



Workload in a group of Latin American teachers during the COVID-19 pandemic

Carga laboral en un grupo latinoamericano de docentes durante la pandemia de COVID-19

Carga de trabalho em um grupo latino-americano de docentes durante a pandemia da COVID-19

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Received: Nov/18/2020 • Accepted: Mar/11/2021 • Published: Jul/31/2021

Abstract


Introduction. The viral disease Covid-19 -currently a pandemic- forced to accommodate measures of social distancing with the intention of limiting its expansion, including: teleworking and online (virtual) teaching. Would the sudden shift from face-to-face classroom to virtual education result in teacher work overload? If so, what are the influencing factors? **Objective.** Analyze the workload of teachers in Latin America, at three different educational levels, during the COVID-19 pandemic in June and July 2020. **Methods.** Quantitative, descriptive, cross-sectional study. A 37-question questionnaire was used, with a Hernández-Nieto content validity coefficient of 0.99 and a temporal stability coefficient 0.91. Statistical analysis was performed using Excel 2019, measures of central tendency and frequency analysis were used. **Results.** 887 teachers were surveyed for whom sociodemographic characteristics are detailed and their personal, technical, institutional and space load factors assessed. Student dropout percentage was also ascertained. **Conclusion.** The surveyed teachers perceived an increase in workload due to the factors studied, intertwined with an increase in student desertion. The abrupt change in the modality from face-to-face to virtual education has generated a reorganization of work and family life, teleworking from home requires a clear delimitation by teachers of the work schedules and functions involved in the various aspects of online education.

Keywords: Workload; teachers; Latin America; pandemic; occupational health; COVID-19; SARS-CoV-2

Resumen

Introducción. La enfermedad viral Covid-19 –actualmente pandemia–, obligó a tomar medidas de distanciamiento social con la intención de limitar su expansión, entre ellas: el teletrabajo y la enseñanza en línea. ¿El cambio repentino de la educación presencial a la virtual resultaría en sobrecarga laboral docente? Si es así, ¿cuáles son los factores influyentes? **Objetivo.** Analizar la carga laboral en docentes de

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Latinoamérica, según el nivel educativo impartido durante la pandemia de COVID-19 en junio y julio del 2020. **Métodos.** Estudio cuantitativo, descriptivo, transversal. Se empleó un cuestionario de 37 preguntas, con un coeficiente de validez de contenido de Hernández-Nieto de 0.99 y coeficiente de estabilidad temporal 0.91. El análisis estadístico se realizó mediante Excel 2019, se emplearon medidas de tendencia central y análisis de frecuencia. **Resultados.** Se encuestaron 887 docentes, de quienes se detallan las características sociodemográficas, factores de carga personales, técnicos, institucionales y de espacio junto al porcentaje de deserción estudiantil. **Conclusión.** El grupo docente percibe un aumento de carga laboral debido a los factores estudiados, anudados a un aumento de la deserción estudiantil. Este cambio abrupto en la modalidad de presencial a virtual ha generado una reorganización de la vida laboral y familiar, al realizar el trabajo desde casa, exige una delimitación clara por parte del personal docente, de los horarios y funciones a realizar en cada aspecto.

Palabras clave: Carga de trabajo; docentes; América Latina; pandemia; salud laboral; COVID-19; SARS-CoV-2

Resumo

Introdução. A doença viral Covid-19, atualmente pandemia, obrigou a todos a tomar medidas de distanciamento social com a intenção de limitar sua expansão, entre tais medidas estão: o trabalho remoto e o ensino on-line. A mudança repentina da educação presencial à virtual resultaria em sobrecarga laboral docente? Caso sim, quais são os fatores influenciadores? **Objetivo.** Analisar a carga de trabalho em docentes da América Latina, segundo o nível educativo ministrado durante a pandemia da COVID-19 em junho e julho de 2020. **Métodos.** Estudo quantitativo, descritivo, transversal. Foi utilizada uma enquete de 37 perguntas, com um coeficiente de validade de conteúdo de Hernández-Nieto de 0,99 e coeficiente de estabilidade temporal de 0,91. A análise estatística foi realizada mediante o programa Microsoft Excel 2019, foram utilizadas medidas de tendência central e análise de frequência. **Resultados.** Participaram da enquete 887 docentes, dos quais se averiguam características sociodemográficas, fatores de carga pessoais, técnicos, institucionais e de espaço conjuntamente à porcentagem de deserção estudiantil. **Conclusão.** O grupo docente identifica um aumento da carga de trabalho devido aos fatores estudados, vinculado a um aumento da deserção estudiantil. Essa mudança abrupta na modalidade presencial à virtual provocou uma reorganização da vida laboral e familiar, pois, ao realizar o trabalho em casa, exige uma delimitação clara, por parte do pessoal docente, de horários e funções a serem realizados em cada aspecto.

Palavras-chave: Carga de trabalho; docentes; América Latina; pandemia; saúde laboral; COVID-19; SARS-CoV-2

Introduction

In December 2019, a viral disease transmitted by SARS-CoV-2 emerged in China. This disease quickly spread and became a pandemic, causing damage in a large number of countries. Due to this, in order

to limit its spread, the world has maintained strict rules and measures of social distancing (Sánchez *et al.*, 2020).

The impact also falls on all levels of the educational system, since schools, high schools and universities had to suspend classes with the intention of complying



with government regulations. Without having knowledge about when the confinement would end and with the purpose of guaranteeing education, it was considered that online (virtual mode) teaching was an excellent alternative, for which use was made of the variety of existing virtual platforms (Cáceres-Piñaloza, 2020; Mailizar, Almanthari, Maulina, & Bruce, 2020). Teleworking, defined as the use of technologies used by workers to carry out their work without mobilizing, has been implemented for several years, since it provides the advantage of offering an alternative work modality in the occurrence of unexpected events (strikes, natural disasters, epidemics); despite this, the recent globalization of teleworking requires a correct preparation and adaptation process (a minimum set of technological and organizational requirements) so that telework can be carried out successfully, since an organization with inadequate technology would lead teleworkers to experiment an interrupted work process and, consequently, inefficiencies (Tapasco & Giraldo, 2016). Finally, it is under this scenario where teleworking and online (virtual) teaching have taken center stage, in an attempt to keep education afloat and avoid the conglomeration of people, as a preventive measure, in the face of the pandemic (Sánchez *et al.*, 2020).

When speaking of a successful teaching-learning process, it is ideal that both parties, both those who teach and those who learn, enjoy physical, mental and emotional health, to achieve an adequate and healthy interaction and relationship. Therefore, it is necessary to focus on the teaching staff, to prevent them from facing an excessive workload and, in addition, to provide them with the means to develop skills, abilities, and resources necessary to provide, in the most efficient way, the content to

their students (Malandar, 2016; Ordoñez & Saltos, 2018). Online education is not just about sending and downloading files through a virtual platform; rather, it is about the search for didactic strategies that facilitate the understanding of the content for students (Cáceres-Piñaloza, 2020). Thus, at present, teacher training is necessary for the effective use of virtual tools and platforms. In this way, learning the use in form and variety, teachers can determine which of all tools and platforms fit best for them in their work to obtain high performance and learning, in order to achieve a better adaptation relative to face-to-face (traditional, presential) education (Mandernach & Holbeck, 2016; Tapasco & Giraldo, 2016).

The COVID-19 pandemic, by spreading so rapidly, caused online teaching to now abruptly replace face-to-face teaching. This caused that the majority of teachers who lectured classes in person were forced to educate through virtual tools, to a great extent, without having received training and without having the experience, adequate space, and necessary resources. In addition, in an attempt by teachers to learn to use these platforms quickly, perhaps without institutional-administrative support, technical support and enough time, it has generated in them work overload (Mandernach, & Holbeck, 2016; Ordoñez & Saltos, 2018; Sánchez *et al.*, 2020). It must be taken into account that online education per se implies a greater workload, since it requires that each teacher invest at least 14% more time than that dedicated to face-to-face teaching; therefore, the greatest challenge they must face, according to their own confession, is the lack of time to prepare the lessons, since they exceed the planned working hours (Mailizar *et al.*, 2020; Mandernach & Holbeck, 2016; Sánchez *et al.*, 2020). The work



overload implies less time for planning activities, a decrease in the rest time of the teaching staff and an increase in stress that can lead to teacher negative physical and mental health conditions, and also in the reduction of the quality of education provided to the students (Malander, 2016; Ordoñez & Saltos, 2018).

There are few studies investigating on-line learning; in Latin America, the disease spread late relative to European continent, and no studies have yet been published that collect data on work overload in teaching staff in this region. The lack of scientific research can hide the repercussions, both on the health of teachers and their quality of teaching. For this reason, in the present study we sought to find the consequences of a sudden change in teaching methodology, analyze the impact that this event has had on the workload of Latin America teachers according to educational level, and to establish the various factors (institutional, technical, work space and student difficulties) involved in this process and how they interact with each other to lead to work overload.

Materials and methods

Non-experimental, quantitative, descriptive, cross-sectional study, data was gathered in a single application. The study population were teachers from the three educational levels in Latin America and the sampling was carried out in a non-probabilistic way for convenience (the questionnaire was shared through social media outlets Facebook, Instagram, Twitter, WhatsApp and emails to groups of teaching staff of each country). The data collection was carried out in a single shot, through a questionnaire of 37 questions in total (36 closed questions and 1 open question), which, prior

to its application, was subjected to content validity through the review of three experts by implementing Hernández-Nieto's 0.99 content validity coefficient and subsequent reliability through the 0.91 temporal stability coefficient obtained by means of *test and retest* applied to 50 individuals. Statistical analysis was performed using Microsoft® Excel 2019, measures of central tendency and frequency analysis were used. The recommendations of the Declaration of Helsinki were considered; the research objective, procedure and confidentiality of the data were explained by electronic means, and thus the consent of voluntary participation in the study was obtained (there was no follow-up, either by telephone nor electronically); subsequently, the surveyed subject had to complete the questionnaire in its entirety to be sent (mandatory responses using Google forms); upon being sent, the receipt was acknowledged through the same platform. As inclusion criteria, the following were established: 1) Latin American teachers of legal age from any Latin American institution (public, private or mixed) belonging to the three educational levels (there was no direct contact with the various institutions, since the invitation to participate was open), 2) change of modality from face-to-face (traditional) to online (virtual), 3) willingness to participate and command of the Spanish language, 4) internet access to fill out the questionnaire. Exclusion criteria: 1) unwillingness to participate in the study, 2) Brazilian teachers, 3) under 18 years of age.

Results

A total of 891 responses were obtained, of which 99.5% of the total pool of solicited individuals agreed to participate in the study with prior informed consent, while 0.5%



decided not to participate, achieving a final total of 887 surveys filled out by teachers of different educational levels, from different Latin American countries, including: Mexico, Guatemala, Honduras, Costa Rica, Colombia, Ecuador, Argentina and Chile. (Table 1). 71% (633) of the teachers surveyed are female and 81% (719) are between the ages of 31-60 years. 55% (488) possess a licentiate's academic degree. 56% (495) work in the public sector, 29% (253) in the private sector and 16% (139) work in both sectors. 36% (315) are teachers of primary education (school), 42% (394) of secondary education (high school) and 22% (198) of university education (including postgraduate).

Table I. General data

Variable	n	%
1. Country of work		
Mexico	94	11
Guatemala	36	4
Honduras	150	17
Costa Rica	19	2
Colombia	203	23
Ecuador	42	5
Argentina	142	16
Chile	201	23
2. Age		
18-30 years	141	16
31-45 years	462	52
46-60 years	257	29
Over 60 years old	27	3
3. Gender		
Female	633	71
Male	253	29
Other	1	0
4. Marital status		
Married	390	44
Single	289	33
Free Union	123	14
Divorced	78	9

Variable	n	%
5. Do you have children or dependents in your home?		
Children	410	46
Dependents	123	14
Both	129	15
None	225	25
6. Academic degree		
Secondary	20	2
Licentiate/professional	488	55
Specialist	144	16
Master	212	24
Doctorate	23	3
7. Type of educational center where you work		
Public	495	56
Private	253	29
Public/private (mixed)	139	16
8. Level of education in which you work		
Primary education (school)	315	36
Secondary education (high school)	394	42
University education	198	22
9. Type of employment according to contractual time		
Hourly contract	142	16
Permanent part-time contract	124	14
Permanent full-time contract	349	39
Undefined	272	31

The results were analyzed according to educational level (primary (school), secondary (high school) or university) to determine the consequences of work overload caused by the sudden change in educational modality, from face-to-face to virtual in each of these areas. Of these variables, 13 were measured according to the Likert scale (Table 2). It was determined that 58% (182), 63% (236), 53% (104) of primary, secondary and university teachers, respectively, indicated that the change resulted in increased work intensity. Likewise, 67% (212) of primary school teachers, 65%



(243) of secondary and 48% (95) of university education, consider that this change of modality has had between very often to frequently, a negative impact on their family dynamics. 72% (225), 73% (275) and 59% (118) of primary, secondary and university educators, respectively, affirm that among the influencing factors, between very often and frequently, are work interruptions while dedicating time to their personal activities. In addition, 92% (289), 94% (354) and 85% (169) of teachers of primary, secondary and university education, respectively, had to very often or frequently adapt the academic content to virtual modality. Of these, only 7% (21 in primary and 27 in secondary) of primary and secondary education teachers,

and 10% (20) of university professors have received training very often, of which 62% (195), 64 % (237) and 72% (143), respectively, rate these trainings as fair to good. Only 8% (26) of teachers of primary education, 7% (26) of secondary education and 15% (30) of university education receive from their corresponding educational institutions the tools and platforms necessary for online teaching, considering also that only 6 % (19 from primary and 23 from secondary) of primary and secondary education teachers and 12% (23) of university education receive technical support assistance from their educational institution when problems arise with any of these tools.

Table II. *Work overload variables according to the Likert scale.*

	Educational level	Very often		Frequently		Occasionally		Rarely		Almost never	
		n	%	N	%	n	%	n	%	n	%
11. The change from face-to-face teaching (traditional) to online (virtual) mode has intensified my workload.	Primary	182	58	101	32	20	6	7	2	5	2
	Secondary	236	63	108	29	21	6	4	1	5	1
	University	104	53	54	27	28	14	10	5	2	1
12. The change from face-to-face teaching (traditional) to online (virtual) mode has had a negative impact on my family dynamics.	Primary	102	32	110	35	63	20	28	9	12	4
	Secondary	111	30	132	35	77	21	39	10	15	4
	University	35	18	59	30	51	26	34	17	19	10
13. I accept personal interruptions (calls from friends, social media, housework, etc.) when I am dedicating myself to online-teaching work activities.	Primary	53	17	55	17	83	26	71	23	53	17
	Secondary	60	16	73	20	97	26	91	24	53	14
	University	19	10	27	14	47	24	65	33	40	20
14. I accept work interruptions (work related emails, calls or communications) when I am dedicating myself to personal activities, including leisure.	Primary	135	43	90	29	42	13	28	9	20	6
	Secondary	158	42	117	31	51	14	32	9	16	4
	University	64	32	54	27	37	19	23	12	20	10
21. I have had to develop the adaptation of traditional classroom content to an online modality due to the new conditions.	Primary	166	53	123	39	20	6	4	1	2	1
	Secondary	200	53	154	41	16	4	3	1	1	0
	University	78	39	91	46	22	11	6	3	1	1



	Educational level	Very often		Frequently		Occasionally		Rarely		Almost never	
		n	%	N	%	n	%	n	%	n	%
<i>24. I have received training on the use of online tools and platforms utilized by the educational institution where I work.</i>	Primary	21	7	45	14	84	27	66	21	99	31
	Secondary	27	7	41	11	105	28	76	20	125	33
	University	20	10	63	32	57	29	35	18	23	12
<i>28. I have had connectivity problems due to the tools and platforms used in my work activities.</i>	Primary	78	25	93	30	94	30	35	11	15	5
	Secondary	76	20	93	25	134	36	62	17	9	2
	University	18	9	43	22	80	40	34	17	23	12
<i>29. The educational institution where I work offers me the tools and platforms required for my work activities.</i>	Primary	26	8	50	16	57	18	53	17	129	41
	Secondary	26	7	59	16	67	18	65	17	157	42
	University	30	15	67	34	44	22	22	11	35	18
<i>31. The educational institution where I work offers the assistance of technical staff in case of doubts or problems regarding the tools and online platforms.</i>	Primary	19	6	34	11	48	15	45	14	169	54
	Secondary	23	6	46	12	56	15	53	14	196	52
	University	23	12	45	23	55	28	34	17	41	21
<i>32. I have felt guilty about the academic results obtained by students as a consequence of the change in teaching modality.</i>	Primary	48	15	98	31	83	26	53	17	33	10
	Secondary	53	14	92	25	108	29	76	20	45	12
	University	14	7	30	15	52	26	60	30	42	21
<i>19. I consider my experience in online teaching modality before the current pandemic as.</i>				High	Medium-high	Medium	Medium low			Low	
				n	%	n	%	n	%	n	%
	Primary	21	7	63	20	101	32	57	18	73	23
Secondary	25	7	80	21	122	33	55	15	92	25	
University	32	16	69	35	53	27	26	13	18	9	
<i>20. I have enough teaching and learning resources (material or content) to perform the change from face-to-face (traditional) to online mode.</i>				Sufficient	Somewhat sufficient	Neither sufficient nor insufficient	Somewhat insufficient			Insufficient	
				n	%	n	%	n	%	n	%
	Primary	32	10	77	24	80	25	68	22	58	18
Secondary	39	10	99	26	83	22	82	22	71	19	
University	41	21	72	36	44	22	28	14	13	7	
<i>25. I would rate the training received for online education as.</i>				Very good	Good	Regular	Bad			Very bad	
				n	%	n	%	n	%	n	%
	Primary	33	10	97	31	98	31	36	11	51	16
Secondary	34	9	107	29	130	35	41	11	62	17	
University	32	16	77	39	66	33	13	7	10	5	



Virtual education by itself implies greater dedication of time by the educator, especially if there is no high level of experience in teaching it. This is why 4 of the work overload variables were measured according to the educator's schedule (Table 3). It was determined that 43% (135), 49% (184) and 56% (111) primary, secondary and university education teachers, respectively, invested more than 8 hours a day to develop the necessary adaptations required for online teaching.

Other important factors that were established as influencing the teaching workload is the number of students assigned, 49% (154) of primary education teachers have around 21-40 students, while 66% (247) and 56% (110) of secondary and university education teachers, respectively, have more than 60 students assigned per class section. Of these, 62% (194), 65% (242) and 67% (153) of primary, secondary and university education teachers, respectively, are provided with a specific workplace to develop their academic activities. It should be taken into account that

for 87% (275 in primary, 325 in secondary and 173 in university education) of teachers of all educational levels, their academic institutions do not provide internet service, data plans or data connection to carry out their activities. Among the difficulties to transition teaching activities to virtual modality encountered by teaching staff at all 3 educational levels, the following statistics stand out: 1. Logistics: class schedules, time management, physical spaces to work remotely, institutional communication, etc. with 32% (601). 2. Technological: internet access, provision of computer equipment, knowledge of educational virtual platforms, etc. with 27% (511). 3. Pedagogical: knowledge of distance education didactic tools, online group management, student evaluation, etc., with 21% (384).

Among the resources used by the study participants at all 3 educational levels, the following emerge: 1. Communication: Facebook, Twitter, WhatsApp and email, with 32% (723). 2. Academic work: Moodle, Google Suite, Google Classroom, Teams, among others, with

Table III. *Work overload variables according to schedule.*

	Education level	Less than 3h		3-5h		6-8h		Over 8h		Don't know/not sure	
		n	%	n	%	n	%	n	%	n	%
22. Time invested in the development of content adapted to online mode.	Primary	14	4	68	22	78	25	135	43	20	6
	Secondary	19	5	66	18	74	20	184	49	31	8
	University	8	4	39	20	35	18	111	56	5	3
23. Time invested in the development of virtual content, as already accounted as part of my work hours.	Primary	100	32	89	28	46	15	43	14	37	12
	Secondary	139	37	85	23	52	14	47	13	51	14
	University	70	35	53	27	25	13	24	12	26	13
26. Time invested in online teaching training.	Primary	110	35	82	26	30	10	39	12	54	17
	Secondary	111	30	103	28	45	12	66	18	49	13
	University	67	34	64	32	25	13	30	15	12	6
27. Time invested in training on the use of virtual tools and platforms, as already accounted as part of my work hours.	Primary	143	45	45	14	13	4	22	7	92	29
	Secondary	197	53	51	14	14	4	15	4	97	26
	University	107	54	33	17	11	6	10	5	37	19



24% (544). 3. Synchronous work: Skype, Google Hangouts, Zoom, among others, with 23% (535).

Speaking specifically of the student body, at all 3 educational levels there was an approximate student dropout of 1-20%. Among the main difficulties faced by the student body, as detected and mentioned by teachers, are the following aspects: 1. Technical: access to the Internet and provision of computer equipment, with 35% (762). 2. Lack of knowledge about the use of virtual tools and platforms, with 22% (478). 3. Lack of interest with 19% (446).

The teachers surveyed made personal comments about their experience in this change in educational modality. Among the main problems mentioned are those of connectivity that prevent a fluid and participatory class, or even lack of connectivity for those students who live in rural areas. In addition, there is greater vulnerability in both the teaching and student bodies, due to the situations generated by the pandemic that, by itself, brings stress, especially in those who have fallen ill, have had infected relatives or losses. Most teachers claim to experience overload, with non-established work hours, which extend for a large number of daily hours, resolution of questions posted by students or parents outside of their working hours, plus the added responsibilities of home life that they must also perform. Teachers do not have sufficient training, resources, technical or financial support from the authorities of the educational institutions where they work. In addition to all these difficulties and the extra effort they make to try to provide quality classes, they perceive a lack of interest on the part of the students to participate, engage and, correctly and appropriately, carry out assignments, all of which makes an effective and efficient education even more difficult.

Discussion

Due to the pandemic, the online learning experience is now seen from another perspective, not only because it is a necessary and mandatory experience, with all the difficulties that this study exposes and that are related to the perception of quality of teaching between face-to-face and online education. The results are variable according to the geographical area evaluated; according to a study from the University of Minnesota 2015, on the use of virtual simulators in surgery residents (third year), it was possible to demonstrate a decrease in the «burnout» syndrome by students; however, a significant increase in the workload of teachers was observed. Thus, it is important to take into account the age online education recipients. In a study carried out with primary school students in Malaysia, students failed to achieve sufficient skills in mathematics under the online modality in comparison to the face-to-face mode, in addition to the greater difficulty perceived by the educators to transmit their knowledge (Cáceres-Piñaloza, 2020; Mailizar *et al.*, 2020). In the present study, 19% of teachers consider that their students have little interest for online modality and 22% regard their students as deficient in managing virtual platforms and 35% to possess technological difficulties such as lack of computer and/or connectivity (Acton, Chipman, Lunden, & Schmitz, 2015).

Online education varies at each level of training, it is not the same to teach elementary school children than young people in high school or university adults; it all depends on previous learning experiences, acquired skills, autonomy, levels of knowledge, structure of study plans and programs, as well as the number of students per group



(Sánchez *et al.*, 2020). Teacher formation is also a factor, as exhibited in the present study, 55% of teachers possess undergraduate or professional training (i.e., licentiate's degree), 16% are specialists and 24% have master's degrees. This level of academic training *per se* does not mean better preparation for managing virtual environments, more than 85% of teachers had to make some kind of adaptation to their pedagogical materials.

The present study evidences that teachers of all educational levels surveyed in Latin America report having a medium-high knowledge of virtual tools; however, they report a work overload of up to 8 hours in addition to their regular hours as caused by the need to adapt educational material to the virtual modality. However, few teachers report receiving training on the management of virtual classrooms and pedagogical tools for virtuality, which becomes an option for improvement for public and private institutions. It is worth noting that these should be aimed at providing innovative and creative pedagogical tools suitable for this type of teaching. The results of this study are in accordance with the report by Eurofound and the International Labor Organization (ILO) (Eurofound & International Labor Organization, 2019), which reveals a tendency to work longer hours and with greater intensity for the remote or teleworking modality, in the present study 63% of surveyed teachers report an increase in their working hours. However, there are no other studies on the subject to embark on greater comparisons, therefore, this becomes an aspect that should be deepened in subsequent research.

Similarly, the present study reveals the little support provided by educational institutions to respondents regarding technical

and technological aspects for the provision of the teaching service, as well as the difficulties expressed by them pertaining to logistics issues with 32% (601), technological 27% (511), pedagogical 21% (384) and socio-affective 18% (335). Our percentage results are lower than those evidenced in a study carried out at a university in Mexico (Zubieta, Bautista & Quijano, 2012), where it was found that the most frequent problems of teachers were logistics (43.3%), followed by technological (39.7%), then pedagogical (35.2%) and to a lesser extent socio-affective (14.9%) (Ordoñez & Saltos, 2018); however, both studies reveal the same order of magnitude. In this study, when taking into account teachers at the primary and secondary levels, it is possible to show a greater socio-affective commitment compared to the study carried out in Mexico. They state that they feel guilty about the performance obtained by their students due to the change in modality. These data also suggest that the immediacy in the adoption of virtuality for teaching, the poor technological infrastructure in some countries or rural areas, as well as the existing digital divide between different sectors of society, which includes teachers and students, highlight problems that are felt and that imply government actions to democratize access to education through ICTs.

The tools used by the study participants for their academic, collaborative, synchronous and communication work are similar to those used internationally (Zubieta *et al.*, 2012). It is required to have constant communication with students, share information (files, videos, etc.) that allow asynchronous and synchronous work. Its incorporation into the educational environment was also due to the contingency that is being experienced and not to a measure planned and structured by the educational



institutions, which is why some of these institutions did not have the technological and support infrastructure that their educator and student bodies required. Including these topics in teacher training and development plans is a need that, from now on, must be considered by Latin American educational institutions.

This abrupt change in teaching modality has generated a reorganization of work and family life. When work is performed from home, a clear delimitation of working hours and functions is required. In the present study it is evidenced that 61% of those surveyed have children and 29% dependents, therefore, coexistence, sharing spaces destined for study, work and domestic chores generates a lot of labor and personal permeability (Centro de Ergonomía Aplicada, 2020), without a fixed schedule for their work activities and this is directly related to the fact that the vast majority report work-related interruptions in their hours of rest and recreation with their family, which has a negative influence, in their personal well-being and does not favor the conciliation between professional life and personal life: 72% of the teachers surveyed at the primary level, 73% at the secondary level and 55% at the university level report these interruptions during their working day. So much so that several of the countries participating in this study have initiated legislating a framework to regulate telework, in such a way that workers' rights are protected and fair management is given to work-rest spaces. According to the International Labor Organization (ILO), female individuals do a great deal of domestic work; this tends to decrease the number of hours spent teleworking, so there may be interference and a decrease in hours dedicated to teleworking. In our study, it was found that in 44% of the female teachers realizing virtual mode

education frequently had a negative impact on their family dynamics; in clear contrast to the male teachers where only 18.6% of those surveyed refer to a "frequently" negative impact for virtual modality work. According to a study, this is due to the fact that they tend to contribute less to domestic work and focus on fulfilling their working day (Eurofound & Organización Internacional del Trabajo, 2019).

If the variable of increased time in the preparation and adaptation of pedagogical material is taken into account versus the interruptions that teachers frequently have in their family activities, the data of the study showed that they are exposed to a great work overload. The responses given by teachers to technological resources, institutional processes, pedagogical and technological support, among many others, should become a first call for attention so that all government actors, teacher associations and unions, educational institutions, health institutions, occupational risk managers, among others, and academic staff in general, really propose and develop innovative policies and strategies in the education sector for the well-being of our teachers and students, in this time of confinement and subsequent return to classes, which contemplates alternating between face-to-face and virtuality, therefore, online or virtual education is here to stay and establish itself in our society.

International bibliography regarding workload and the adaptations that teachers must make are scarce; however, a recent study, published in June by the Faculty of Nursing of the Universidad Nacional de Asunción (Paraguay), concluded that the workload of teachers has increased, compared to their contact hours before the pandemic, and also showed lower levels of professional satisfaction and symptoms of stress and were neglected support from



their institution to assist in issues regarding teachers' mental health (Gómez & Rodríguez, 2020); this is consistent with findings of the present study.

One of the limitations of the present study corresponds to the fact that the results cannot be generalized, since it is not a study with a higher level of scientific evidence as would be the case for a probabilistic study of greater control over the sample population; nonetheless, it lays the foundation and details precedent measures to be considered and taken in order to improve the working conditions of teachers and the educational processes that have been affected and fractured due to abrupt changes with little or insufficient support from the educational institutions and the government in general.

Conclusion

The present study made possible the identification of the sociodemographic characteristics of the Latin American teachers who participated in it, as well as the recognition of institutional factors that generated an excessive workload such as: scarce technological infrastructure; deficient support provided regarding training, counseling and insufficient technical assistance provided to teachers. Additionally, it was possible to identify that only 62-67% of the surveyed population has a physical space where to satisfactorily perform their work, because despite having a specific work area, they had to adapt it during the confinement period, requiring a greater investment of time, to which must be added the adaptation of pedagogical material and training in the management of virtual educational tools.

On the other hand, from a personal perspective of the participating teachers, the study revealed negative effects brought

upon by the change from face-to-face to online virtual education performed from their home. These effects are manifested through constant work interruptions in their personal and family spaces; further, the vast majority have experienced technological difficulties during their work, which increases feelings of stress and frustration. Likewise, teachers acknowledge to investing a large amount of time in attending to questions and concerns raised by students and parents. It was also identified that the student population is not alien to all the issues stemming from online home studying, as it also presents a high percentage of technological, pedagogical and social difficulties as was perceived and indicated by teachers. Finally, the respondents heavily refer to lack of access to good connectivity as a major difficulty which hinders running a participative and fluid class that favors the interaction with students.

Nobody expected a pandemic and, for this reason, scenarios that cannot yet be considered are being and will be lived. Educators are not oblivious to these changes and have been affected by economic, psychological and social factors. The presented study becomes a first call for attention on their perception of the increase in workload, redefinition of their role in confinement and, above all, the insufficient support provided by educational institutions, which, in turn, will also experience adjustment and adaptation processes in which they must take into account their human factor, hand in hand with pedagogical and technological development.

Conflict of interests

The authors of this article declare that they have no conflict of interest.



Authors' declaration of contribution

All authors acknowledge that the final version of this article was read and approved. The contribution percentage distribution for the conceptualization, preparation and correction of this article was the following: LFMG 34%, GJQ 28%, MPV 19%, MFMG 19%.

Declaration of data availability

Data supporting the results of this study will be made available by the corresponding author [LFMG], upon reasonable request.

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