

Teaching Experiences in Urban and Rural Areas of Peru in COVID-19 Context

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ABSTRACT

Objective: to analyze experiences of pedagogical adaptation in distance education of teachers in urban and rural contexts in times of COVID-19, Huancayo-Peru. **Methodology:** a qualitative study of the phenomenological design was carried out to understand the world of subjects involved, taking into account their oral discourses on teacher pedagogical adaptation in the COVID-19 context. It focused on three categories: distance education, pandemic context, and perspective of the educational future. It was planned in four stages: clarification of the budgets, descriptive, structural, and discussion. The participants were six regular primary education teachers (three from the urban area and three from the rural area). To collect the information, an in-depth interview structured in 21 questions was used, framed in the three categories of analysis mentioned. **Results:** it is found that the teachers, especially those in the rural context, had to adapt to the lack of technological equipment, training, connectivity, and income, which limited their teaching performance in the COVID-19 context. **Conclusions:** The teachers were empowered in the new educational reality, adapting methodological strategies to virtuality in the Huancayo-Peru urban and rural contexts.

Keywords: Adaptation; Primary School Teachers; Urban Education; Rural Education; COVID-19.

INTRODUCTION

COVID-19 has affected millions of people around the world, leaving alarming mortality figures. To counteract this, massive confinements appeared across the globe (Abuabara-Franco et al., 2020), which modified people's lifestyles, also affecting all sociocultural dynamics. The education sector was not the exception, and therefore, it embraced virtuality to develop compulsory distance education (Martínez-

Garcés & Garcés-Fuenmayor, 2020). These circumstances led the educational actors to manage and apply educational, technological tools to build learning activities telematically (Albalá & Guido, 2020).

In this context, ICT usage was confirmed as a fundamental support to channel access and treatment of information, allowing educational development on a global scale (Code et al., 2020). This could be assumed as a disruptive process

that made it possible to continue promoting critical thinking and outlining values in students worldwide (Villafuerte et al., 2020). However, the use of ICT for educational purposes has been extraordinarily complex for those teachers who were not trained in its use, needing training on the fly and gradually applying them during the educational process (Luque, 2016). That is why teachers must have a different perspective of how teaching was taught before the pandemic (Cifuentes-Faura, 2020) and what it is like in the pandemic context; where a kind of radical adaptation is underway, that implies facing the online workload, as well as the need for training, access, and management of technology and the use of platforms, among other situations (Reynosa et al., 2020); through a transformative pedagogy, which is based on innovating strategies until significant learning is achieved (Code et al., 2020).

For this reason, the Peruvian Government, after the closure of all public and private educational institutions in the country, and to maintain a quality remote academic service, mainly implemented the “Aprendo en Casa” strategy, which required that the educational actors involved counted on the availability of technological equipment, access to connectivity, teacher training, as well as the motivation of all to carry out a teaching and learning process focused on the achievement of the competences provided by the State. Therefore, teachers had to acquire or strengthen their skills in using Information and Communication Technologies (ICT) for educational purposes (Ramos-Huenteo et al., 2020). However, as expected, not all of them adopted at the same speed because specific barriers coexisted that limited their performance, both in urban and rural areas, which are addressed in the present study. The research objective was to analyze the experiences of six Peruvian teachers who worked in urban and rural areas of Peru in the COVID-19 context. The study was developed in Huancayo-Peru.

METHODOLOGY

It is a phenomenological, hermeneutical study with a qualitative approach, whose purpose was to analyze, understand, and explain people's experiences related to a phenomenon (Hernández Sampieri et al., 2014). The in-depth interview allowed us to explore the experiences of six Peru-

vian teachers who worked in urban and rural areas of Peru in the context of COVID-19, Huancayo-Peru. The study was planned in four stages (1. clarification of the assumptions; 2. descriptive; 3. structural; 4. discussion) (Martínez, 2004), adapted for the investigation.

In the budget clarification stage, the starting point was taken: a) teachers who have experienced a process of adaptation to virtual classes in the COVID-19 context and can attest to their pedagogical practice; b) the application of the phenomenological method in the study setting made it possible to systematize the experiences of the teachers under study; c) the pedagogical adaptation of the teachers in question has social relevance in this context of a pandemic and distance education is articulated.

The descriptive stage was developed in three steps: 1) we proceeded to choose the appropriate techniques, methodology, procedures, and ethical aspects for the study; 2) carrying out the observation and structured interview through a questionnaire made up of 21 semi-structured questions in the following categories: Distance education; Pandemic context; Perspective of the educational future. 3) In elaborating the protocol description, the letters of presentation and invitation to expert judges, letters of informed consent were taken into account. The participants were made aware of the importance, objective, scope, and educational relevance of the study through private meetings.

In the structural stage, the protocols were ordered according to: a) delimitation of their thematic units, panoramic vision and application of the declared protocols, reviewing contingency plans and developing investigative competencies, skills, and attributes; b) delimitation of thematic units, coding, and categorization. The primary databases consulted were Scopus, Web of Science, EBSCO, and ProQuest to provide cross-sectional theoretical support for international reference. c) To determine the nuclear power plant topic of each thematic unit, we also proceeded to verify the relevance and objectivity of the instrument to make corrections for bias, technicality, inconsistencies, repetitions, redundancies and ensure its coherence and cohesion. d) Precision of the central theme about the phenomenon that is studied in a scientific language. e) Description of the integration of the central themes. After applying the instrument, a reflection about the results was carried out to organize

and integrate them according to the central categories through the synthesis, description, and integration with the theoretical postulates concerning the fundamental types of the phenomenon under study. As a final procedure, the results were socialized with the main teachers to reflect on their opinions and confirm the results.

In the discussion stage, the results were contrasted with other studies to reflect on convergences, divergences, and new contributions; this process was decisive to arrive at new knowledge.

RESULTS AND DISCUSSION

To Distance Education, the participants state that they are currently in confinement, sharing their day-to-day household chores and remote work, which in many cases covers a large part of the day because they have to attend to the needs of their children. Students at any time. It is perceived that the teachers were not prepared to carry out their work in distance education, so they were forced to make pedagogical adaptations to face this new context. A recent study confirms this fact by rescuing that remote sessions were a great challenge for teachers, who had to adapt to the use of digital platforms, online applications, and communication tools as a means of work, in addition to facing stressful times during confinement (Kuzelj & Samija, 2020). It was found that the teachers in the urban area begin their work very early (6:00 am) on the virtual platform, where they have to upload the materials of the day and then share them via WhatsApp with their students before they enter at 9:00 am. The classes last an hour and a half; at the end, calls are made to those students who have had difficulties entering. In the afternoon, the reinforcement is carried out to review the evidence then and finish with the preparation of the classes the next day. All this work lasts until approximately midnight. Teachers in rural areas state that they coordinate with their undergraduate colleagues to select the activities and strategies to be worked on during the week, distributed among the teachers to minimize the workload of planning the learning experience. In both contexts, it is appreciated that teachers have had to make profound adjustments in their pedagogical dynamics to respond to the learning needs of their students.

The teachers in the urban area state that, thanks

to the use of virtual platforms such as Zoom, Classroom, and WhatsApp, they can develop virtual classes through the “Aprendo en Casa” strategy of the Ministry of Education (MINEDU, for its acronym in Spanish), which helps them organize learning experiences and feedback activities. However, to problematize, explore prior knowledge, and achieve the planned capacities, they need to use other dynamics such as role-play, riddles, and the feedback strategy. On the other hand, teachers in rural areas, to guarantee some level of communication with students, are forced to use other lighter and more accessible applications such as WhatsApp because connectivity is defective in those areas. Using WhatsApp for educational purposes allows them to share short videos, elaborate videos with simple explanations, and easy-to-download PDF documents. This experience corresponds to recent research, where it is argued that teachers use social networks to communicate with their students and provide instructions related to their classes; the study also highlights that the use of technologies empowers students. Students to share critical information and provide relevant feedback in this world of pandemic virtuality (Toquero & Talidong, 2020).

It is found that all the teachers faced the students' connectivity problems, who barely had a cell phone in the family. This frustrating reality forced teachers to innovate new strategies and, with it, more workload. This significant obstacle required a lot of ingenuity on the part of the teachers, who again had to adjust their methodology to reach all their students effectively. When reviewing the specialized literature, it was found that in the COVID-19 context, teachers faced obstacles such as technical problems, lack of parental access to mobile devices and the Internet, ignorance in the handling of technological equipment that generated delay in the appropriation of online learning (Alrefaie et al., 2020).

The teachers correlate the characteristics of face-to-face education with remote education, highlighting that in face-to-face teaching, the students had the guidance, orientation, and accompaniment of the teacher, who respected the rhythm of each student and implemented strategies to overcome learning difficulties. Still, in remote education, this role was assumed mainly by parents, older siblings, or other relatives, who did not have the appropriate skills to guarantee

quality learning. The teachers consider that the learning environment at home produces distraction in the student, making it difficult for her to learn. This leads the parent to think that distance education is not of quality. In addition to this, the excessive use of mobile devices outside the supervision of parents are distractors that limit the consolidation of learning, so it is necessary to monitor and guide children in their use (Ramírez-García et al., 2020); (Alrefaie et al., 2020); (Sandoval et al., 2020).

In the urban area, the feedback has been questionable because the students show marked difficulties in developing and realizing the learning evidence. If the input is entrusted to parents, who potentially ignore the process; This will result in questionable capacity development. In rural areas, feedback has been practically impossible because of all the technological deficiencies, lack of access to technological devices, ignorance in the management of ICT, economic limitations, among others; Also, the parents lack essential preparation who, the teachers say, are victims of the negligible social gaps that currently exist in Peru. Despite this, the teachers in the urban area drew up their strategies to get feedback from each student. For their part, rural teachers provided feedback through telephone calls, video calls, group or individual text messages, considering the need and possibility of each student; however, some students sent their evidence out of time, causing them not to provide the necessary and timely feedback. Despite the difficulties these teachers presented, it is perceived that they have become empowered in the virtual learning process by expressing that "it has been a wonderful and fruitful experience, experiencing that children this year have learned autonomously." This statement is consistent with a study where it is highlighted that individual and group strategies followed by feedback were essential to achieve learning and process evaluation (Nayak et al., 2020).

As explained, in rural areas, the possibilities of connectivity are minimal. Therefore, students could not use the "Aprendo en Casa" platform regularly. Faced with this, the teachers did not remain inert. Still, among the adaptations, they used the available technology to bring the information closer to the students: selection of substantive resources, photographs, audios, and small audiovisual segments, among others, and then send it by WhatsApp. In the urban context,

the teachers presented similar limitations, but in a much smaller proportion, they could better handle the situation.

WhatsApp; asimismo esta aplicación es tomada en cuenta para el proceso de retroalimentación que no se puede realizar mediante la radio y televisión (Martínez et al., 2020). Además, el WhatsApp en las clases en línea, con una organización adecuada, puede convertirse en un excelente complemento de los métodos de enseñanza (Hughes et al., 2020). No obstante, otro estudio reciente alerta que el uso del WhatsApp durante el proceso docente educativo, aunque permite a los estudiantes seguir el proceso de aprendizaje, les genera incomodidad. Por ello, se recomienda no utilizar el WhatsApp en esta educación a distancia, debido a que repercute en la eficacia de los aprendizajes (Agustin Mawarni et al., 2020), quedando claro que ante obligatoriedad de utilizar estas aplicaciones y ante la necesidad de usarlas con fines educativos; resulta invaluable la colaboración de los padres de familia.

In summary, the teachers received the information that was transmitted through the "Aprendo en Casa" platform, analyzed it, summarized it, supplemented it, and later sent it to the parents with a set of recommendations to take into account; In this way, they contributed to the learning of the students who, thanks to this effort, were able to access the core information to develop skills and at the same time have inputs to establish the learning evidence of the individual portfolio. The teachers assert that bringing academic material to students using lightweight applications such as WhatsApp allows them to feel confident, better develop their content, communicate their communication skills, and express their learning fluently. A consulted investigation found that 85% of Peruvian teachers use the WhatsApp application as the primary tool for the development of their distance classes; Likewise, this application is taken into account for the feedback process that cannot be carried out through radio and television (Serna Martínez et al., 2020). Furthermore, WhatsApp in online classes, with proper organization, can become an excellent complement to teaching methods (Hughes et al., 2020). However, another recent study warns that the use of WhatsApp during the educational teaching process, although it allows students to follow the learning process, causes them discomfort. For

this reason, it is recommended not to use WhatsApp in this distance education because it affects the effectiveness of learning (Agustin Mawarni et al., 2020), making it clear that in the face of the obligation to use these applications and the need to use them for educational purposes; The collaboration of parents is invaluable.

Another striking factor is access to training. The teachers who work in urban areas state that they have more significant experience and ability to handle ICTs because they had received virtual courses taught on the PeruEduca platform of MINEDU and the graduate studies they received or were currently receiving. For their part, the teachers in the rural areas report having minimal knowledge about the use and management of ICTs for educational purposes, making it difficult for them to develop their teaching activities at first, motivating them to deepen their knowledge in the use of tools. Technological skills on their own since they need technical and pedagogical ICT skills to effectively face the teaching-learning process (Rap et al., 2020). In both contexts, it is found that this conjuncture was an opportunity to discover many unknown technologies but are now essential to carry out a world-class educational teaching process.

The teachers in the rural context had to make adaptations to the didactic strategies to adjust them to the schedules in which the students could attend classes, generally Monday, Wednesday, and Friday; because they had to move to strategic places where the signal would arrive, being evident that in rural areas, the reality of distance education has been chaotic, due to the extreme poverty of families that barely had a mid-range cell phone and withdrawal for virtual classes; Furthermore, due to the remoteness of their homes they did not have access to the internet, and another factor was the economic situation. These circumstances generated the interruption of the virtual classes during the first months because there was no connection with most students. On the one hand, this situation improved when the Government started to provide support to level their learning and develop essential knowledge to end the school year. On the other hand, teachers and parents found a way to acquire better devices, regardless of the significant economic investment. This reality has not been alien to different contexts globally, were stable,

fast, and prolonged access to the internet generated additional expenses for students and teachers (Putri et al., 2020).

In the urban context, the teachers allege that to develop the virtual classes, the students had technological equipment such as laptops or cell phones, which initially made it difficult for them to use, making it necessary to send tutorials by the teacher to guide proper handling, and to make the classes more exciting and motivating are supported by other technological tools such as the Mentimeter, Agora, and Paint; allowing dynamic and active interaction between students. However, in urban areas, some only had a cell phone to access their classes via Zoom. They couldn't share their work with their classmates because the application could not be run from their mobile phones and send the evidence, they used WhatsApp or Classroom. In Peru, for the development of virtual classes, it is necessary to have access to radio and television and to have electronic devices such as a computer, cell phone, and tablet; also have essential resources for its operation such as electricity and connectivity (Covarrubias Hernández, 2021).

The teachers in the Peruvian rural context were at a clear disadvantage. Before starting with virtuality, one of the rural teachers surveyed asked if the parents had the necessary technological equipment. According to her, the results reflected that, of the 31 parents, only 3 (9.7%) had a laptop and could access to work through the Zoom platform; however, the other 28 (90.3%) only had a mid-range cell phone for the whole family. This reality is general in Peruvian rural areas, especially in the high Andean regions. It extraordinarily limits the performance of teachers who, despite engineering, face a technological gap that does not allow them to advance or develop their work with quality. Therefore, innovation in online learning is hampered by the difficulty in connectivity that occurs in these contexts (Dube, 2020).

Related to the Pandemic Context, the participants indicate that COVID-19 has given them lessons, which has led them to change their lifestyles related to health, food, and family relationships; Furthermore, in the face of this reality, biosafety protocols continue to be maintained to avoid getting this virus. According to one of them, you have to be very careful because many relatives have died, no family has been left without some affectation, and the future is uncertain.

The virulence of this pandemic has forced citizens and especially teachers to implement a set of biosafety measures established by the Ministry of Health of Peru such as hand washing, use of masks, use of face shield, washing, and disinfection of products purchased for consumption, changing clothes when arriving home; as well as when going out to the street, maintain a certain distance from people and avoid crowded places (MINSA, 2021).

On the other hand, they indicate that they go out into the street only when necessary and that the adults within the family do it; Also, one of the teachers adds that she makes use of traditional medicine such as infusions, vaporizations, and the consumption of some foods to strengthen her immune system. This set of biosecurity measures is essential to keep in mind permanently due to the constant risk in social interrelationships. It is difficult to know who is infected, so masks are necessary (Crowley et al., 2020). The rural teachers, in some way, manifested themselves safer because they lived in a country environment where the problems of overcrowding that do occur in urban areas did not happen.

The pandemic has brought new ways of living and acting for teachers, students and parents. In this sense, the teachers consider that confinement has made it possible to improve family coexistence, causing family ties to strengthen, enhance communication between their members, and make them better known by sharing spaces and moments such as breakfast, lunch, or dinner. These possibilities, according to the teachers, were rare before the pandemic. On the other hand, the lifestyle of families has been altered because now, work and study are carried out virtually, causing parents and children to stay longer in the face of virtuality, changing the health of the family.

In this pandemic situation, there are several scenarios; On the one hand, families have managed to integrate more, sharing moments that were not possible before; However, there is also another scenario in which families have been immersed in conflicts that are often serious at the beginning of the pandemic, but which were resolved as time passed. The family group adapted to a new way of sharing (Parada & Zambrano, 2020), bringing with it a new context in which parents have become classmates and teachers of their children, sharing pleasant moments as a

way to cope with this situation of social isolation, motivating a closer family union (Ramírez, 2021).

In the Perspective of the Educational Future category: The teachers deployed a set of methodological and didactic adaptations in this pandemic situation, following the guidelines and orientations of the “Aprendo en Casa” strategy and being guided by said strategy to meet the minimum requirements of MINEDU; This has contributed to gradually adapting to the new educational reality and the needs of the students. However, the teachers assure that it has not been easy at all, but that they have acquired decisive lessons for the education of the future along the way. They can also continue to improve the skills acquired in this context and continue to correct weaknesses until strengths replace them. A recent publication indicates this position when it recommends analyzing how ICT can be used to transform spaces and learning experiences in the future and the educator's role (Jiménez-Sánchez, 2020). However, the teachers claim to feel uncertainty because they do not know under what modality teaching will be governed in 2021 since the MINEDU authorities have not specified whether it will continue to be through virtuality if it will return to the face-to-face mode or a new model would be implemented educational based on the positive experiences of both modalities. This misinformation generates confusion and uncertainty in teachers. However, they emphasize that, if remote education continues, the State must provide the technological and connectivity tools to students and teachers to connect and overcome the constant vicissitudes of 2020.

Finally, the teachers agree that the pandemic has generated a kind of empowerment for them with the new pedagogical strategies that will be decisive for the education of the future. Also, they are aware that they are unaware of other innovative approaches that are already being used by other colleagues, especially in the urban area. The teachers in the rural area assert that all the deficiencies found in the pandemic context: connectivity problems, lack of technological equipment, as well as coexisting economic factors; They compromise the development of students' cognitive skills and generate cognitive gaps that, to overcome them, will require a lot of effort and dedication on the part of teachers, students and

parents. A recent study, which analyzed the impact of the digital divide on the achievement of learning outcomes, found that indicators of academic achievement are closely related to access to ICTs and the purchasing power of families (Montenegro et al., 2020).

CONCLUSIONS

The educational scenario experienced by the teacher's understudy during COVID-19 was marked by the lack of availability of adequate technological equipment, likewise, by poor connectivity that made it impossible to develop basic skills in students; This situation was more complex in rural schools where marked technological, economic and geographical limitations coexisted that limited the acquisition of equipment and the use of technological platforms such as Mentimeter, Agora, and Paint; having to use WhatsApp, being a lightweight application that allowed a better interconnection.

In urban areas, a large part of the families had laptops or cell phones that, although shared with other members of their household, allowed regular access to virtual education. However, in rural areas, the situation was extreme because the vast majority of parents barely had a primary cell phone that made it challenging to access virtual classes, affecting the comprehensive cognitive development of children. Faced with these limitations, teachers and parents assumed an adaptive role that contributed to the educational development of the children.

Related to the feedback process, significant differences were observed between urban and rural areas. In urban areas, parents assumed the role of tutor of learning, despite their didactic limitations. In rural areas, the gaps in access to technological equipment, the lack of knowledge and use of such equipment, and the profound didactic rules made it evident the difficulties to provide adequate and timely feedback from the students. The teachers in the urban area adapted faster to the new educational context. In contrast, their counterparts in the rural area faced severe difficulties in adapting to the virtual modality due to all the limitations mentioned above. This was motivation to train on their own, improve their digital skills and adjust to the new educational scenario.

The teachers acknowledge that COVID-19 affected their daily lives, causing pain and sadness for both them and their students, especially those who had suffered the loss of their loved ones. This same situation forced them to make changes in their lifestyle and put into practice biosafety protocols to avoid getting infected and learn to live in a confinement situation that allowed them to strengthen their teaching vocation.

The lack of management by MINEDU authorities constantly worried teachers in both contexts because that government agency did not deploy aggressive strategies to solve connectivity and the lack of access to technological equipment throughout the country. It also failed to materialize targeted training for updating modern adaptive skills with a socio-educational context. However, the vocation of the educators allowed them to develop, self-taught, the pedagogical skills for virtual education, managing to turn difficulties into development and innovation opportunities for performance following the moment.

REFERENCES

- [1] Abuabara-Franco, E., Bohórquez-Rivero, J., Restom-Arrieta, J., Uparella-Gulfo, I., Sáenz-López, J., & Restom-Tinoco, J. (2020). Infección por SARS-CoV-2 y enfermedad COVID -19: revisión literaria. *Salud Uninorte*, 36(1), 196–231. <https://doi.org/http://dx.doi.org/10.14482/sun.36.1.616.211>
- [2] Agustin Mawarni, I. T., Ratnasari, N., Handayani, A. N., Muladi, M., Aji Wibowo, E. P., & Sri Untari, R. (2020). Effectiveness of WhatsApp in improving student learning interests during the covid-19 pandemic. *4th International Conference on Vocational Education and Training, ICOVET 2020*, 248–252. <https://doi.org/10.1109/ICOVET50258.2020.9230031>
- [3] Albalá, M. Á., & Guido, J. I. (2020). The Socio-educational Gap Derived from Covid-19: Possible Approaches from the Social Justice Framework. *Revista Latinoamericana de Estudios Educativos*, 50, 173–194. <https://doi.org/https://doi.org/10.48102/rle.2020.50.ESPECIAL.101>

- [4] Alrefaie, Z., Hassanien, M., & Al-Hayani, A. (2020). Monitoring Online Learning During COVID-19 Pandemic; Suggested Online Learning Portfolio (COVID-19 OLP). *MedEdPublish*, 9(1). <https://doi.org/10.15694/mep.2020.000110.1>
- [5] Cifuentes-Faura, J. (2020). Online learning and Covid-19: The need to keep reinventing. *Revista de Estilos de Aprendizaje*, 13, 115–127.
- [6] Code, J., Ralph, R., & Forde, K. (2020). Pandemic designs for the future: perspectives of technology education teachers during COVID-19. *Information and Learning Science*, 121(5–6), 409–421. <https://doi.org/10.1108/ILS-04-2020-0112>
- [7] Covarrubias Hernández, L. Y. (2021). Distance education: transformation of learning. *Telos Revista de Estudios Interdisciplinarios En Ciencias Sociales*, 23(1), 150–160. <https://doi.org/10.36390/teelos231.12>
- [8] Crowley, P., Talmon, G., Mujica, G., Labanchi, J., Hansen, R., Gallardo, D., Marquez, P., Crombas, G., Sepulveda, L., Grismado, C., Ochoa, A., & Larrie, E. (2020). Intervenciones en SARS-CoV-2 en el marco de Una Salud: Medidas para controlar la transmisión de la enfermedad a 110 días de pandemia en la Provincia de Rio Negro. *Ciencia Veterinaria*, 22(2), 119–134. <https://doi.org/http://dx.doi.org/10.19137/cienvet202022203>
- [9] Dube, B. (2020). Rural Online Learning in the Context of COVID-19 in South Africa: Evoking an Inclusive Education Approach. *Multidisciplinary Journal of Educational Research*, 10(2), 135–157. <https://doi.org/10.4471/remie.2020.5607>
- [10] Hernández Sampieri, R., Fernández Collado, C., & Baptista Lucio, M. del P. (2014). Metodología de la investigación. In 5 (6th ed.). McGRAW-HILL / INTERAMERICANA EDITORES, S.A. DE C.V.
- [11] Hughes, B. A., Stallard, J., & West, C. C. (2020). The use of Whatsapp® as a way to deliver plastic surgery teaching during the COVID-19 pandemic. In *Journal of Plastic, Reconstructive and Aesthetic Surgery* (Vol. 73, Issue 7, pp. e1–e2). Churchill Livingstone. <https://doi.org/10.1016/j.bjps.2020.05.034>
- [12] Jiménez-Sánchez, S. (2020). Critical integration of emerging technologies in teacher education: Looking to the future. *Revista Electronica Educare*, 24.
- [13] Kuzelj, M., & Samija, K. (2020). Distance learning caused by the COVID-19 pandemic in Croatia: What do newspaper portals deliver to readers? *2020 43rd International Convention on Information, Communication and Electronic Technology, MIPRO 2020 - Proceedings*, 854–859. <https://doi.org/10.23919/MIPRO48935.2020.9245334>
- [14] Luque, F. J. (2016). The ICT in Education: Walking Toward The LKT. *3Ciencias*, 5(4), 55–62. <https://doi.org/10.17993/3ctic.2016.54.55-62>
- [15] Martínez-Garcés, J., & Garcés-Fuenmayor, J. (2020). Digital teaching skills and the challenge posed by virtual education as a result of Covid-19. *Educación y Humanismo*, 22(39), 1–16. <https://doi.org/10.17081/eduhum.22.39.4114>
- [16] Martínez, M. (2004). Ciencia y arte en la metodología cualitativa. In *México: Trillas*.
- [17] MINSA. (2021). *Covid 19 en el Perú - Ministerio del Salud*.
- [18] Montenegro, S., Raya, E., & Navaridas, F. (2020). Teacher's perceptions of the effects of the digital divide in primary education during the Covid-19. *Revista Internacional de Educacion Para La Justicia Social*, 9(3), 317–333. <https://doi.org/10.15366/RIEJS2020.9.3.017>
- [19] Nayak, K. R., Punja, D., & Suryavanshi, C. (2020). Impact of readiness assurance process and faculty feedback on individual application exercises: a model for continuous assessment in physiology. *Advances in Physiology Education*, 44(4), 509–515. <https://doi.org/10.1152/advan.00065.2020>
- [20] Parada, D. A., & Zambrano, G. E. (2020). Reinvention of daily life in women from Cúcuta in times of COVID-19. *Psicoperspectivas*, 20(3), 1–12. <https://doi.org/https://dx.doi.org/10.5027/psicoperspectivas-vol20-issue3-fulltext-2046>
- [21] Putri, R. S., Purwanto, A., Pramono, R.,

- Asbari, M., Wijayanti, L. M., & Hyun, C. C. (2020). Impact of the COVID-19 pandemic on online home learning: An explorative study of primary schools in Indonesia. *International Journal of Advanced Science and Technology*, 29(5), 4809–4818.
- [22] Ramírez-García, A., Salcines-Talledo, I., & González-Fernández, N. (2020). Mobile devices at home. Formative interest of Spanish families. *Revista Española de Orientación y Psicopedagogía*, 31(1), 43–61.
<https://doi.org/https://doi.org/10.5944/reop.vol.31.num.1.2020.27286>
- [23] Ramírez, G. G. (2021). The family and the play as a distance learning strategy during the pandemic. *Revista de Educación a Distancia*, 21(65), 1–20.
<https://doi.org/https://doi.org/10.6018/red.456231>
- [24] Ramos-Huenteo, V., García-Vásquez, H., Olea-González, C., Lobos-Peña, K., & Sáez-Delgado, F. (2020). Teaching perception regarding pedagogical work during COVID-19. *CienciaAmérica*, 9, 1–20.
<https://doi.org/http://dx.doi.org/10.33210/ca.v9i2.32>
- [25] Rap, S., Feldman-Maggor, Y., Aviran, E., Shvarts-Serebro, I., Easa, E., Yonai, E., Waldman, R., & Blonder, R. (2020). An Applied Research-Based Approach to Support Chemistry Teachers during the COVID-19 Pandemic. *Journal of Chemical Education*, 97(9), 3278–3284.
<https://doi.org/10.1021/acs.jchemed.0c00687>
- [26] Reynosa, E., Rivera, E. G., Rodríguez, D. B., & Bravo. (2020). Adaptación docente educativa en el contexto COVID-19: Una revisión sistemática. *Revista Conrado*, 16(77), 141–149.
- [27] Sandoval, L. R., Salvatierra, C., & Carrizo, N. S. (2020). “He better answers me! {”} The appropriation of mobile telephony from the perspective of mothers and fathers. *Question. Revista Especializada En Periodismo y Comunicación*, 1(65), 1–19.
<https://doi.org/https://doi.org/10.24215/16696581e260>
- [28] Serna Martínez, J. S., Martínez Oviedo, D. J., & Arrubla Osorio, J. A. (2020). Rural education and device evaluation in times of “COVID-19”: voices of Math teachers. *Revista Latinoamericana De Etnomatemática Perspectivas Socioculturales De La Educación Matemática*, 13(1), 86–103.
<https://doi.org/10.22267/relatem.20131.43>
- [29] Toquero, C. M. D., & Talidong, K. J. B. (2020). Socio-educational implications of technology use during COVID-19: A case study in General Santos City, Philippines. *Human Behavior and Emerging Technologies*.
<https://doi.org/10.1002/hbe2.214>
- [30] Villafuerte, J., Bello, J., Pantaleón, Y., & Bermello, J. (2020). Rol de Los docentes ante la Crisis del Covid-19, una mirada desde el enfoque humano. *REFCaIE*, 8(1), 134–150.
<https://refcale.uleam.edu.ec/index.php/refcale/article/view/3214>