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COVID-19 Pandemic Goes Endemic: Social Distancing Measures and Use of Different Digital Platforms in Higher Education

Abstract

In these difficult times of the COVID-19 pandemic and of the implemented social distancing measures, it is not clear how this affects university teachers and whether the digital turn contributes in shaping their affective makeup. The present study aims to investigate the relation between the use of technology and teachers' affective makeup together with their social and professional connectedness. For this to obtain, three research questions were raised: (1) Is the proportion of teachers who have regular access to the Net the same as the proportion of those whose access is not regular? (2) Are social media platforms users more likely to feel satisfied with what technology offers to stay *socially* connected than other digital platforms users (namely, blogs, websites, wikis, file sharing sites, etc.)? (3) Is teachers' satisfaction with what technology offers to stay *professionally* connected related to type of digital platform used? A questionnaire was administered via email to 161 teachers; only 26 responded. The raw data were submitted to a ***Chi-square Goodness of Fit test*** and a ***Chi-square of Independence test*** using **SPSS**. While the results were statistically significant for the former test, they were not so for the latter. Implications and recommendations are thereby discussed.

***Keywords*:** Closures, COVID-19, digital platforms, education, social distancing.

1. Introduction

The World Health Organisation declared the coronavirus (COVID-19) outbreak a pandemic on March 12, 2020 (Viner et al., 2020). It is the latest of the terrifying unseen forces that mankind have faced to date. The outbreak was identified in Wuhan City, China, in December 2019. This pandemic is now endemic worldwide. Algeria is no exception; on February 25th, 2020, its first case of the coronavirus – an Italian entering Algeria on February 17th – was confirmed.

The virus spreads during close contact between people. Preventive measures are being implemented everywhere across the world. These include social distancing policies, facility closures and lockdowns, travel and business restrictions, to name but a few. As such, this has induced several affective, socioeconomic harms, of which the educational is a crucial part. Surrounded by the spectre of the coronavirus pandemic, that is, people might well feel being kept hostage, or being socially and/or professionally disconnected.

Educational institutions, like several other sectors, have been affected by COVID-19 worldwide. If the truth were told, notwithstanding the harms, social distancing measures have *not suspended* teaching/learning activities thanks to what digital platforms offer. As educational institutions and workplaces mandated that work should be done from home, universities have shifted to tele-teaching/learning and online work. The world is witnessing an unprecedented transformation to the digital in the history of mankind. Never before has it faced such a situation, and one wonders whether in the wake of the digital one should look to the brighter side (e.g., virtual connectedness), or instead to the darker side (e.g., both the digital and the physical/social divide) the pandemic is uncovering.

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2. Literature Review

2.1 Social Distancing Measures in Response to COVID-19 Pandemic

With the rapidly evolving COVID-19 pandemic, governments worldwide have endeavoured to control the epidemic and make it a top priority. They have mandated social distancing, but no doubt, we are all aware that non-respect of distancing measures, in some areas, resulted in the further spread of the pandemic.

Social distancing measures have been adopted to make the epidemic less endemic. Distancing measures are actions taken to minimise close contact between individuals and thus the spread of COVID-19. Measures range from quarantines to closures of schools, workplaces, and shopping centres. Individuals are, therefore, said to be socially distanced by staying at home, limiting travel, avoiding crowded areas, and physically distancing themselves from others, hopefully one to two meters of physical distance (see Nussbaumer-Streit, 2020). The European Centre for Disease Prevention and Control (ECDC, 2020, p. 2) put it as follows:

> The term 'social distancing' refers to efforts that aim, through a variety of means, to decrease or interrupt transmission of COVID-19 in a population (sub)group by minimising physical contact between potentially infected individuals and healthy individuals, or between population groups with high rates of transmission and population groups with no or a low level of transmission.

The following is an account of several different types of social distancing measures and their rationale, at individual and group level (see ECDC, 2020, p. 3-4). Social distancing measures range from *individual social distancing measures* to *group social distancing measures* affecting multiple persons. They can be voluntary or mandatory. It is commonsensical that the earlier the implementation of social distancing measures, the more effective will they prove in slowing the spread of the pandemic. It is the author's contention that, when mandatory, such measures might develop in people the feeling of being kept hostage to the pandemic; that is, social distancing might bring a range of psychological harms, not to mention the economic harms which are also high. Some elaboration seems to be in order.

2.1.1. Individual social distancing

From the name of it, *individual social distancing measures* concern the individual. There are such measures as isolation of cases, quarantine of contacts, stay-at-home recommendations, and the like (see ECDC, 2020).

2.1.1.1. Isolation of cases

Isolation of cases has been recommended for those diagnosed with COVID-19 and those who are suspected of having been infected. Cases, which are confirmed or suspected of COVID19, are isolated in one of two ways: they are either hospitalised to receive care, or put in dedicated isolation facilities/homes. While the former, hospitalisation, usually concerns moderate or severe cases, the latter option is dedicated to mild cases. Of note, case isolation can be either voluntary or mandatory. The rationale behind separating the sick from the healthy is obviously to avoid transmission.

2.1.1.2. Quarantine of contacts

Depending on contact investigations, healthy persons who prove to have had a high- or low-risk contact with a confirmed COVID-19 case are put to quarantine. Here also, quarantine of cases can be either voluntary or mandatory. Usually, these suspected cases are recommended to self-quarantine in a safe area or at home; once symptoms are detected, a test is immediately carried out for surety reasons. If the disease manifests and develops, separation from other healthy persons is taken as a measure to avoid transmission.

2.1.1.3. Stay-at-home recommendations

Transmission of COVID-19 depends on many factors, most obviously physical distance. The public is recommended to stay at home, remain distant, and avoid close contacts with people or mass gatherings; avoiding close contacts is especially true when this concerns known high-risk groups. Recommendations for voluntary social distancing of persons are meant to reduce transmission and thereby decrease the pressure to hospitals.

2.1.2. Social distancing affecting multiple persons

According to ECDC (2020), *social distancing measures* affect as well multiple persons. Such measures are manifold; they include closure of educational institutions, workplace closures, mass gathering cancellations, etc.

2.1.2.1. Closure of educational institutions

Are school closure measures effective in response to coronavirus outbreaks? If the truth be told, the pandemic is endemic where gatherings are commonplace and educational institutions are no exception. School closure includes day-care centres, kindergartens, and schools; this is not a novel phenomenon given that preventing contact among children was used repeatedly as a prevention measure in influenza outbreaks and pandemics to interrupt the transmission (Jackson et al., 2016). Closure of higher educational institutions includes universities, research institutes, and the like; in fact, in such institutions large numbers of people assemble in confined spaces.

In answer to our question, then, school closures during coronavirus outbreaks are likely to contribute to the control of the epidemic; in fact, during epidemics, unofficial student and staff absenteeism, whether due to illness or to precaution, can be very high regardless of official school closure or other distancing policies (Viner et al**.,** 2020). In Algeria, like in the rest of the world, closure of educational institutions was deemed necessary to face the spectre of the Coronavirus (COVID-19) pandemic and reduce it to a minimum. By March 18, 2020, the UN Educational, Scientific and Cultural Organisation declared that 107 countries put into effect national school closures, affecting in total 862 million children and young people, a number that is roughly half the global student population; strikingly, this had quickly rocketed from 29 countries with school closures a week before (Viner et al., 2020).

Inherent in universities closure is, it goes without saying, the cancellation/postponement of such mass gathering events as conferences, workshops, project meetings, research trips and field work, visiting students and teaching staff from other countries who may have specific visas, etc. This, doubtless, is not without concomitant incurring loss of funds. Research is, therefore, urgently needed both on the effect of school/university closures and on their effectiveness to inform policies related to pandemics.

2.1.2.2. Workplace closures

These relate to the closure of offices, factories, restaurants, supermarkets, cafes, sports clubs, transport, etc. Reducing work-related contacts is aimed at avoiding transmission among medium-to-large numbers of people in confined spaces over extended periods. Be that as it may, the process may allow flexible working schedules/shifts for employees (i.e. ensuring that essential services are maintained, even if they can only be manned by skeleton staff: take, for instance, healthcare, fire services, law enforcement, pharmacies, grocery shops, internet providers, and such utilities as water, gas and electricity). This is likely to encourage physical distancing measures within the workspace, not to mention reducing contact among employees and between employees and customers. This does not exclude promoting the use of other personal protective countermeasures.

2.1.2.4. Mass gathering cancellations

Mass gatherings are a sure vehicle of epidemics. There are such mass gatherings as cultural events (e.g., theatres, cinemas, etc.), sporting events (e.g., football matches, indoor and outdoor athletic games, and other competitions), festivals, religious events, conferences, meetings, exhibitions, and gatherings of the like. Such gatherings are prone to transmission of the coronavirus among large numbers of people in confined spaces (attendees may be in close contact on public transportation, at the entrance and exit, etc.) and their avoidance becomes, thus, a necessity.

2.2. Closures and Digital Platforms in Education

The coronavirus lockdown is having an unprecedented impact on education worldwide. As aforementioned, most governments around the world have implemented social distancing measures via closures of educational institutions (e.g., schools, colleges, universities) in an attempt to contain the spread of the coronavirus (COVID-19) pandemic. Closures of educational institutions, in Algeria, were initiated nationally by mid-March, 2020, as part of a broader series of stringent control and social distancing measures during the COVID-19 epidemic. These closures were later extended to April, May, then to June. Viner et al. (2020) cited a 2018 review of 31 studies investigating whether or not school closure had a quantifiable effect on influenza transmission indicating that such a measure "*reduced the peak of the related outbreak by a mean of 29·7% and delayed the peak by a median of 11 days*" (p.397). They also reported on a 2020 systematic review of school closures together with other social distancing measures during influenza outbreaks providing compelling evidence that closures reduced transmission, provided schools did not reopen.

A great many countries are currently implementing nationwide closures, affecting most if not all of the world's student population. No wonder, international and official exams, like Baccalaureate exams, have been wisely postponed (e.g., Algeria). This way, social distancing policies are likely to prove effective, provided they are coupled with other distancing measures.

The use of the term *social distancing* gave rise to false implications that individuals should engage in utter social isolation. Of course, people can stay in contact with others while pursuing alternative and safer means. It cannot be denied that it is *physical distancing* that we are after, not *social distancing* as such, implying the intent of *reducing physical contact* while *maintaining social connections*; social connections can, actually, be pursued either *virtually* or *at a distance*. As put by ECDC (2020, p. 3), in trying to reduce physical contact so as to interrupt the transmission of the epidemic,

> social distancing measures that are implemented over an extended period require that people maintain social contact – from a distance – with friends, family and colleagues i.e. social and professional life should in no way stop. Internet-based communications are therefore a key tool for ensuring a successful social distancing strategy.

To push further on these lines, and with regard to school closures, UNESCO (2020) urged the use of *distance teaching/learning* via open educational platforms and applications, the thing that has enabled both schools and teachers to reach learners remotely, teach at distance, and make the enterprise of education less disrupted. In the midst of scientific uncertainty concerning COVID-19, educators and policy-makers could in no way wait for an indefinite outlet; many started working already to make the transition to a virtual classroom environment a reality, trying different ways to engage with their students online and ensure they have the resources they need to pursue their studies. If the truth be told, during this challenging and unprecedented period, remote access to educational resources and platforms has become essential. Clearly then, in a time when the coronavirus lockdown is putting particular strain on teachers and their students, the digital/virtual tools have eased the mind of their users and, as such, reduced the

accompanying terrifying pressure. This way, they are not likely to feel kept *hostages* to the pandemic, nor will they feel *professionally* or *socially distanced*.

A good case in point may be the case of the University of Mila, whose teachers connect pedagogically with students and administratively with their respective departments using a variety of digital tools. They use emails, Moodle e-leaning platform, Google Meet, the social media and their like. In the English Department, teachers created a Facebook page and all of teachers, students, and the administrative staff can join the group to keep abreast of the latest news. This way, they hardly if ever feel professionally disconnected.

2.2.1. Does tele-work work?

What is happening today due to the pandemic is, clearly, a huge and unprecedented digital transformation that is already well underway. The pandemic is especially making this more visible, more challenging, more glaring by adding an increasingly important feature to the digital world: *virtual work* or working from home. Tele-working is not only possible, but often also necessary, and for many even preferable. In these difficult times, tele-working, through the use of video-conferencing tools for meetings, as a good case in point (think of tele-teaching enabling remote teacher/learner interaction), is no longer an option. We are witnessing what might be the future of work in general, and teaching in particular.

Since COVID-19 began spreading in Algeria, and obviously through the rest of the world, the number of people working from home has increased dramatically. It seems that the pandemic is forcing institutions to use new ways to do their jobs, ways that are gaining increasing popularity. While hundreds of millions of students are distanced from school, teachers are using different digital platforms for remote teaching/learning purposes; to illustrate, they are using emails, social media, Moodle e-learning platforms, Google tools, and any other tool at hand. This is likely to induce the feeling of being more connected, at least professionally. Let us elaborate on two examples of Google tools, namely Google Meet and Google Classroom.

2.2.2. Google Tools

Google tools include such applications as Google Meet, Google Classroom, Gmail, Hangouts, Google Drive, Google Docs, Google Forms, Google Calendar and the like. Google Meet and Google Classroom are especially relevant for educational concerns, and need to be made use of now more than ever before.

2.2.2.1. Google meet

In this time of pandemic, and exactly in March, 2020, Google extended free availability of its advanced Google Meet video-conferencing features for everyone, including education and non-profit customers, to ensure individuals, groups and teams, businesses and organisations, and especially schools and higher educational institutions continue their work during this crisis (blog.google, 2020). Now, anyone with a Gmail address can sign up for Meet and use Google Calendar for scheduling to easily start a virtual meeting.

Google aspires behind launching such technology to help us connect, both socially and professionally, in a time when we are apart; this is true whether we are tele-teaching/learning, tele-working with teammates, or else. More importantly, it helps us stay safe and be productive. For example, in the University of Mila, teachers, students and other pedagogical staff have been able to log on repeatedly at the scheduled time and take part in video pedagogical or scientific meetings, discussions and chats with the participants. This has, certainly, prevented us from feeling professionally or pedagogically distanced. Now, the same is true for social meetings.

2.2.2.2. Google classroom

Google Classroom is an online educational platform developed by Google for schools. It is designed for teacher-student communication**,** distribution and collection of digital work, which helps to implement a digital or blended learning classroom. It was officially released in August, 2014 (Keeler & Miller, 2015). It allows teachers to go digital with their students, connecting with them, sharing teaching/learning resources, creating and organising assignments in a paperless, digital environment, providing feedback, and building creative projects into their daily lessons.

Google Classroom is integrated in Google Apps for Education that is a suite of productivity tools including Gmail, Drive and Docs. As such, and as indicated by Keeler and Miller, users can have recourse to Gmail for communication, Google Calendar for scheduling, and Google Drive for providing online storage for digital documents: Google Docs for text documents, Google Slides for presentations, Google Sheets for spreadsheets, Google Drawing and Google Forms. The surprise is that there is no need for hardware to be installed on students/teachers' devices because the foregoing productivity tools help create documents from the cloud. By now, it should be understood that only an Internet connection is required.

Google Classroom is available free to anyone and can be accessed using a computer or a smartphone. In creating a class within Google Classroom, teachers can provide their students with a private code to join a class (unless automatically importing a list from a school domain) or send an invitation using email, the thing that enables participants to start discussions whose concern is class information, assignments, and other pedagogical matters. For each class, a separate folder is created in the respective user's Drive, where the student can submit work to the teacher. The teacher, then, can monitor each student's progress, grade each student's work, and return the work along with comments.

Now, educational institutions can go digital to a paperless system thanks to what Google Classroom offers. Besides, it is possible for any Google user to create a class and start teaching virtually.

2.2.3 Is the coronavirus (divide) widening the digital divide?

The metaphor of the *digital divide* refers to either having or not having access to the Internet – the two sides of the divide being the underserved and the over-privileged (Monroe, 2004; Warschauer, 2003). Putting some learners at a disadvantage when using technology might well widen the digital divide (Huang, et al., 2019) and in this way, it violates their basic rights.

What adds to the situation is the fact that Covid-19 is uncovering and deepening differences across people with regard to internet access, in their attempt to virtualise work, particularly teaching, and to cope with the new situation and the imposed digital transformation. In other words, in this time of pandemic, many are caught in the digital divide separating those who have high-speed Internet access and those who do not. Granting that many Algerians are disconnected, it becomes justified to ask: does distant teaching/learning really work?

People, institutions, and countries alike cannot change overnight. The pandemic is uncovering the reality of a sudden digital divide, a divide that is to spread for sure and that deepens the gap within societies. In business, those that cannot change are likely to be left behind, with all this implies in terms of economic harms and hardships that will affect primarily the employees and their families. In education, at a fragile moment like this, school closures are leaving students without computers or Internet way behind because studying from home is a luxury that many cannot afford. There seems to be still, notably in Algeria, an online learning divide, and this is true of, not only students, but of a great many teachers as well. When it comes to rural areas and low-income families, the situation is worse off for they are left lagging behind. Then, what of the online courses and assignments?

3. Methodology

3.1. Context

In these difficult times of the COVID-19 pandemic and of the implemented social distancing measures, namely closures of educational institutions, it is not clear how this impacts university teachers; it is not equally clear whether or not the digital turn contributes in shaping their affective makeup. In light of the foregoing, the present study aims to investigate the relation, if at all, between the use of technology and teachers' affective makeup together with their social and professional connectedness. For this to obtain, three research questions were raised:

1. Is the proportion of teachers who have regular access to the Net the same as the proportion of those whose access is not regular?

2. Are social media platforms users more likely to feel satisfied with what technology offers to stay *socially* connected than other Web users (namely, blogs, websites, wikis, file sharing sites, etc.)?

3. Is teachers' satisfaction with what technology offers to stay *professionally* connected related to, or independent from, type of digital platform used?

These research questions convert into the following *alternative hypotheses*:

H_1 = The proportion of teachers who have regular access to the Net is different from the proportion of those whose access is not regular.

H_0 = The *null hypothesis* would be that the proportion of teachers who have regular access to the Net is the same as the proportion of those whose access is not regular.

H_2 = Facebook (and other social media platforms) users are more likely to feel satisfied with what technology offers to stay *socially* connected than other Web users (namely, blogs, websites, wikis, file sharing sites, etc.).

H_0 = Satisfaction with what technology offers to stay *socially* connected is independent of the type of digital environment used.

H_3 = Teachers' satisfaction with what technology offers to stay *professionally* connected is related to the type of digital platform used.

H_0 = Teachers' satisfaction with what technology offers to stay *professionally* connected is independent from the type of digital platform used.

3.2. Participants

The sample of this study consisted of 26 university teachers from different universities in Algeria – higher educational institutions from Mila, Batna, Jijel, Guelma, Bejaia, Skikda, Annaba, Wargla, Setif and Eulma. As can be noticed from *Table 1*, the total number divides into 7 male and 19 female teachers. The questionnaire was administered via email on two phases; on the first occasion, it was sent to 149 teachers or so, but because only few of them replied it was sent to some 12 more teachers – for three of these, it was just a reminder. In total, and as already mentioned, only 26 respondents were eventually involved.

Table 1.

Gender Frequencies

		Frequency	**Percent**	Valid Percent	Cumulative Percent
Valid	**Male**	7	26.9	26.9	26.9
	Female	19	73.1	73.1	100.0
	Total	26	100.0	100.0	

3.3. Procedure

3.3.1. Instrument

A structured questionnaire was used to collect data from the participants. It may be worth our while to indicate that originally the administered questionnaire was constructed in such a way as to inform two separate research studies, having different types of research questions, with variables of a different nature, at different levels of measurement, and consisting of different item numbers. As such, only items that are relevant to the present study and its aims are included in the analysis and in the appendix (i.e. the questionnaire).

3.3.2. Coding the data

The variables are categorical. On the whole, each test item was dichotomously responded to as 'yes' or 'no', and the data were coded on a 0 to 1 point scale. Where there were missing data (e.g., failures to respond in terms of abstaining, forgetting, missing), it was coded as 5 so that SPSS would recognise it as being out of the range of the offered options.

3.3.3. Analysis

To answer our research questions and test our hypotheses, raw data were entered, coded, and computed for further use in the statistical analyses using the Statistical Package for the Social Sciences (**IBM SPSS**) software (version 21). The **Chi-square** is the appropriate hypothesis-testing tool given that the variables in our study are classified as nominal variables. The raw data were submitted to a ***Chi-square test for Goodness of Fit*** to compare the proportion of cases and test if there is a difference between the respective categories i.e. to determine if the counts are equal or unequal. They are, then, submitted to a ***Chi-square test for Independence*** to explore the relationship between our two categorical variables i.e. to compare the observed proportions of cases in each of the categories with those that would be expected if there was no association between the two variables being measured. That is, given that the study seeks to determine if the two variables are related, the *Chi-square test for Independence* is the one to be used.

4. Results and Discussion

Twenty-six university teachers took part in the present study by answering a structured questionnaire. When asked which type of device they use to connect to the Internet, 34.6% indicated that they do so more via Laptop whereas 65.4% happen to use Smartphone more (see Table 2a below). With regard to the type of digital platform used, 26.9% indicated they use many blogs, websites, wikis, file sharing sites, etc., while 73.1% tend to use much Facebook and other social media environments. When asked whether they feel hostage, 53.8% said they do and 46.2% indicated that they do not. It seems that our sample of teachers, on the whole, connect to the Internet using different devices and platforms, which means they do not suffer from the digital divide that might prevent them from connecting socially with other people and

pursuing their educational duties. Be that as it may, this does not help much when it comes to their affective side, namely the feeling of being kept hostage during the pandemic and the concomitant social distancing policies (see Tables 2a-c below).

Table 2.

Frequencies

a. Device Used		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Laptop	9	34.6	34.6	34.6
	Smartphone	17	65.4	65.4	100.0
	Total	26	100.0	100.0	

b. Digital Platform Used		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Blogs, etc.	7	26.9	26.9	26.9
	Facebook, etc.	19	73.1	73.1	100.0
	Total	26	100.0	100.0	

c. Hostage		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	12	46.2	46.2	46.2
	Yes	14	53.8	53.8	100.0
	Total	26	100.0	100.0	

In an attempt to put the first hypothesis to the test and answer the respective research question (determining if the counts in the two categories are equal or unequal), a *Chi-square test for Goodness of Fit*, comparing the proportion of teachers who have regular access to the Internet, was used. The test indicated a significant difference between those who have (25 out of a total of 26) and those who do not (1 out of 26), $\chi 2$ (1, n = 26) = 22.15, p = .000 (see Tables 3a&b below). The Sig. value of .000 is smaller than the alpha value of .05, so we can conclude that the result is significant i.e. there is statistical evidence for us to reject the null in favour of the alternative hypothesis.

Table 3a.

Frequencies

	a. Net Access		
	Observed N	**Expected N**	Residual
No	1	13.0	-12.0
Yes	25	13.0	12.0
Total	26		

Table 3b.

Chi-Square Test

	b. Test Statistics
Chi-Square	22.154[a]
Df	1
Asymp. Sig.	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 13.0.

To answer the second research question and obtain evidence for the concomitant hypothesis, our sample of university teachers were asked whether they were satisfied with what technology offers for them to stay *socially* connected. The *Chi-square test for Independence* (with Yates' Continuity Correction (see Field, 2009)) indicated no significant association between the type of digital platform used and the feeling of being socially connected (during the pandemic), $\chi 2$ (1, n = 25) = .41, p = .52 (see Table 4c below). Stated otherwise, the two events appear to be independent of one another.

The Sig. value is .52 which is larger than the alpha value of .05, but because we have a 2 by 2 table that has two cells with an expected count less than 5, we should consider reporting Fisher's Exact Probability Test instead; this is .47, respectively. At any rate, we can conclude that our result is *not* significant, meaning that the proportion of Facebook-like platforms users is not significantly different from the proportion of teachers using blogs and their like.

Because the test is not statistically significant, we will not pursue analysing the difference between the observed and expected frequencies (counts) in the "Digital Platform*****Social Connection Satisfaction Cross-tabulation table" to determine the strength of the relationship between the two variables. We will not either report phi coefficient.

Also of note, the Case Processing Summary table below displays the number of valid (and missing) cases for the data set. A quick glance will indicate that, with regard to this item of information, 25 participants had valid observations in the data set, but 1 out of 26 subjects is missing, meaning that no answer was recorded.

Table 4a.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
		Percent		Percent		Percent
Digital Platform * Social Connection Satisfaction	5	96.2%		3.8%	6	100.0%

Table 4a.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Digital Platform * Social Connection Satisfaction	25	96.2%	1	3.8%	26	100.0%

Table 4b.

*Digital Platform * Social Connection Satisfaction Cross-tabulation*

			Social Connection Satisfaction		Total
			No	**Yes**	
Digital Platform	**Blogs, etc.**	Count	1	4	5
		Expected Count	1.6	3.4	5.0
		% within Digit. Platform	20.0%	80.0%	100.0%
		% within Soc. Con. Satis.	12.5%	23.5%	20.0%
		% of Total	4.0%	16.0%	20.0%
		Std. Residual	-.5	.3	
	Facebook, etc.	Count	7	13	20
		Expected Count	6.4	13.6	20.0
		% within Digit. Platform	35.0%	65.0%	100.0%
		% within Soc. Con. Satis.	87.5%	76.5%	80.0%
		% of Total	28.0%	52.0%	80.0%
		Std. Residual	.2	-.2	
Total		Count	8	17	25
		Expected Count	8.0	17.0	25.0
		% within Digit. Platform	32.0%	68.0%	100.0%
		% within Soc. Con. Satis.	100.0%	100.0%	100.0%
		% of Total	32.0%	68.0%	100.0%

Table 4c

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.414[a]	1	.520		
Continuity Correction[b]	.011	1	.915		
Likelihood Ratio	.442	1	.506		
Fisher's Exact Test				1.000	.475
Linear-by-Linear Association	.397	1	.529		
N of Valid Cases	25				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.60.

b. Computed only for a 2x2 table

In order for us to answer the third research question and test the third hypothesis, this time the participants were asked whether they were satisfied with what technology offers for them to stay *professionally* connected. A *chi-square test for Independence* was computed to compare the proportions of satisfaction status, revealing no significant association to the type of digital platform used during the coronavirus pandemic, $\chi 2$ (1, n = 26) = 1.565, p = .21(see Table 5b below). Stated differently, there is no significant dependence of one variable on the other.

The Sig. value of .21 is larger than need be, and Fisher's Exact Test is .22, which means that our result is *not* significant and the null hypothesis cannot be rejected. This indicates that the proportion of teachers using mostly social media platforms is not significantly different from the proportion of users of blogs and the like.

Table 5a.

*Digital Platform * Professional Connection Satisfaction Crosstabulation*

			Professional Connection Satis.		Total
			No	**Yes**	
Digital Platform	**Blogs, etc.**	Count	1	5	6
		Expected Count	2.3	3.7	6.0
		% within Dig. Platform	16.7%	83.3%	100.0%
		% within Prof. Con. Satis.	10.0%	31.3%	23.1%
		% of Total	3.8%	19.2%	23.1%
		Std. Residual	-.9	.7	
	Facebook, etc.	Count	9	11	20
		Expected Count	7.7	12.3	20.0
		% within Dig. Platform	45.0%	55.0%	100.0%
		% within Prof. Con. Satis.	90.0%	68.8%	76.9%
		% of Total	34.6%	42.3%	76.9%
		Std. Residual	.5	-.4	
Total		Count	10	16	26
		Expected Count	10.0	16.0	26.0
		% within Dig. Platform	38.5%	61.5%	100.0%
		% within Prof. Con. Satis.	100.0%	100.0%	100.0%
		% of Total	38.5%	61.5%	100.0%

Table 5b.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.565[a]	1	.211		
Continuity Correction[b]	.597	1	.440		
Likelihood Ratio	1.714	1	.190		
Fisher's Exact Test				.352	.225
Linear-by-Linear Association	1.505	1	.220		
N of Valid Cases	26				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.31.

b. Computed only for a 2x2 table

In summary, performing a *Chi-square Goodness of Fit test* in SPSS, the results turned out to be statistically significant, so we gain confidence in our hypothesis and reject the null. In running a *Group-Independence Chi-square test*, the analysis showed that there is no statistically significant difference, so we reject the hypothesis that the variables are related and gain confidence in the null that they are independent. Phi and Cramer's V measures of the strength of association between the two categorical variables are not necessary because there is no point in asking for the effect size if the results are not statistically significant.

In what follows, an attempt will be made to discuss some limitations, implications and recommendations generated from the study. Before anything, let us start with the limitations. For reminder purposes, the questionnaire was administered to more than 160 university teachers. Unfortunately, only a total of 26 participants responded. Of course, this is not without consequences on the effect size and statistical power. As known, one of the assumptions of the Chi-square test is that the sample size should be relatively large, such that the expected frequencies for each category are at least 1, and for 80% or more of the categories the expected frequencies are at least 5. In effect, all assumptions were met regarding the *Chi-square Goodness of Fit tes*t, which is not true of the *Chi-square of Independence test*. While the first assumption was luckily met, the second is unfortunately not – 2 cells (50%) have expected counts less than 5 – obviously, the only way out is to add more subjects to the sample; however, because this is beyond reach, it is important in this situation to consider using Fisher's exact test (Field, 2009) – this is exactly what we have opted for.

As for the implications, a number of considerations are in order. The coronavirus has made socialising next to impossible. Nevertheless, socialising does not need to be in terms of physical closeness; it could well be virtual. In fact, connecting with other people has long been a human characteristic and this is true even for the introverted. Certainly, working/teaching from home may serve convenience, but this lacks eye contact experienced during a conversation; video-conferencing, e-learning platforms, and their like cannot make up for that. When teachers are face to face with their students, they are most likely to have their undivided attention.

Most pertinent to the present study are, of course, considerations of an educational nature. Luckily, what digital platforms we have at hand have prevented social distancing measures from suspending educational continuity. It is crucial to note that, given the present findings, the sample of teachers have access to the Net which has secured continuity of education; still, unequal access to digital education, among the remainder of the teacher population and their students, might be a challenge.

To push further on these lines, the *coronavirus divide* should not be a problem for education; the real problem is the *digital divide*. If it does not constitute a problem for the sample of teachers in the present study, one may of right question whether the sample in question is representative of the parent population. One may go even so far as to ask questions about students and the likelihood of their affordance of access to the Net. It is worth adding that the term 'digital divide' is equivocal: networked screens are distancing or dividing, but they are also not afforded by all people, the thing that might well make the digital divide even more glaring i.e. being both dividing physically and/or socially and dividing in terms of affordance of access. If so, because of the disparities, an important proportion of learners might avoid, or be deprived from, online learning. One may rightly ask, then, if in Algeria learners have the basic technology needed to access their virtual lessons. One may even be justified to conjecture that if distance learning is not available to all learners, it cannot be made available just for some. This is relevant because while some students are learning remotely, many may not be getting any instruction at all.

To bring this line of thought to a positive close, working/teaching from home may serve convenience, but even if the coronavirus goes away, tele-working, video-conferencing and e-learning are here to stay; they are even likely to take over. Humans have the potential to adjust to virtual communication, and teachers/learners need to adjust very quickly.

Insofar as recommendations are concerned, it is suggested that a similar, though not necessarily identical, study be made on students to uncover the harms it is causing for them. Likewise, concerns should be raised about whether distance learning deprives students with disabilities from their educational rights; they are very likely to be excluded from, instead of being included in, the educational continuity and online learning. It is, also, recommended that the same research or one with different variables be replicated with a larger sample size so as not to fall victim to the same trap signalled above.

Last but not least, the time the pandemic is under control and social distancing measures are lifted, particularly the closures, it is recommended to undertake an after-the-event evaluation of the pandemic situation so as to inform future policies, in the event of a possible resurgence.

5. Conclusion

University and school closures are obviously a common-sensical measure of reducing the spread of pandemics. Closures affect not only students and teachers, but have far-reaching effects. Of these, in the educational sector, internet services and digital learning, with a devastating impact on low-income households, come to the fore. In case social distancing measures last longer than expected, decision makers are urgently required to reflect on how students can return to their seats safely. In face of the current scientific uncertainties concerning the COVID-19 pandemic, the only wise outlet seems to be social distancing continuity at the national level and use of online teaching/learning at the educational level. What experience we have now accumulated as regards digital platforms use should be capitalised; it should ease our practice now and in the coming generalisation of the digitised world.

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Appendix

Coronavirus - Questionnaire for Teachers

N.B.1. *Note that you are required to choose one and only one answer to dichotomously asked questions;* ***underline/colour/(or else)*** *where appropriate.*

1. University .....

2. Gender: Male Female

3. Do you have a regular access to the Net? Yes No

4. Are you much of a:

- User of blogs, websites, wikis, file sharing sites, etc.?

- Or a user of Facebook and other social media environments?

5. Do you connect to the Internet more via: Laptop?

Or Smartphone?

6. Do you feel being kept hostage because of the spectre of Coronavirus Pandemic (COVID-19)?

Yes No

7. Are you satisfied with what technology offers for you to stay socially connected?

Yes No

8. Are you satisfied with what technology offers for you to stay professionally connected?

Yes No

Thank you very much for your Cooperation.