.564
	Equal variances not assumed			.563	.574

There is no difference between professors' attitudes according to their academic specialization.

In this section, we use the ANOVA test to determine the differences according to the speciality variable (Table 8). Table 7 shows that the Levene Statistic value is not statistically significant (P>0.05) and thus the homogeneity condition is achieved.

Table 7

Homogeneity of variances test

		Levene Statistic	*P*
Mean of the four factors	Based on Mean	.003	.997
	Based on Median	.011	.989
	Based on Median and with adjusted df	.011	.989
	Based on trimmed mean	.002	.998

Table 8 and Table 9 show that the value of F is not statistically significant (P>0.05). Therefore, there are no statistically significant differences attributable to the speciality variable.

Table 8

Result of the ANOVA test

	F	*P*
Mean of factor 2	.663	.516
Mean of factor 3	1.660	.191
Mean of factor 4	.492	.612
Mean of the three factors	.834	.435

Table 9

Robust test of equality of means

		F	*P*
Average 1st axis	Welch	.729	.484
Average 2nd axis	Welch	1.680	.189
Average 3rd axis	Welch	.495	.610
Total average	Welch	.824	.440

4 Discussion

The obtained results indicate that there are positive trends among university professors towards distance learning during the home-quarantine period (first factor: mean = 33.18 and standard deviation = 6.9) (Table 5). In addition, the trends were also positive in the second factor related to the distance education subject (mean = 27.3 and standard deviation = 7.33). The professors' attitudes were also positive regarding the axis of the professor-student relationship (mean = 27.74 and standard deviation = 6.8).

We considered positive trends in the previous factor because the mean value of each factor is greater than the reference value of midrange (27).

The overall degree of trends among the professors' responses was positive with mean = 88.27 and standard deviation = 19.4. The mean value is greater than the reference value of the total score midrange (81) (Table 5).

The obtained results confirm the findings of many previous research and studies, such as the studies by Al-Emran, Elsherif, and Shaalan (2016), Alwraikat and Al Tokhaim (2014), and Yuen and Ma (2008).

These positive trends towards distance education can be explained related to its many characteristics and advantages. Distance learning is a good alternative to the traditional system (Qing, Yi-Jing, Yu-Hang, & Min-Chen, 2020). Also, it facilitates the training and qualification process for the student.

Moreover, it has been adopted as a teaching method approved by the Algerian Ministry of Higher Education and Scientific Research through ministerial decision No. 633 dated August 26, 2020. This last specifies the exceptional provisions authorized in the field of organization, management, and evaluation of students during the COVID-19 period for the 2019-2020 academic year.

In the second hypothesis, a T-test was carried out to examine if there is any statistically significant difference between the professor' attitudes towards the use of distance education according to their gender. The finding did not indicate any significant differences among the professors in their attitudes in terms of their gender. The result of this research question could be attributed to the fact that female and male professors in Algeria are working together in this sector and both of them have enough technological background. Hence, no significant difference has been noticed. Similarly, Al-Emran, Elsherif, and Shaalan (2016) found that there is no statistically significant difference between the professor' attitudes towards the use of M-learning according to their gender. On the contrary, studies like Uzunboylu and Ozdamli (2011) and Alwraikat and Al Tokhaim (2014) indicated that there is a statistically significant difference among the professors' attitudes towards the use of M-learning according to their gender. Uzunboylu and Ozdamli (20110 indicated that male professors' attitudes were more positive towards M-learning than female professors. In addition, Alwraikat and Al Tokhaim (2014) found out that female professors' attitudes were more positive towards M-learning rather than male professors.

In the third hypothesis, an ANOVA test was carried out to examine if there is any statistically significant difference among the professor' attitudes towards the use of distance education according to their speciality. The obtained result did not indicate any significant differences among the professor in their attitudes in terms of their gender.

Finally, we conclude that Algerian universities were able to engage in the endeavour of distance learning, and this is to save the university season. In

addition, professors have an active role in this. The results of this study are the best evidence.

Conclusion

With the emergence of technology and the spread of the pandemic, it became necessary to rely on distance education. The main contribution of this study is to explore the attitudes of Algerian university professors towards distance education during the quarantine period, and its relationship to gender and speciality. Results indicate that there are positive trends among university professors towards distance learning during the home-quarantine period.

The finding indicated that professors' gender has positive attitudes towards distance learning with non-significant differences. This last means that distance learning can be adopted by both sexes without any additional special features. Moreover, the finding demonstrated positive attitudes towards distance learning with non-significant differences concerning their speciality. This last means that professors' speciality was not a hindrance in the distance learning process. Also, they do not need training.

In addition, after the quarantine is completely over and the pandemic continues, the Algerian University has adopted the hybrid system in education. This last combines the face-to-face education and distance education.

References

Al-Emran, M., Elsherif, H. M., & Shaalan, K. (2016). Investigating attitudes towards the use of mobile learning in higher education. *Computers in Human Behavior, 56*, 93-102. https://doi.org/10.1016/j.chb.2015.11.033

Alwraikat, M., & Al Tokhaim, H. (2014). Exploring the potential of mobile learning use among faculty members. *International Journal of Interactive Mobile Technologies, 8*(3), 4-10. https://doi.org/10.3991/ijim.v8i3.3682

Çelen, F. K., Çelik, A., & Seferoğlu, S. S. (2013). Analysis of teachers'approaches to distance education. *2nd World Conference on Educational Technology Researches - WCETR2012, 83*, 388-392. https://doi.org/10.1016/j.sbspro.2013.06.076

cursus. (2005). Retrieved from https://cursus.edu/fr/4761/coselearn-promouvoir-le-e-learning-en-afrique-francophone

Metzgar, M. (2021). Effect of online learning on transfer student success. *Acta Educationis Generalis, 11*(2), 51-59. https://doi.org/10.2478/atd-2021-0012

Ministry of Health and Population. (2020). Retrieved from http://www.sante.gov.dz/communiques/82-documentation/502-point-de-situation-sur-le-covid-19-le-29-02-2020.html/

Moreira, F., Santos Pereira, C., Durão, N., & João Ferreira, M. (2018). A comparative study about mobile learning in Iberian Peninsula Universities: Are professors ready? *Telematics and Informatics, 35*(4), 979-992. https://doi.org/10.1016/j.tele.2017.09.010

Pesti, C., Tamášová, V., Lajčin, D., & Bodonyi, E. (2021). University - industry collaboration as a drive for innovation in Europe – a literature review with a systematic approach. AD ALTA: Journal of Interdisciplinary Research, 11(2), 41-46, https://doi.org/10.33543/1102

Qing, Z., Yi-Jing, H., Yu-Hang, Z., & Min-Chen, D. (2020). The evaluation of online course of Traditional Chinese Medicine for MBBS international students during the COVID-19 epidemic period. *Integrative Medicine Research,* 1-18. https://doi.org/10.1016/j.imr.2020.100449

Torun, E. D. (2020). Educational use of social media in higher education: Gender and social networking sites as the predictors of consuming, creating, and sharing content. *Acta Educationis Generalis, 10*(2), 112-132. https://doi.org/10.2478/atd-2020-0013

Uzunboylu, H., & Ozdamli, F. (2011). Teacher perception for m-Learning: Scale development and teachers' perceptions. *Journal of Computer Assisted Learning, 27*(6), 544-556. https://doi.org/10.1111/j.1365-2729.2011.00415.x

WHO. (2020). Retrieved from https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020

Yuen, A. H., & Ma, W. W. (2008). Exploring teacher acceptance of e-learning technology. *Asia-Pacific Journal of Teacher Education, 36*(3), 229-243. https://doi.org/10.1080/13598660802232779