

<https://doi.org/10.23913/ride.v14i27.1713>

Artículos científicos

Modelos de liderazgo escolar durante la pandemia para afrontar la era postcovid

Models of school leadership during the pandemic to face the era post-COVID

Modelos de liderança escolar durante a pandemia para enfrentar a era pós-COVID

Marlett Jasmin Blas-Rivera

Instituto Politécnico Nacional, Unidad ESCA-Santo Tomás, México

marlettj.rivera@gmail.com

<https://orcid.org/0000-0002-0237-9718>

Edgar Oliver Cardoso-Espinosa

Instituto Politécnico Nacional, Unidad ESCA-Santo Tomás, México

eoce@hotmail.com

<https://orcid.org/0000-0001-7588-9439>

Erick Daniel Nava-Meléndez

Instituto Politécnico Nacional, Unidad ESCA-Santo Tomás, México

erickdnm@hotmail.com

<https://orcid.org/0009-0005-7244-2590>

Resumen

El presente es un estudio teórico en el que se procuró abordar el liderazgo escolar empleado por diferentes agentes de cambio con el objetivo de enfatizar los modelos de liderazgo aplicados en su gestión durante la pandemia. El propósito fue resaltar las estrategias que permitieron continuar con la educación a distancia, de modo que en la era postcovid este conjunto de acciones sirvan de apoyo y guía de acción para alcanzar las metas planteadas en los institutos. Para conseguir ese objetivo, se analizaron diferentes investigaciones sobre el actuar de los líderes escolares durante la pandemia en México, Perú, Estados Unidos, España y Malasia. Los resultados obtenidos indican lo siguiente: se debe priorizar la seguridad y la estabilidad emocional en cada miembro del instituto; asimismo, se desarrolló la resiliencia, el pensamiento sistémico y se fortaleció una conciencia social; se acentuó la comunicación bidireccional para

generar confianza; se dio prioridad al rol docente en la toma de decisiones y en la formación en nuevas tecnologías; se empleó la metodología de objetos-lenguaje y el aprendizaje basado en proyectos (ABP); se analizaron las fortalezas y necesidades de cada alumno; se desarrolló el pensamiento crítico y la comprensión conceptual, y se establecieron reuniones para mantener una negociación colectiva a distancia. En síntesis, se puede concluir que los líderes escolares recurrieron a la combinación y aplicación de diferentes modelos de liderazgo, como de servicio, auténtico, intermedio, adaptativo y basado en crisis, lo que les permitió afrontar los desafíos derivados por la pandemia para, en la era postcovid, implementar y adaptar cada acción a su contexto para mejorar la educación en el mundo.

Palabras clave: educación postcovid, gestión educativa, instituciones educativas, liderazgo escolar, modelos de gestión educativa.

Abstract

The present is a theoretical study that sought to address school leadership employed by different change agents with the aim of emphasizing leadership models applied in their management during the pandemic. The purpose was to highlight the strategies that allowed the continuation of distance education, so that in the post-COVID era, this set of actions serves as support and guidance to achieve the goals set in the institutes.

To achieve this objective, different research on the actions of school leaders during the pandemic in Mexico, Peru, the United States, Spain, and Malaysia was analyzed. The results obtained indicate the following: prioritizing the safety and emotional stability of each member of the institute is necessary. Likewise, resilience, systemic thinking, and social awareness were developed; bidirectional communication was emphasized to build trust; priority was given to the teaching role in decision-making and training in new technologies; the object-language methodology and project-based learning (PBL) were employed; strengths and needs of each student were analyzed; critical thinking and conceptual understanding were developed, and meetings were established for remote collective negotiation. In summary, it can be concluded that school leaders resorted to the combination and application of different leadership models, such as service, authentic, intermediate, adaptive, and crisis based. This allowed them to face the challenges derived from the pandemic and, in the post-COVID era, implement and adapt each action to their context to improve education worldwide.

Keywords: educational institutions, educational management models. educational management, school leadership, post-COVID education.

Resumo

Foi realizado um estudo teórico para abordar a liderança escolar utilizada por diferentes agentes de mudança; com o objetivo de enfatizar os modelos de liderança aplicados na sua gestão durante a pandemia, de forma a evidenciar as estratégias que permitiram a continuidade da educação a distância, para que, na era pós-COVID, este conjunto de ações, sirva de apoio e guia de ação para atingir metas nos institutos no novo normal.

Foram analisadas diferentes investigações sobre a atuação de dirigentes escolares durante a pandemia, no México, Peru, Estados Unidos, Espanha e Malásia. Os resultados obtidos foram: Priorização da segurança e estabilidade emocional em cada integrante do instituto, desenvolveu-se resiliência, pensamento sistêmico e fortalecimento da consciência social; a comunicação bidirecional foi enfatizada para gerar confiança; Foi dada prioridade ao papel do professor na tomada de decisões e na formação em novas tecnologias, foram utilizadas a metodologia da linguagem-objecto e da aprendizagem baseada em projectos (PBL), foram analisados os pontos fortes e as necessidades de cada aluno, o pensamento crítico e a compreensão conceptual e foram estabelecidas reuniões para manter a negociação coletiva à distância. Concluindo, que os dirigentes escolares recorreram à combinação e aplicação de diferentes modelos de liderança como: serviço, autêntico, intermédio, adaptativo e de crise, permitindo-lhes enfrentar os desafios derivados da pandemia; e na era pós-COVID implementar e adaptar cada ação ao seu contexto para melhorar a educação no mundo.

Palavras-chave: educação pós-COVID, gestão da educação, instituições educativas, liderança escolar, modelos de gestão da educação.

Fecha Recepción: Abril 2023

Fecha Aceptación: Noviembre 2023

Introduction

Since the beginning of the crisis triggered in 2020 by the spread of covid-19 until today, several studies have documented the repercussions of this pandemic in various sectors around the world. Specifically, the educational environment of countries such as Mexico, Peru, the United States, Spain and Malaysia, the object of study of this research, was particularly affected, which forced the implementation of various strategies to guarantee the continuity of student learning. .

In response to this situation, education was transformed into an emergency remote teaching model. Although at that time many of the technological tools were not yet fully used, they were adapted for application during the pandemic period. However, what began as a temporary measure to maintain online education became an everyday resource used for various activities, from meetings through platforms such as Zoom, Microsoft Teams and Google Meet,

to downloading books online , uploading projects and tasks to the cloud or educational platforms, as well as sending scanned or signed documents by email. These resources have not only served to save time and costs, but have also become an integral part of teaching.

Although, at first, the use of these technological means represented a challenge for some members of the educational centers, the majority received training to develop the necessary digital skills and competencies and continue their work from home.

In particular, it is essential to highlight one of the strategies adopted in Mexico, Peru, the United States, Spain and Malaysia: teacher training. This training was carried out urgently due to the current situation and, above all, due to concern for the education of the students. At this point, the leadership of the directors of educational centers at the national and international level played a crucial role. Each of the strategies that will be described later was implemented based on the experience, knowledge, and skills of these educational leaders, which also posed significant challenges for them.

Specifically, this theoretical study addresses how school leaders made the most of their resources, in particular the different leadership models, based on traditional models such as transformational, transactional and situational, as well as current models, such as adaptive leadership. (a variant of transformational with a hybrid or virtual approach), crisis-based leadership, authentic leadership, service leadership and middle leadership.

These approaches are explained by several authors in their respective investigations. For example, Auliah *et al* . (2021) in “Evidence from School Leader and Teacher Perspectives” in Malaysia; Diaz *et al* . (2021) in “Management skills in a context of health emergency, covid-19” in Peru; McLeod (2020) in “School leadership during the pandemic” from the University of Colorado, Denver; Ramos-Pla *et al* . (2021) with their research “Leadership in times of crisis COVID-19” in Catalonia, Spain, and Rigby *et al* . (2020) in their search titled “Leadership Practices for Change in the Context of COVID-19” from the University of Washington.

From a general perspective, middle leadership is identified as one of the most crucial, especially in the context of the health crisis. According to the research of Díaz *et al* . (2021), McLeod (2020) and Rigby *et al* . (2020), school leaders played a fundamental role in teachers' decision-making, guiding them in choosing digital tools and teaching methods that suited the needs of each educational system in their respective countries.

This shows that school leaders must support all key actors in the institution. In other words, your responsibility is based on understanding your staff, motivating and integrating them, making them feel their value and importance as individuals and contributors. To do this, they must be honest in their interactions and fair in their decisions, so that they can foster synergy and achieve the success of the institution.

As a first point, this study focuses on the beginnings of leadership in educational institutions, which requires a brief summary of the characteristics of a leader, the main contributions to leadership theory and how it adapts to the context of educational leadership.

To support this argument, the previously mentioned research is explained, which examines the changes in school leadership during the covid-19 confinement in various educational organizations in countries such as Mexico, Peru, the United States, Spain and Malaysia. These studies analyze how distance education was approached, with a central focus on educational leaders. Based on their experience and training, these leaders adopted a variety of methods and strategies to ensure the continuity of distance learning. As a result, the strategies that proved to be effective during the health crisis and that have allowed education to continue in various modalities in the post-covid era are summarized.

It is important to highlight that these points of view emerged from various studies carried out during 2020 and 2021, both nationally and internationally. These works highlight the ability of most educational leaders to confront a crisis of such magnitude, which represented an unprecedented challenge both for them and for educational systems around the world. At the same time, these studies revealed deficiencies in educational systems in various parts of the world and, in some cases, the lack of preparation of educational leaders (McLeod and Dulsky, 2021). This reflects the need for strong leadership in times of crisis such as that caused by Covid-19. Furthermore, it is important to mention that government support for schools and families was ambiguous, creating uncertainty in the educational field around the world.

Ultimately, it is essential to reflect on the effects that the pandemic has had on education globally, in particular, focusing on the positive changes that have occurred. We must pay attention to the actions and resources that were successfully implemented in educational organizations, since they represent a starting point for the development and innovation of teaching processes and methods that in many schools had become obsolete. It can be said, therefore, that the pandemic revealed these deficiencies and allowed their transformation. Although they are still adapting to the new normal in the post-covid era, these changes have opened the door to more effective and updated education.

Context about the leader and leadership

Although the concept of *leadership* has been defined by multiple authors and various theories, it is undoubtedly a multidisciplinary construct, so it cannot be considered a definitive conception. Knowing this, and for the purposes of this study, what was stated by Cifuentes-Medina *et al* will be taken into account . (2020), who consider that a leader can be associated with human behavior that arises naturally and instinctively. This idea is related to a boss who

uses certain strategies to ensure the survival of his people. In other words, a leader is recognized as that person who guides, directs, commands, heads and directs his or her work team to achieve the desired objective. In addition, it has the ability to manage resources and optimize them. Therefore, a leader will always look for new areas of opportunity.

Characterization of educational leadership

In the context of the significant influence of various studies on leadership practice, the first research conducted in the 1980s focused on unraveling the characteristics of a business leader, which led to the development of theories on leadership. This approach laid the foundation for investigating the role of leadership in other fields, including, in the particular case of this research, the qualities that a school leader should cultivate. In this sense, the Chilean Ministry of Education (MINEDUC) in 2019, through its document titled *School leadership: recognizing the types of leadership*, indicated the following:

School leaders are the first people to lead an institution and are identified through the development of a shared and beneficial vision for their schools through a process of influence that allows them to achieve the desired objectives, as well as articulating and sharing this vision. that they have at every opportunity that presents themselves (p. 196).

In other words, a leader bases his decision making on the preparation, training and experience he has to face institutional challenges. This makes it a critical factor, since its way of acting will condition the result to improve or violate school processes, which will ultimately end up affecting student learning in some way.

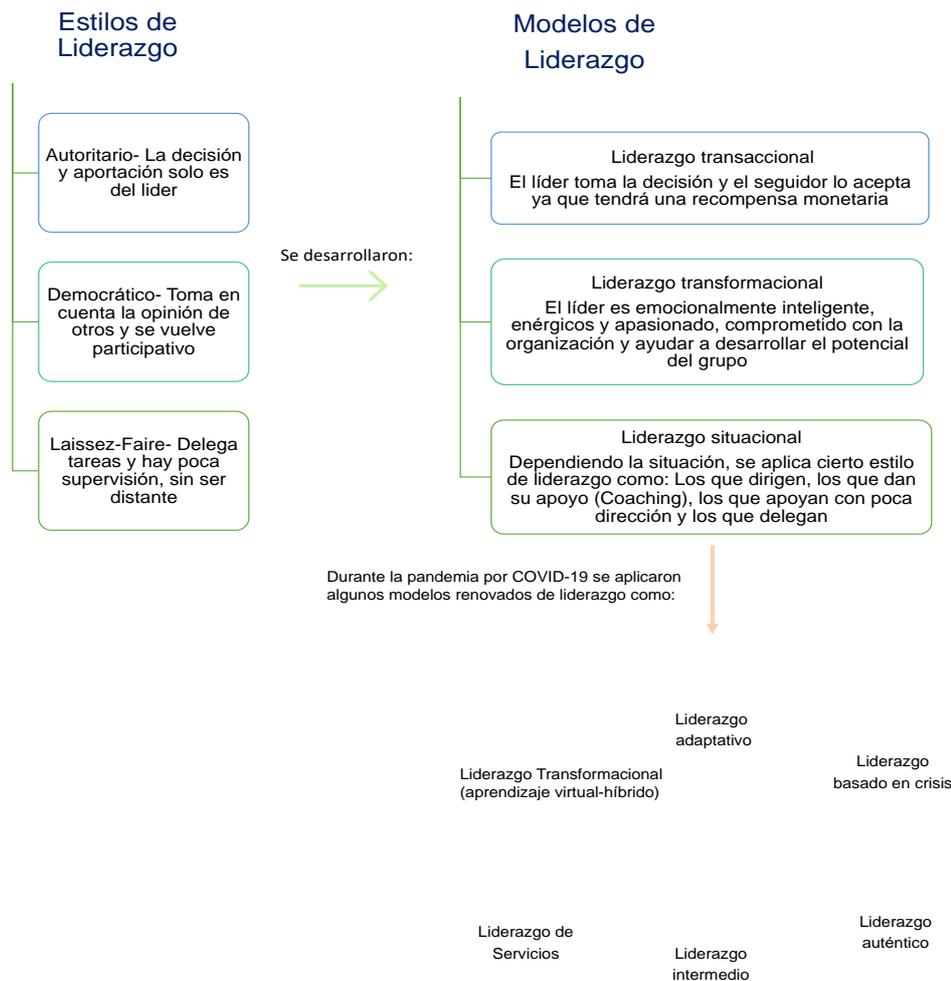
Now, although there is various research focused on school leaders, innovative studies are required that focus on the needs of the current context. Therefore, it is important that school leaders are updating themselves to leave behind traditional models (such as authoritarian, democratic and *laissez faire*, to name a few), which, although they worked in other times, now must be renewed to face social transformations.

This panorama was clearly manifested in the changes implemented in various educational institutions in response to the pandemic. At this juncture, deficiencies in the training and training of some school leaders were revealed. In other words, these change agents were not prepared to face such a disruptive situation that affected nationally and internationally. Suddenly, they found themselves in the position of having to develop crisis strategies without having previously experienced a situation of such magnitude. Furthermore, the rapid response by governments and education systems to not disrupt education around the world put these school leaders in the spotlight, as their decisions had a direct impact on student performance.

Therefore, it is essential to reiterate the importance of continuous training for school leaders. This training process must be constant, based on study, training and experience, and must be adapted and updated in response to changes in the educational environment. By incorporating these key characteristics in the training of educational leaders, we will be able to have qualified personnel to lead educational institutions. This implies the need to develop flexible leadership processes in the educational system, which strengthen the ability to analyze and understand the environment, and which facilitate organizational adaptation to effectively confront threats and opportunities (Robles et al., 2013).).

Therefore, there is a need to adapt the various traditional leadership styles and models. In some cases, it may be relevant to preserve their essence, such as the democratic style that promotes participation and collaborative decision-making with the work team. However, the pandemic has made it clear that a leader should not stick to a single leadership style or model. Instead, you should be able to apply different styles or patterns depending on the context you are in. This implies the transition towards more updated leadership models, adapted to the structure of each educational organization, with the aim of improving both administrative and teaching-learning processes to achieve organizational success. This is illustrated in figure 1.

Figure 1. School leadership styles and models, before and during the pandemic



Source: Own elaboration

Figure 1 illustrates the evolution of school leadership, from the adoption of styles previously more common in the business environment and its adaptation to the educational context. Subsequently, various leadership models were developed, taking as reference the principles inherent to educational systems. During the pandemic, some leadership models were implemented and adapted, such as adaptive-transformational (focused on virtual learning), crisis-based, authentic, service, and intermediate. These models played a fundamental role in the support provided by school leaders during the management of the covid-19 crisis, allowing the continuity of distance education.

It is important to consider that, during the health crisis, governments, educational systems and school leaders in various parts of the world came together to implement strategies mainly aimed at student learning. This gave these change agents the opportunity to identify and implement actions most appropriate at that time. Despite the difficulty of the situation, the majority of these leaders relied on their work teams, improving relationships and

communication with administrative staff, and especially with teachers, who worked tirelessly to keep the institutions functioning.

However, it is important to highlight a specific distinction in the case of school leaders in higher education institutions (HEIs) in Mexico, as they have a different role compared to other educational levels, since they must focus on the well-being of all the people who work in the institution, as well as the specific processes and methods of each educational center. Furthermore, they have the responsibility of ensuring the well-being of society as a whole, which implies a synergy with each member of the university, with a particular emphasis on the crucial role of teachers. By being in charge of students and assuming the role of trainers, teachers must impart the knowledge, skills, attitudes and values necessary for young people to make informed decisions (Sierra, 2016) and carry out responsible actions to benefit the environment, sustainable economy and a just society.

Therefore, leaders at some universities chose to address the health crisis based on their training, skills, knowledge and experiences. This involved adopting different leadership styles and models and combining methods, plans and strategies to achieve the goal of training the next generation of professionals. Thus, the importance of teachers at this educational level was highlighted and work was done to improve communication and relationships with these key actors, although greater participation of teachers in management and decision-making at the level is still required. management, with the hope that this will develop in the post-covid era.

In this perspective, during the pandemic, the joint effort of all the main actors in educational organizations was observed to keep teaching-learning ongoing, without neglecting the health aspect. According to documented studies, health became a factor that impacted the academic and work performance of some members of the educational community at this level (Torres *et al.* , 2021).

Background

Research on changes in school leadership during confinement due to covid-19

Next, national and international research on the practice of school leadership in different educational centers and levels is presented with the aim of analyzing the strategies implemented by these agents of change. For example, McLeod (2020) highlights some key strategies deployed by school leaders and their teams during the transition to online education, organized into four phases. In the first phase, they focused on addressing basic needs, such as ensuring all students had internet access and appropriate devices. For those who lacked these resources, the university provided computer equipment , ensuring that all students had the necessary means to continue their learning. Additionally, the school leader and his team were concerned about

the well-being of the students' families, recognizing that this could affect their academic performance or their decision to abandon their studies.

The second phase focused on training teachers in new pedagogies and technologies. Instructions were provided on the use of digital platforms to facilitate online learning. In the third phase, more emphasis was placed on identifying effective learning opportunities for students, based on the results of the previous phase and the evaluation of progress in teacher training.

Finally, in the fourth phase, a reconstruction and adaptation stage was carried out. At this point, the school leader adopted a transformational leadership model that adapted to the crisis situation, creating what could be called crisis-based leadership. This leadership style was based on transformational leadership principles and allowed the leader to review and adjust each action implemented. He then shared experiences and results with other school leaders to help other institutions better prepare for future disruptions to education.

Importantly, the main contribution of McLeod's (2020) research was the adoption of an adaptive and crisis-based leadership model by the school leader. Both styles share the characteristic of operating in situations of uncertainty. According to Serrano-Prato (2020), this implies that the leader must raise awareness in his work team about the uncertain nature of the situation, for which the development of new skills is required to make each member of the institution feel safe and confident in their actions, as well as effective and caring two-way communication to deal with unusual situations.

In the context of the post-covid era, it is essential to stay the course and reinforce the actions that benefited educational institutions through the evolution of processes, methods and innovation strategies, which leads to continually perfecting practices until educational success is achieved.

In the context of these investigations, a study carried out by Rigby *et al.* (2020) collected information through thirteen interviews with various school leaders who were part of central offices in seven districts in the Puget Sound, Washington area. This study identified that these school leaders, in collaboration with their management teams, implemented three critical practices during the pandemic in these districts' school systems.

The first practice focused on building trust, achieved through two-way communication with students and, especially, parents. This was carried out with the aim of avoiding any form of marginalization, considering that in these communities there are diverse cultural contexts. This strategy encouraged student participation and facilitated adaptation to the digital platforms used by schools.

In the second practice, a flexible learning approach was implemented with the support of teachers, for which an adaptation of the teaching methods was carried out, considering the

individual strengths and needs of each student and their family. In this sense, a diagnosis of the communities in the seven districts was developed to identify those students who lacked the necessary resources for online learning, and they were provided with the necessary tools. Furthermore, this practice encouraged the development of critical thinking and conceptual understanding through the specific situations that were being experienced in education at that time due to covid-19 with the purpose of taking advantage of these opportunities and offering high-quality education to students. students.

The third and final practice involved meetings in which school leaders, along with their management teams, included union representatives, change agents from other institutions, teachers, and some parents. At these meetings, online forums were created so that participants could share their comments and questions. These formal processes were carried out with a focus on equity and were designed to maintain online collective bargaining.

Related to the above, these school leaders implemented initial changes with the common purpose of continuing the education of students. Furthermore, it should be noted that they made an effort to create a safe environment for both students and parents, and not only for these two groups, but also for representatives of the educational system and, above all, for teachers. This allowed them to feel valued and essential to progress in schools.

In essence, this study highlights the transformation that school leaders experienced to make decisions that promoted the integration of each main actor, which led to coordinated, coherent and inclusive processes in each of the communities of these educational institutions. This change was characterized by a transition from transformational leadership to adaptive leadership. Although both share similar foundations, adaptive leadership is distinguished by operating in times of uncertainty.

The above supports Serrano-Prato's (2020) statement about adaptive leadership, who places emphasis on the behavior of the individual who exercises leadership instead of focusing on the person themselves. In other words, leaders who follow this model have the ability to transmit trust, respect and motivation through effective communication and involving all the main actors. In the new normal or post-covid era, the integration of each member of educational institutions by school leaders becomes essential. Therefore, it is essential that these leaders make all educational members feel safe and stable with respect to the decisions that are made for the development and growth of the school.

On the other hand, the research carried out by Ramos-Pla *et al.* (2021) aimed to analyze personal leadership resources (PLR) in school leaders of primary schools in Catalonia, Spain. The study sought to determine the differences in the attitudes and behaviors used before and during the pandemic.

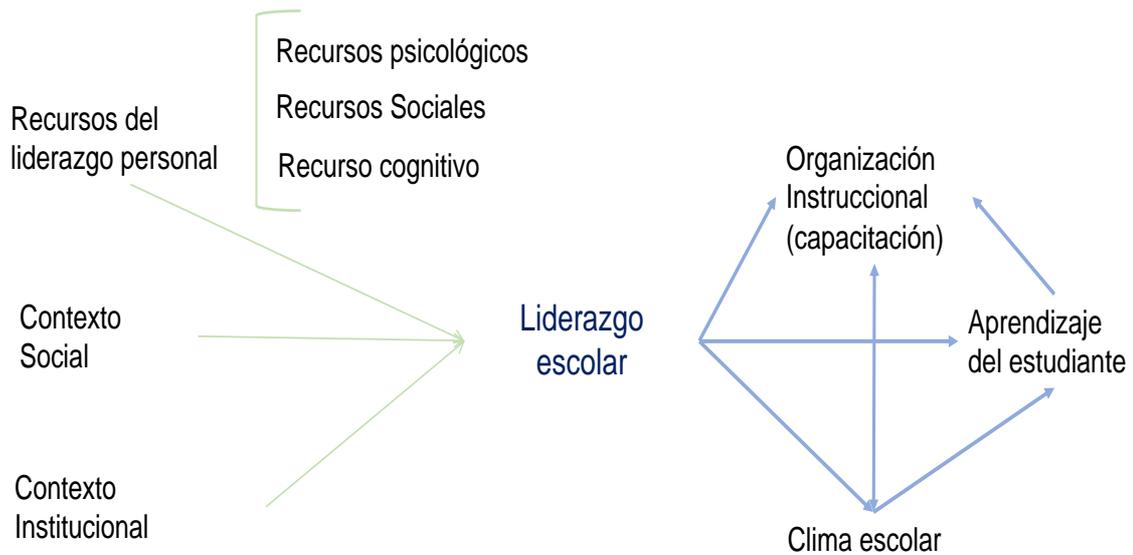
The results revealed that, before confinement, the most common behaviors were resilience, followed by proactivity and optimism (the latter two equally applied), along with social awareness and systems thinking. This indicated that school leaders were managing effectively, enabling effective communication and decision-making that kept staff motivated and facing challenges with confidence, based on their experience and training.

However, leaders were aware of their difficulties and lack of training in some aspects of personal leadership, which became evident during confinement. Consequently, the same factors were evaluated before and during the pandemic. During this period, proactivity was the most used behavior, followed by resilience and systems thinking, along with social awareness.

In contrast, emotional intelligence saw a decline during lockdown, and optimism, which previously ranked high, dropped significantly, showing the largest decline among personal leadership resources during the pandemic. This reflected that the perception of the effectiveness of these resources decreased in all cases compared to the period before the pandemic.

In summary, the least used personal leadership resources before and during the Covid-19 crisis were independent problem-solving efficiency and self-awareness, both of which were already underdeveloped before the pandemic and worsened during lockdown. The substantial decrease in optimism is especially worrying, since specialized literature highlights the importance of optimism and personal development skills for adequate and effective leadership, especially in the economic, political and sociocultural context in which educational institutions operate. The comprehensive development of each member, including psychological, social and cognitive aspects, is crucial in this environment, and school leaders must understand their institutional and social context, as illustrated in Figure 2.

Figure 2. Model-influence of the context from the PLR exercised by the directors



Source: Translated from English *Leadership in times of crisis. School principals facing COVID-19*. Adapted from Hallinger (2018); Harris *et al.* (2019), Hoogsteen, (2020) and Ramos-Pla *et al.* (2021). <https://doi.org/10.1016/j.heliyon.2021.e08443>

As illustrated in Figure 2, school leaders have a variety of resources in their personal leadership, so it is essential that they have a deep understanding of the context in which educational institutions operate, particularly with respect to the social sphere. and institutional. In addition, they must understand changes in the economic, political and sociocultural spheres, since these influence various aspects of both school leaders and other members of the educational community, including psychological, social and cognitive factors that are ultimately reflected in the school climate, organizational structure and student learning process.

It is also worth noting that after the crisis many school leaders experienced greater vulnerability and a decrease in their level of optimism and self-efficacy. Therefore, to achieve effective leadership, it is essential to involve all the main actors in the school, as well as pay special attention to personal development to strengthen decision-making capacity, foster motivation, resist changes, build confidence and delegate responsibilities to cultivate the collaboration of all members of the institution.

This aligns with what Bagwell (2020) points out, who points out that the pandemic “is rapidly redefining schooling and leadership” (p. 31), which is why he advocates that principals lead adaptively, build resilience both to organizational and individual level, and establish distributed leadership structures to achieve an optimal institutional response.

School leadership towards teachers during the pandemic

Considering the above, the importance of the role played by teachers in educational management is highlighted. Each research addressed has emphasized the initiative of school leaders to continuously train and update teachers. Although this resolution occurred as a result of the pandemic, it was also evident that, to achieve positive advances in teaching processes and methods, it is essential to have the active participation of teachers in decision-making, especially with regard to adjustments in the pedagogical field within the educational center, since they require the support of the school leader to prioritize relevant topics based on the context in which they operate. This allows optimizing the time dedicated to teaching-learning and promoting institutional objectives, while training students with the skills and competencies necessary for the world of work.

Following Hallinger's (2012) explanation, the use of middle leadership by school leaders is essential. This approach provides teachers with the opportunity to take on a leadership role and promote a school culture that shares the organization's core values and beliefs, which support the school's strategic goals. This involves prioritizing the content and development of the most relevant and up-to-date skills in the curriculum, planning instruction based on data analysis on student learning progress, and adopting mechanisms to make the most of classroom teaching time while An appropriate learning climate is fostered.

In this sense, the research carried out by Auliah *et al.* (2021) acquires great relevance by highlighting the importance of school leaders and teachers during the pandemic. In their study, they explored the causal links between the perspectives of school leaders and teachers in Malaysia regarding positive school attributes (Yin, 2018) . To do this, they used the PERMA model (*positive emotions, engagement, positive relationships, meaning and fulfillment*), an approach widely supported by various international research to measure well-being as a multidimensional construct (Norrish *et al.* 2013; Kern *et al.* 2015; Ryan *et al.* , 2019; Wagner *et al.* , 2020).

The research identified six emerging themes: 1) stimulating positive emotions; 2) encourage positive engagement; 3) promote positive relationships; 4) cultivate positive meaning; 5) encourage positive achievements and 6) cultivate spiritual precept to express positive school attributes. Ultimately, the study highlighted the need to establish psychological commitment, creating a sense of connection and belonging between school members and parents, which contributes to cultivating commitment and maintaining quality teaching, even in through disruptive changes in the environment, as was the case with the covid-19 pandemic.

In other words, to achieve positive progress it is essential that each member of the school be fully integrated. Each school leader must deploy strategies that motivate their staff to generate positive emotional states while they perform their tasks in the institution. This will

help build trust and promote effective and affective communication, which, in turn, will encourage all key actors to contribute to achieving the objectives. In the case of teachers, it also allows them to transmit the school's mission and vision to students, which is crucial for institutional success.

To support this, it is pertinent to analyze the study carried out by Zepeda *et al.* (2020) in which the strategies implemented during the pandemic in the educational centers of the National Polytechnic Institute (IPN) in Mexico are described. These strategies were established primarily by the Undersecretary of Higher Education (SES) and were based on the collaboration of school leaders to support teachers in the transition to virtual learning. This underlines the importance of training teachers, especially in decision-making and the use of technological means, allowing greater flexibility in their teaching methods, always in compliance with IPN regulations.

The implementation of pedagogical tools, resources and materials to improve access to educational content stands out. This includes object-language and the project-based learning (PBL) methodology. Language objects refer to resources that develop essential communication skills, such as oral discourse, writing, reading comprehension and listening. PBL is a teaching model that is based on critical thinking, communication, collaboration and creativity, promoting teaching for transfer and learning in real-life contexts.

These strategies not only benefit teachers and students, but also provide feedback for the fulfillment of institutional objectives, since students develop essential competencies to face the challenges of the 21st century, which is combined with a hybrid modality.

In summary, to improve education at the IPN in the post-covid era, it is necessary to put into practice the characteristics of the institute's educational model and the skills necessary for the 21st century in both teachers and students. This requires the implementation of various strategies, which include the use of a variety of resources, virtual platforms, content, methods and strategies. The objective is to achieve significant learning, promote the transmissibility of knowledge and stimulate creativity and innovation through teamwork. This will allow us to address the challenges of the real world and the current context. Implementing PBL-based objects and language requires a change in attitude, a willingness to learn and communicate, and acceptance that learning is an ongoing process. To do this, school leaders must support these innovative processes together with other key actors in the educational organization to guarantee quality education.

Ultimately, any modification aimed at promoting the progress and development of schools depends largely on the initiative of the agents of change, followed by the collaboration of all members of the educational community. However, the contributions of faculty are especially crucial, requiring each member to share a common goal and work as a team to

achieve the institution's mission and vision. In this way, human talent is formed that receives a high-quality education, which leads the school to stand out and become a reference both nationally and internationally in the educational field.

Study in the postcovid era

A study carried out by Bolívar *et al.* (2022), titled *Educational leadership in times of crisis, learning for the post-covid school*, examines the experiences of 28 educational actors in schools and their managerial leadership in six Latin American countries: Argentina, Costa Rica, Chile, Brazil, Peru and Portugal. The objective was to highlight some of the actions that arose as a result of the pandemic, identifying the elements that should last and those that should not. This study highlights the competitive advantage that emerged as a result of covid-19 by creating opportunities for change towards a more comprehensive, humane, flexible and relevant education for today's society.

It was concluded that one of the negative effects left by the pandemic was emotional instability in both school leaders and other members of the school. Therefore, addressing this emotional state becomes a priority in the work of schools in the post-pandemic era. In addition, the importance of optimizing the strategies that were successful in the management of different school leaders during the health crisis is highlighted, which will allow better actions to be developed in the post-covid period.

In this regard, various strategies continue to be applied by school leaders in the post-covid era, as mentioned by Eos *et al.* (2021), Harris and Jones (2021) and Bolívar *et al.* (2022) in some countries. In fact, socio-emotional stability has been established as a permanent practice, with a special focus on students to ensure quality education. The studies available so far show significant modifications in school leadership practices in this new scenario, including adaptation to distance education, greater collaboration with other change agents to address common problems, and an increase in technical and emotional support to the teachers.

In summary, it is essential to prioritize teaching the practices that have proven to be effective for school leaders during the pandemic, adapting and adjusting them, especially those that resulted from the combination of different leadership styles and models. Although each model is applicable in specific situations, the trend towards combining models allows for greater adaptation and ultimately produces more effective results and changes for the benefit of education in today's society in the post-covid era.

Discussion

After an exhaustive analysis of school leadership, which covered its conceptualization and characteristics, as well as the examination of various research on the strategies used by school leaders in Mexico, Peru, Spain, Malaysia and the United States during the pandemic, the conclusion has been reached. conclusion that the majority of these change agents did not have adequate training to manage institutions in the midst of a health crisis. Even the educational systems of several countries were overwhelmed by the magnitude of the crisis caused by the covid-19 virus.

This corroborates what was pointed out by McLeod and Dulsky (2021), who highlighted that the pandemic posed an unprecedented challenge for school leaders, which tested the capacity of most of them to face a crisis of such magnitude, as well as the adequacy of educational systems around the world. During lockdown, it became clear that while school leaders were aware of their capabilities and limitations before the pandemic, their perception of their resources and their effectiveness diminished. This highlighted the lack of capacity for an immediate solution, which affected their optimism, an essential element for adequate and effective leadership (Ramos-Pla et al ., 2021).

Although a leader is the figure who directs, guides and makes decisions in educational institutions, it is essential that these agents of change continue to update themselves in new management practices focused on the participation of all members of the educational field with the purpose of promoting the objectives. organizational, especially the training of excellent human talent. This approach is similar to the perspective proposed by MINEDUC (2019), which highlights how school leaders, by leading with a shared vision and a process of influence, are at the forefront of institutions and continually work for the benefit of their schools, articulating and sharing this vision at every opportunity that presents itself.

Therefore, various research highlights the importance of focusing on the training of these change agents and providing them with the necessary tools to develop high-quality school leaders. This is achieved through continuous training in various topics, such as problem solving in or without crisis situations, making quick and timely decisions, promoting teamwork to integrate all the center's key actors. educational, promoting motivation and emotional intelligence to generate trust, improve effective and affective communication, and transmit the actions that will be carried out to achieve the objectives of the institution.

Furthermore, it is essential that these school leaders employ leadership models that adapt to their style and the context in which they operate as illustrated in Figure 1, choosing to combine approaches such as adaptive leadership, crisis-based leadership, updated service, the authentic and the intermediate. Likewise, the importance of each of these models and the need

to adjust to the current environment is highlighted, which allows them to improve and involve each member of the educational community. This is achieved through new management practices that encourage participation in decision-making, which contributes to the consolidation of knowledge and experiences that benefit, first, the development of human talent and, subsequently, the management process. organizational as illustrated in Figure 2. This aligns with the view presented by Rigby *et al.* (2020), which emphasizes that improvement in school management requires changes in planning processes, coordinated and coherent decisions, in addition to inclusion around a shared vision of learning, using formal processes and tools driven by the equity.

On the other hand, it is essential to consider the role of teachers in school leadership, especially in the context of the pandemic, since each research emphasizes the initiative of school leaders to constantly train and update teachers. Although this resolution was made in response to the pandemic, it was also evident that, to achieve positive advances in teaching processes and methods, it is essential to have the participation of teachers in decision-making, particularly with regard to adjustments in the pedagogical area in the educational center. To do this, they require the support of the school leader to prioritize relevant topics according to the context in which they are developing and to optimize the time dedicated to teaching-learning. All of this leads to the creation of synergies and the promotion of institutional objectives in students, while at the same time forming human talent with the skills and competencies necessary for working life.

Keeping in mind that the pandemic caused significant changes in all schools around the world, ranging from the way they relate to members of the institution to the methodology used to address this situation, today's school leaders have the responsibility to identify and recover the strategies and actions that allowed education to be kept going. Likewise, they must promote the return to classrooms with projects that adjust to the current context, while promoting the capacity for adaptation and emotional stability, both in crisis situations and in times of normality.

In other words, to achieve positive progress it is essential that the integration of all members of the educational community be promoted. Each school leader must disseminate strategies that motivate their staff and cultivate positive emotional states during their work at the institution. This, in turn, will promote trust and allow for effective and caring communication, which will contribute to the achievement of institutional objectives. Additionally, in the case of teachers, it will allow them to transmit the mission and vision of the school to the students to ensure institutional success.

In this context, the importance of innovating and updating the training of current school leaders to become role models for future generations of change agents is recognized. However,

empirical studies on the exercise of school leadership and changes in the post-covid era are still pending. In this new scenario, opportunities for improvement and changes in school management have been identified that aim at quality education and that promote better relationships and communication between the various collaborators of the educational community.

Conclusions

Based on the results obtained in research on the exercise of school leadership and the strategies used by some school leaders during the pandemic in countries such as Mexico, Peru, the United States, Spain and Malaysia, key factors have been identified that transformed the way in which these change agents managed their institutions. This involved taking on new responsibilities for virtual education, while striving to keep all members of the educational community safe and emotionally stable. In this way, they were encouraged to maintain productivity, develop resilience, encourage systemic thinking and promote social awareness.

As for students and their families, school leaders focused on meeting their basic needs for distance learning. This included providing the necessary equipment to ensure Internet access. In addition, leaders and teachers were concerned about the well-being of the students' families, since it was recognized that this could influence their academic performance and even their decision to abandon their studies. To address this issue, two-way communication was maintained with the objective of generating trust between students and parents, so that any form of marginalization based on the different cultural contexts present in the communities was avoided. This also allowed the active participation of students in their learning process and facilitated the use of digital platforms provided by educational institutions.

In addition, school leaders held meetings with their management teams, which were joined by union representatives, change agents from other institutions, teachers and some parents. Some leaders even created online forums for comments and questions, promoting a formal process supported by equity for the purpose of maintaining remote collective bargaining. This approach focused on paying greater attention to the most effective learning opportunities for students. Thus, the results of the implemented actions and the progress in teacher training were evaluated, which underlined the importance of these educational members.

Regarding the academic function, school leaders prioritized training teachers in new pedagogies and technologies, for which they provided varied instructions for the use of digital platforms that facilitated online learning, implementing a learning design approach. flexible. With the support of change agents and teachers, teaching methods were adjusted to address each student's individual strengths and needs. Likewise, the development of critical thinking

and conceptual understanding was evaluated through the situations experienced in education in the context of covid-19 with the aim of taking advantage of these opportunities to provide high-quality education to students.

It is also important to highlight some pedagogical tools, resources and materials that school leaders and teachers used to improve access to content, such as language objects and the project-based learning (PBL) methodology. Additionally, school leaders applied a variety of leadership styles and models, including situational, democratic leadership, and, with significant emphasis, servant, authentic, and intermediate leadership. They also adapted to updated models such as adaptive (transformational) and crisis-based leadership, developing the necessary skills to face the challenges derived from the pandemic.

It is important to note that while new skills were developed in school leaders and key members during the pandemic, there was also a marked decline in optimism, which raises significant concerns as the literature highlights the importance of optimism and personal growth for effective and adequate leadership.

Finally, it is evident that more research is needed to identify new actions that contribute to improving education and to help leaders adapt each measure to their specific context. This, of course, does not depend solely on these agents of change, as reforms in each country's educational systems will play a crucial role in achieving improvements in education. Despite this, it is essential that school leaders practice new ways of motivating their staff, seeking to generate positive emotional states in them during their time at the institution. In the case of teachers, this attitude will also translate into the successful transmission of the school's mission and vision to students, which in turn will contribute to institutional success.

Future lines of research

It is suggested that future research on the exercise of school leadership address the topic from the perspective of the post-covid period, specifically empirical studies on the training of agents of change in the new normal, with emphasis on their experiences from the beginning of the pandemic to date. . These works could be carried out through interviews with various school leaders at a higher level, since they play a fundamental role in higher education institutions. Their responsibility involves transmitting principles related to the well-being of all the people who work in the institution and managing processes that benefit society through the training of human talent of excellence, equipped with the necessary skills to face the challenges both in the field work and in the community.

To achieve this, it would be advisable to obtain the testimony of these leaders, focusing on questions such as the following: what actions implemented during the pandemic have been maintained and why? How has the management of school leaders evolved in the post-covid

era? How have study plans and teaching-learning methodologies changed in this period? How has the dynamic of who teaches, what they teach, and where they teach changed today? What evidence is used to evaluate the learning achieved? How has the learning process for teachers and students evolved with the incorporation of technological tools in the post-covid era? The information collected from these questions could be used to design educational management proposals that strengthen school leadership in the post-covid era and identify new areas of opportunity to improve the organizational environment.

Furthermore, the experiences of school leaders could be complemented with the teaching strategies and methods that teachers applied during the pandemic with the support of these agents of change, which would allow highlighting those strategies that contributed to the advancement of education and seeking ways to improve them in the post-covid era.

References

- Auliah, A., Thien, L., Kho, S., Abd Razak, N., Jamil, H. and Ahmad, M. (2021). Exploring Positive School Attributes: Evidence from School Leader and Teacher Perspectives. *Journal SAGEOpen*, 11 (4). <https://doi.org/10.1177/215824402111061572>
- Bagwell, J. (2020). Leading through a pandemic: adaptive leadership and purposeful action. *Journal of School Administration Research and Development*, 5 (1) , 30–34.
- Bolívar, A., Muñoz, G., Weinstein, J. and Domingo, J. (2022). *Educational leadership in times of crisis, learning for the post-covid school* . University of Granada Publishing House. https://editorial.ugr.es/libro/liderazgo-educativo-en-tiempos-de-crisis_139182/
- Cifuentes-Medina, E., González-Pulido, W. and González-Pulido, A. (2020). Effects of school leadership on learning. *Magazine Panorama*, 14 (26), 78–93. <https://doi.org/10.15765/pnrm.v14i26.1482>
- Díaz, J., Ledesma, M., Tito, J. and Díaz, L (2021). Management skills in a context of health emergency, COVID-19 in Peru. *Venezuelan Management Magazine* , 26 (5), 505-519.
- Eos, J. (2021). Teacher satisfaction and burnout during COVID-19: what organizational factors help. *International Journal of Leadership in Education* . <https://doi.org/10.1080/13603124.2021.2006795>
- Hallinger, P. (2012). *School Leadership that Makes a Difference: Lessons from 30 Years of International Research* . Rome, Ministry of Education.
- Harris, A. and Jones, M. (2021). Leading in disruptive times: a spotlight on assessment. *School Leadership & Management* , 41 (3), 171-174. <https://doi.org/10.1080/13632434.2021.1887643>

- Kern, M., Waters, L., Adler, A. and White, M. (2015). A multidimensional approach to measuring well-being in students: Application of the PERMA framework. *The Journal of Positive Psychology*, 10 (3), 262–271. <https://doi.org/10.1080/17439760.2014.936962>
- McLeod, S. (2020). Rising to the challenge and looking ahead: school leadership during the pandemic. *Journal UCEA*, 61 (2), 17–19.
- McLeod, S. and Dulsky, S. (2021). Resilience, Reorientation, and Reinvention: School Leadership During the Early Months of the COVID-19 Pandemic. *Journal Frontiers in Education*, 6 . <https://doi.org/10.3389/educ.2021.637075>
- Ministry of Education of Chile (MINEDUC). (2019). Tool guide for the development of personal resources in management teams. Tool 2. School leadership: recognizing types of leadership. *General Education Division*, 2 (9.1). <https://hdl.handle.net/20.500.12365/14511>
- Norrish, J., Williams, P., O'Connor, M. and Robinson, J. (2013). An applied framework for positive education. *International Journal of Wellbeing*, 3 (2), 147–161. <https://doi.org/10.5502/ijw.v3i2.2>
- Ramos-Pla, A., Tintoré, M. and Del Arco, I. (2021). Leadership in times of crisis. School principals facing COVID-19. *Journal Heliyon*, 7 (11), 08443. <https://doi.org/10.1016/j.heliyon.2021.e08443>
- Rigby, J., Forman, S., Foster, L., Kazemi, E., and Clancey, S. (2020). Promising District Leadership Practices for Transformative Change in the Context of COVID- 19. <https://education.uw.edu/sites/default/files/pdf/Promising-Leadership-Practices-Brief.pdf>
- Robles, V., Contreras, F., Barbosa-Ramírez, D. and Juárez, F. (2013). Leadership in Colombian managers vs. Mexicans. A comparative study. *Research and Development Magazine*, 21 (2), 395- 418. <https://www.redalyc.org/articulo.oa?id=26828939004>
- Ryan, J., Curtis R., Olds, T., Edney, S., Vandelanotte, C., Plotnikoff, R. and Maher, C. (2019). Psychometric properties of the PERMA profiler for measuring wellbeing in Australian adults. *PLoS One*, 14 (12), e0225932. <https://doi.org/10.1371/journal.pone.0225932>
- Serrano-Prato, G. (2020). Educational Leadership in post-pandemic times: Key contributions from an educational philosophical perspective. *Saberes Andantes Magazine*, 3 (7), 48–68. <https://doi.org/10.53387/sa.v3i7.58>
- Sierra, G. (2016). Educational leadership in the 21st century, from the perspective of sustainable entrepreneurship. *School of Business Administration Magazine*, 1 (81), 111–128. <https://doi.org/http://dx.doi.org/10.21158/01208160.n81.2016.1562>

- Torres, A., Pérez, L., López, A. and Toro, J. (2021). Educational policy implemented following the COVID-19 health emergency at the higher education level. *Magazine Polytechnic Teaching*, 2 (6), 25-39. <https://www.ipn.mx/assets/files/innovacion/docs/docencia-politecnica/docencia-politecnica-6/Politica-educativa-implementada-a-partir-de-la-emergencia-sanitaria-por-COVID-19-at-the-level-of-higher-education%20.pdf>
- Wagner, L., Gander, F., Proyer, R. and Ruch, W. (2020). Character strengths and PERMA: Investigating the relationships of character strengths with a multidimensional framework of well-being. *Applied Research in Quality of Life*, 15 (2), 307–328. <https://doi.org/10.1007/s11482-018-9695-z>
- Yin, R. (2018). *Case study research and applications: Design and methods* (6th^{ed.}). Thousand Oaks, CA: Sage.
- Zepeda, M., Benítez, A., and Cardoso, E. (2020). The future did not wait for us. *Polytechnic Teaching Magazine*, 1 (5), 44-47. <https://www.ipn.mx/assets/files/innovacion/docs/docencia-politecnica/docencia-politecnica-5/El-futuro-no-nos-espero.pdf>

Contribution Role	Author(s)
Conceptualization	Marlett Jasmin (same) Edgar Oliver (same) Erick Daniel (same)
Methodology	Marlett Jasmin (same) Edgar Oliver (same) Erick Daniel (same)
Software	Marlett Jasmin
Validation	Edgar Oliver (same) Erick Daniel (same)
Formal Analysis	Marlett Jasmin (same) Erick Daniel (same)
Investigation	Marlett Jasmin (same) Edgar Oliver (same) Erick Daniel (same)
Resources	Marlett Jasmin (same) Edgar Oliver (same) Erick Daniel (same)
Data curation	Marlett Jasmin (same) Edgar Oliver (same) Erick Daniel (same)
Writing - Preparation of the original draft	Marlett Jasmin (same) Edgar Oliver (same) Erick Daniel (same)
Writing - Review and editing	Marlett Jasmin (same) Edgar Oliver (same) Erick Daniel (same)
Display	Marlett Jasmin (same) Edgar Oliver (same) Erick Daniel (same)
Supervision	Erick Daniel
Project management	Marlett Jasmin
Fund acquisition	Edgar Oliver