

Economic impact of teleworking on teaching activities of professors at the Universidad de Guanajuato, Mexico

Impacto económico por teletrabajo en actividades docentes en los profesores de la Universidad de Guanajuato, México

REYES-MONTUFAR, Claudia Libeth†, ORTIZ-GIL, Miguel Ángel, ARENAS-FLORES, Maribel and GUZMÁN-CABRERA, Rafael

Universidad de Guanajuato, México.

ID 1st Author: *Claudia Lizbeth, Reyes-Montufar* / ORC ID: 0000-0003-1826-703X, Scopus ID Author: 50262737900, CVU CONACYT ID: 272891

ID 1st Co-author: *Miguel Ángel, Ortiz-Gil*

ID 2nd Co-author: *Maribel, Arenas-Flores* / ORC ID: 0000-0002-5953-8126, CVU CONACYT ID: 957134

ID 3rd Co-author: *Rafael, Guzmán-Cabrera* / ORC ID: 0000-0002-9320-7021, Researcher ID Thomson: L-1158-2013, Scopus ID Author: 56002744300, CVU CONACYT ID: 88306

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Abstract

Teleworking, one of the measures adopted to control the COVID-19 pandemic and at the same time maintain employment, has increased in several countries. This research analyzed the expenditure of teachers at the University of Guanajuato for teleworking to develop their academic activities. For this purpose, a survey was developed for the ASPAAUG community, in order to know the economic situation during the COVID-19 health contingency. Of the population analyzed, 50.93% considered that their economic situation was not affected by the sanitary contingency, while 49.07% considered that their economic situation was affected. The development of teaching activities meant that 57.48% did have a work area at home to carry out their work activities, while 42.52% did not have a space at home to carry out their teaching activities. On the other hand, teleworking represented an increase in electricity and internet expenses in teachers' homes. The pandemic is not over yet, and may not be over until we have enough vaccines available for everyone, so it is difficult to conclude which of the changes introduced by the pandemic will be sustained and which will be temporary. What we can foresee is that the need for telework as a containment (or mitigation) strategy will still last. And we can hypothesize that a substantial portion of telework will continue once the pandemic has fully passed.

Leachate, Groundwater, Landfill, Landfill, Risk, Garbage+

Resumen

El teletrabajo, una de las medidas adoptadas para controlar la pandemia de COVID-19 y al mismo tiempo mantener el empleo, se ha incrementado en diversos países. Esta investigación analizó el gasto de los docentes de la Universidad de Guanajuato por realizar teletrabajo para desarrollar sus actividades académicas. Para ello se desarrolló una encuesta para la comunidad de la ASPAAUG, que permitiera conocer la situación económica durante la contingencia sanitaria de COVID-19. El 50.93% de la población analizada consideró que su situación económica no fue afectada por la contingencia sanitaria, mientras que el 49.07% sí consideró afectada su economía. El desarrollo de las actividades docentes conllevó que el 57.48% sí contara con un área de trabajo en su hogar para realizar sus actividades laborales, frente a un 42,52% que no contó con un espacio en su hogar para realizar sus actividades de docencia. Por otra parte, el teletrabajo representó un aumento en los gastos de luz e internet en los hogares de los docentes. La pandemia no ha acabado aún, y posiblemente no lo haga hasta que no tengamos vacunas suficientes disponibles para todos, por lo que es difícil concluir sobre cuáles de los cambios introducidos por la pandemia se mantendrán y cuáles serán pasajeros. Lo que sí podemos prever es que la necesidad de teletrabajo como estrategia de contención (o mitigación) durará aún. Y podemos plantear como hipótesis que una parte sustantiva del teletrabajo continuará una vez haya pasado totalmente la pandemia.

Lixiviados, Manto Freático, Relleno sanitario, Riesgo, Basura

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* Correspondence to Author (Email: ramurray@uan.edu.mx,)

† Researcher contributing first author.

Introduction

The World Health Organisation (WHO) declared an international public health emergency due to the new outbreak of COVID-19. Coronavirus (Breslin et al., 2020). This pandemic is causing a series of transformations in the different spheres of social, political, labour and economic life worldwide. Consequently, international governments in Latin America have implemented emergency public policies based on the suspension of certain activities to mitigate the spread of the virus in their countries, including in the education sector (Aquino-Canchari & Medina-Quispe, 2020).

Emphasis was placed on ensuring learning and extending the school year remotely to mitigate the educational situation. In order to continue teaching-learning activities, academic strategies were designed where teachers from their homes and in an ethical and telematic way, resorting to the use of information and communication technologies, have carried out their classes remotely. In this sense, higher education institutions have opted for telework as a strategy for sustainability (Escobedo, Macías, & Garza, 2020).

In this sense, (Cortés-Pérez, Escobar-Sierra, & Galindo-Monsalve, 2020), express that the etymological interpretation of the word "Telework" is found in the Greek root of the word: The prefix tele - which comes from the Greek word "telos" (at a distance) - indicates that it is performed outside the usual physical centre of work, where the employer is located, thus meaning to break with the traditional schemes of work that were generally developed in different countries.

In this sense, (Escobedo et al., 2020), point out some key aspects for telework to occur in university organisations: (a) The space where it takes place can be anywhere, as long as there are adequate means; (b) The presence of ICT - Information and Communication Technologies - stands out as a direct means of work (for example, application of computer tools) and as a communication system between the teleworker and the organisation; (c) The usual is the non-presence in the physical plant of the organisation; and, (d) A renewed model of work organisation is exhibited, based on ICT, in this model are fundamental axes information processing and communications structure.

Telework, through new information and communication technologies (ICT), has changed the way of working and daily life in the 21st century, but its use for off-site work has not yet become a necessary praxis for all workers (ILO and Eurofound, 2019); However, today, due to the COVID - 19 pandemic that has untimely burst the normality of work, generating a global health crisis, institutions have recently found it imperative to implement telework, in order to continue providing services quickly, decentralised and in remote work environments.

However, it is necessary to recognise the limitations of the Mexican educational system, with the closure of educational spaces it has been necessary to incorporate virtual environments to give continuity to the processes of distance learning and to complement the absence of face-to-face education. These environments are defined "...as resources that complement the management and teaching work, given that they improve the teaching-learning processes and establish the generation of training activities aimed at the acquisition of new knowledge and appropriation of content" (Vargas & Rondero, 2020). Therefore, those who interact in the development of educational processes must adopt these digital tools to give continuity to the curricula implemented by the educational authorities.

Within the Educational Model for Mexico, it is considered important to bring together the contributions and experiences that contribute to the development of the national education system; in this way, the health emergency situation provides a guideline to strengthen infrastructure and equipment to build environments conducive to learning (Pública, 2017).

Armouring the Mexican education system with the necessary elements to face the medium and long-term effects of COVID-19 is fundamental, as well as having options to overcome the crisis. The truth is that, to date, the education system does not have the necessary infrastructure to offer distance education, digitalised materials have not been sufficiently prepared, and the Mexican state has not invested in strengthening the education system (Vargas & Rondero, 2020).

Given this situation, it is a long way from achieving Sustainable Development Goal (SDG) number 4 on quality education, which is part of the 2030 Agenda (Bárcena & Prado, 2017), which aims to ensure inclusive, equitable and quality education, with the intention of promoting lifelong learning opportunities; when ICTs, far from being an alternative to address the problems generated by this pandemic in educational processes, become an obstacle for those who have neither the infrastructure nor the knowledge to move towards a digital education.

Health contingency

In recent times, events have occurred that have had a considerable impact on natural resources and people's health, forcing a rethinking of social dynamics. The fires in the Amazon in August 2019, floods in southeastern Spain in September 2019, the fires in Australia in early 2020 and the disease caused by the new SARS-CoV2 coronavirus (with the first cases reported in Wuhan, China, and given the spread of the disease around the world, it was declared a pandemic by the World Health Organization (WHO) in March of this year (WHO, 2020) show or ratify this. These events are some events to question the role of the human species in the socio-environmental dynamics of the planet.

In the case of COVID-19, it is a global problem, which has not only had an impact on people's health and the latent risk of infection, but has also destabilised the global economy and forms of social interaction (for example, how to develop teaching-learning processes in this situation), among other effects. Vulnerable social groups become even more defenceless, not only because of the risk of contracting the disease, but also because of the repercussions caused by isolation and the difficulties in carrying out economic activities, which drastically affect people's quality of life.

In Mexico, according to Federal Government data, the first infection occurred on 27 February 2020, by 26 April, 14,667 confirmed cases were reported (57.79% men, 42.21% women), 7,612 suspected cases, and of the number of infected, 1,351 deaths were recorded.

By 15 June, the figure had risen to 146,837 infected persons (55.51% men, 44.49% women); in other words, in 50 days the number of infections increased tenfold, and the number of people who died from this pandemic was 17,141, a figure that was increasing, and to avoid further infections, phase 3 of the contingency was continued (Government of Mexico, n.d.). It is a public health problem that has created a challenge for the Federal Government and civil society in terms of prevention, detection, control and/or eradication, since, as mentioned above, it has not only affected people's physical health, but has also had an impact on various aspects of daily life that affect now and will do so in the future, such as the issue of education in Mexico. With the COVID-19 pandemic, new circumstances have arisen in working relationships with multiple repercussions, some of which are here to stay, making activities that were previously aimed only at a segment of the population, such as distance education, suddenly become completely normal and necessary.

Just to mention some of the effects caused by the pandemic, we have to mention that around 5 million jobs were temporarily lost, of which 46% are workers subject to an employment relationship and 53% are self-employed workers (Teruel Belismelis & Pérez Hernández, 2021).

The impact was also measured in households with a population aged 18 years and over that have a fixed telephone service, with the result that in 30% of cases, a member of the household lost his or her job and in 65% of the households surveyed, income decreased (Moctezuma Pérez & Murguía Salas, 2021).

Some authors date the birth of the so-called industrial revolution 4.0 to just over 20 years ago (TEPE & MUCAN ÖZCAN, 2021). This revolution is mainly based on the use of information and communication technologies in many business, education and health sectors, among others, where technological changes related to automation, mechatronics and robotics; the internet, wireless networks, software development, which have been incorporated almost daily in our lives (Basco, Beliz, Coatz, & Garnero, 2018).

Job losses in Mexico

In Mexico millions of working staff stayed at home in teleworking or had to face the crisis derived from the pandemic, such as salary decreases or layoffs since the end of March 2020 as a consequence of the COVID-19 epidemic (Feix, 2020).

"At the height of the pandemic in the region", in June 2020, there was a "14% drop in total employment". In Mexico, according to the National Institute of Statistics and Geography (INEGI), more than 12 million people stopped earning income from their work (Rodríguez & Torres). However, many of those who kept their jobs did so at the cost of reduced working hours and wages. Mexico had a 6% decrease in working time and a 7% decrease in wages (Feix, 2020).

From one moment to the next, COVID-19 is a major concern for various sectors worldwide, sectors such as the economic and health sectors, but they were not the only ones, the education sector was also affected; while in first world countries there was a rapid adaptation, migrating their educational activities to virtual classrooms; in Mexico, the first strategy considered was to send staff on holiday, due to the lack of digital infrastructure or the lack of training for teachers to continue their activities virtually (Iturria, 2020).

Teachers had to reorganise their strategies so that students could join via internet or whatsapp, "they had to respond to a series of emerging demands of various kinds", notes the Economic Commission for Latin America and the Caribbean (ECLAC). This crisis generally took them with insufficient training and availability of resources, but teachers had to face this situation in order to keep their jobs (Lion, 2020).

Advantages and disadvantages of teleworking in teaching

Working from home is very convenient for some teachers, but for others it is a big problem. The pandemic has undoubtedly led to the introduction of virtual working or teleworking, due to the social distancing decreed by the government with the aim of reducing the number of cases of the coronavirus.

This means that working remotely is part of the normality imposed by the confinement, which has meant that the spaces intended for rest at home are now improvised offices (Cifuentes-Leiton & Londoño-Cardozo, 2020).

The change in daily dynamics due to the presence of the SARS-CoV2 coronavirus generated an unexpected restructuring in various political-economic sectors in society at a global level. Given the circumstances of the COVID-19 pandemic, it is important to consider that social distancing from the analysis of educational activities affects: 1) the emotional health of individuals, derived from the actions of shelter and isolation in their homes as a preventive measure to avoid contagion. Changing the paradigm of interpersonal relationships, the negative socio-economic impact with greater repercussions on vulnerable groups (indigenous peoples, agricultural labourers, rural women, migrants, older adults, young people, among others) and the conceptualisation of humanity-environment; 2) in the field of education, it has set a precedent in student-teacher interaction and vice versa, changing the paradigm of the way knowledge is acquired, the role that the teaching professional must assume to transmit the contents in the learning process, the concrete actions that the Mexican government must implement to comply with the Third Constitutional Article; and of course, the need to make use of ICTs as the main tool in the development of educational processes. According to the Autonomous University of Mexico [UNAM] (2020), Information and Communication Technologies (ICTs) are all those resources, tools and programmes that are used to process, manage and share information through various technological supports, such as: computers, mobile phones, televisions, portable audio and video players or game consoles.

During the pandemic caused by the coronavirus, the context demands and teleworking becomes a fundamental modality for the continuity of institutional activities, in the different sectors during the state of health emergency, this way of working improved from 4% to 88% in the institutions or non-essential sectors and that do not require in an indispensable way the face-to-face mode.

In this year, telework in the entities, is accentuated with more intensity and is one of the modalities of work necessary and priority to prevent contagions, as well as, an alternative and opportunity for the deconcentration of the work and the development of competences with the commitment to become digital institutions; since, telework significantly increased the use of Internet, digital media, virtual work and the use of technological platforms, in 324%, the Zoom service or Google Meets in 75%, as indicated (Roncal, 2021). Telles and Spanier (2018), indicated as an advantage the flexibility of working hours and as a disadvantage the lack of integration and physical presence with the entity. Therefore, Ulate (2020), proposed that entities that implement teleworking should have regulations on ethics and quality, allowing them to adequately control people in this modality. In this line, Estévez and Solano (2021), considered telework as positive, due to the improvement of institutional efficiency, reduction of time, reduction of mobility expenses, environmental protection and free hours; as negative, isolation at work, damage in the career and training line, long working hours, physical and psychological risks due to stress and digital disconnection, the impact of the coronavirus, the aggressive change in the development of education due to the closure of educational facilities as measures to prevent contagion, the importance of Information and Communication Technology (ICT) and its relationship with the educational model to address the school backwardness.

Reform to telework in Mexico.

It is clear that these technological changes require changes in the labour regulations that govern us in Mexico. They must now cover aspects that involve the use of these technologies in labour activities and the necessary regulation of these, always seeking to preserve and preserve both labour and human rights. The regulation of these activities has led to labour reforms in Mexico, for example the reform of 2012, in which some of these aspects were considered, albeit incipiently (Bensusán Areous, 2013). It was not until 11 January 2021 that the amendment to Article 311 and the addition of Chapter XII bis of the Federal Labour Law on teleworking was published in the Official Journal of the Federation.

This modification in the law seeks to clarify, largely motivated by the need to carry out remote work due to the pandemic due to COVID-19, the brevity of the wording of the previous law in relation to telework from the current context. The pandemic has become a watershed in labour relations, as the industrial revolution and mass production models were in their time, as the whole world has had to adapt to the new normal and as far as possible the population has moved into telework.

The International Labour Organisation produced a practical guide entitled: Teleworking during the COVID-19 pandemic (Santillan, 2020), as a result of the confinement directives issued by governments.

Implementation of telework at the Universidad de Guanajuato.

The Universidad de Guanajuato has the Institutional Catalogue of Distance Learning Courses (CICUS), which contains a total of 812 educational experiences distributed as follows: 442 courses, 364 learning units and 6 diploma educational programmes. This represents an increase of 25%, 164 new educational experiences, with respect to 2020. Reaching more than 51 thousand users, which represents an increase of more than 5 thousand per cent, going from the order of one thousand users to nearly 52 thousand. In this context, it has been possible to consolidate two institutional platforms in record time: the UG Digital Campus (<https://campusdigital.ugto.mx>) and the UG University Node (<https://nodo.ugto.mx/>), both of which have seen a significant increase in users during the contingency. Specifically, during the August-December 2020 semester, there was an increase of 174.4 percent, from 20,194 to 55,406 users, with respect to the same period of the previous year. While in the period January-June 2021, an increase of 11.6 percent was reported, registering 61,825 users.

Methodology

This research analysed the expenditure of teachers at the University of Guanajuato for teleworking to develop their academic activities. To this end, a survey was developed for the community of the Academic and Administrative Staff Union Association of the Universidad de Guanajuato (ASPAAUG), to ascertain the economic situation during the COVID-19 health contingency. The population was stratified by academics affiliated to ASPAAUG, of which there are N: 2300 affiliates. A simple random sampling formula was applied in order to identify how many people should be surveyed (n: 214 people). The data collection was carried out with a digitally prepared questionnaire sent by e-mail. The data collection period was from January to March 2021, to analyse information on expenditure during 2020. The digital survey was anonymous, sent by email to the 2300 academics who are members of ASPAAUG. Each participant was sent a digital informed consent form to participate in the research. The objective of the study and the guarantee of confidentiality were explained. This instrument was developed on the LimeSurvey platform where workers responded to each item using a Likert scale response format. The information collected was captured in a database and Minitab software was used for statistical processing.

Results

The participants who completed the survey had an average of 26.43 definite hours, with a standard deviation of 13.65 definite hours. In terms of work characteristics during telework, participants reported the following as shown in Table 1 below

	I have benefited from working at home	I feel at ease to carry out my academic work.	I have adapted to the change in work activities	I have the appropriate training for online work.
I fully agree	18.22%	23.36%	22.43%	18.22%
Agree	38.32%	41.59%	57.48%	52.34%
Don't know	13.55%	9.35%	6.07%	11.68%
Disagree	21.50%	22.90%	11.68%	15.42%
Strongly disagree	8.41%	2.80%	2.34%	2.34%

Table 1 Teacher's appreciation of teleworking during the COVID-19 contingency

50.93% of the population analysed considered that their economic situation was not affected by the health contingency, while 49.07% considered that their economic situation was affected. With regard to the use of technology during the confinement, 70.56% considered that it had not, while 29.44% considered that it had worsened their working practices.

The development of teaching activities meant that 57.48% did have a work area at home to carry out their work activities, compared to 42.52% who did not have a space at home to carry out their teaching activities. However, 63.08% of the area where teleworking took place stated that it was not equipped with the inputs to carry out its substantive functions, compared to 36.92% who considered that it was well equipped to carry out teleworking. This led the academics to make extra expenses to adapt their work spaces in terms of infrastructure, furniture and supplies, as shown in Table 2.

Spending range for home workspace adequacy	Percentage
Less than \$4000	15.89%
From \$4001 to \$8000	24.77%
From \$8001 to \$12000	14.95%
From \$12001 to \$16000	12.62%
More than \$16000	16.36%
I did not account for your spending	15.42%

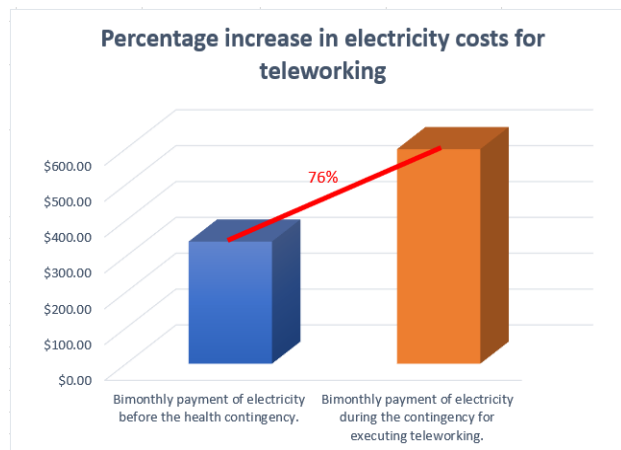
Table 2 Expenditure made by teaching staff to adapt their workspaces at home

On the other hand, teleworking represented an increase in electricity and internet expenses in teachers' homes, as shown in Table 3.

Household	Household size (number of people)	Monthly electricity expenditure (in USD)		Monthly internet expenditure (in USD)		Monthly water expense before the health contingency (in USD)		Monthly water expense during the health contingency (in USD)	
		Value in USD	Value in USD per person	Value in USD	Value in USD per person	Value in USD	Value in USD per person	Value in USD	Value in USD per person
1	1	127.11	127.11	349.12	349.12	107.41	107.41	129.41	129.41
2	2	141.01	70.50	325.00	162.50	107.00	53.50	107.00	53.50
3	3	127.00	42.33	325.00	108.33	127.00	42.33	127.00	42.33
4	4	127.00	31.75	325.00	81.25	127.00	31.75	127.00	31.75
5	5	127.00	25.40	325.00	65.00	127.00	25.40	127.00	25.40
6	6	127.00	21.17	325.00	54.17	127.00	21.17	127.00	21.17
7	7	127.00	18.14	325.00	46.43	127.00	18.14	127.00	18.14
8	8	127.00	15.88	325.00	40.63	127.00	15.88	127.00	15.88

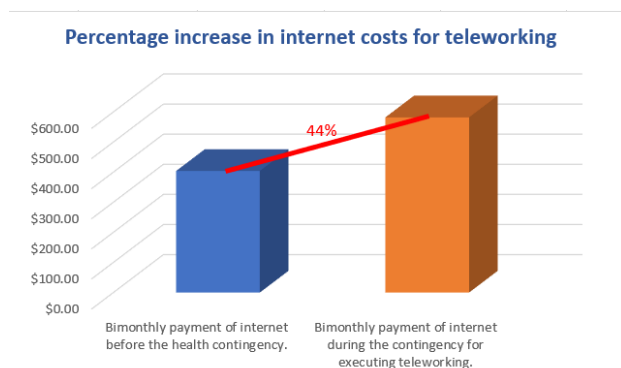
Table 3 Expenditure on electricity and internet by teachers during the health contingency

There is a percentage increase of 76% in electricity costs, compared to when teleworking was not carried out, as shown in graph 1.



Graphic 1 Increase in electricity costs for teleworking while teaching

Finally, the use of internet plans to teach classes from the academics' homes resulted in an economic increase of 44% on average, as shown in graphic 2.



Graphic 2 Increased internet expenditure for teleworking while teaching classes

Conclusions

In conclusion, the current federal labor law already includes payment by the employer for telecommuting, specifically related to the cost of electricity and internet usage. However, the legislation does not specify the amount or method for calculating these expenses, resulting in some private companies making payments on their own while others do not. In the case of the University of Guanajuato, a one-time extraordinary payment was made for telecommuting in 2021. Based on the research conducted in this study, it has been observed that these expenses can increase by up to 76% for electricity and up to 44% for internet. Therefore, it is important to establish clear criteria in the federal labor law for the calculation and payment of these expenses, in order to provide greater clarity to both public and private companies on how to calculate and apply these expenses in the payroll of their employees.

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References

- Aquino-Canchari, C. R., & Medina-Quispe, C. I. (2020). COVID-19 y la educación en estudiantes de medicina. *Revista cubana de investigaciones biomédicas*, 39(2), 1-4.
- Bárcena, A., & Prado, A. (2017). *Agenda 2030 y los objetivos de desarrollo sostenible*: D-CEPAL.
- Basco, A. I., Beliz, G., Coatz, D., & Garnero, P. (2018). *Industria 4.0: fabricando el futuro* (Vol. 647): Inter-American Development Bank.
- Bensusán Areous, G. (2013). Reforma laboral, desarrollo incluyente e igualdad en México.
- Cifuentes-Leiton, D. M., & Londoño-Cardozo, J. (2020). Teletrabajo: el problema de la institucionalización. *Aibi revista de investigación, administración e ingeniería*, 8(1), 12-20.
- Cortés-Pérez, H. D., Escobar-Sierra, M., & Galindo-Monsalve, R. (2020). Influence of lifestyle and cultural traits on the willingness to telework: A case study in the Aburrá Valley, Medellín, Colombia. *Global Business Review*, 0972150920916072.
- Escobedo, J. M. C., Macías, J. G. M., & Garza, R. D. (2020). Educación a Distancia y Teletrabajo Distance Education and Teleworking. *Daena: International Journal of Good Conscience*, 15(1), 264-277.
- Feix, N. (2020). México y la crisis de covid-19 en el mundo del trabajo: respuestas y desafíos. *Panorama Laboral de tiempos de la COVID-19*.

Iturria, J. (2020). La educación en tiempos de pandemia; Un problema para México. *Voces UNIVA.. Obtenido de Universidad Católica. UNIVA: <https://www.univa.mx/blog/la-educacion-en-tiempos-de-pandemia-un-problema-para-mexico>.*

Lion, C. (2020). Enseñar y aprender en tiempos de pandemia: presente y horizontes. *Saberes y prácticas. Revista de Filosofía y Educación*, 5(1), 1-8.

Moctezuma Pérez, S., & Murguía Salas, V. (2021). Una aproximación hacia el contexto del mercado laboral de la población joven en contextos de pandemia (Covid-19). *Intersticios sociales*(21), 399-424.

Pública, S. d. E. (2017). Modelo educativo para la educación obligatoria: Autor México.

Rodríguez, H. C., & Torres, M. V. Los efectos del COVID-19 en el mercado de trabajo de México. *Temas Emergentes del COVID-19*, 81.

Santillan, W. (2020). El teletrabajo en el COVID-19. *CienciAmérica: Revista de divulgación científica de la Universidad Tecnológica Indoamérica*, 9(2), 65-76.

TEPE, G., & MUCAN ÖZCAN, B. (2021). REVIEW AND BIBLIOMETRIC ANALYSIS OF INDUSTRY 4.0 IN SOCIAL SCIENCES. *Dumlupınar University Journal of Social Science/Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*(67).

Teruel Belismelis, G., & Pérez Hernández, V. H. (2021). Estudiando el bienestar durante la pandemia de Covid-19: la Encovid-19. *Revista mexicana de sociología*, 83(SPE), 125-167.

Vargas, L. R. I. A., & Rondero, E. O. O. (2020). Análisis documental: importancia de los entornos virtuales en los procesos educativos en el nivel superior. *Revista Tecnología, Ciencia y Educación*(17), 57-77.

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