

Mehr Bakht*

Salma Nazar Khan[†]

Gerardo L Blanco‡

21st Century Leadership Skills Practiced by School Leaders in Pakistan During COVID-19 Pandemic

Abstract 21st-century leaders need strong leadership skills to effectively lead schools. They must use and implement 21st-century skills for long term change. The study aimed to identify the practices of secondary school leaders of Rawalpindi city about [recommended] 21st century 4 Cs leadership skills (Competence, Character, Compassion & Courage) during the pandemic of Covid-19. This was exploratory research following the quantitative research approach. One hundred and nine school leaders were selected through a simple random sampling technique to complete an adapted survey questionnaire. Descriptive statistics were used for analyzing and reporting the findings. Quantitative data analysis indicates that school leaders are using 21st-century leadership skills. It was identified that school leaders use relationship (mean= 4.21), Accountability (mean= 4.45), and Self-Belief (mean= 4.37) skills more than other sub-skills in their leadership practices. The findings recommended leadership skills for school leaders so they can perform well under situations like Covid-19.

Key Words: 21st Century Leadership Skills, School Leaders, and Practices

Introduction

The 21st-century life has become more interconnected, international, and success in the workplace and education needed new skills (Suto, 2013). School leadership has been shifted dramatically towards network practices through collaboration and communication during the current pandemic (Harris, 2020). The success of every institution or organization heavily relied on the skillfulness of leaders that created pressure on school leaders to act with agility more than before (Johnson & Weiner 2020). 21st-century educational leaders need strong leadership skills to be effective. They must use and implement 21st-century skills for long term change (Talat, Fakhar, &Chaudhry, 2014). Leadership is a phenomenal task, which demands some special training and also updated skills to effectively run both non-human and human resources including emergent situations such Covid-19 (Azorin, 2020; Akinbode & Shuhumi, 2018). Now, as a consequence of the pandemic, the duties and responsibilities of school leaders have been changed. For example, leaders became more accountable for the equitable delivery and access of teaching-learning (Zhao, 2020).

However, leadership has confronted various changes and challenges in the 21st century and yet nevertheless faced systemic disruptions during Covid-19. In such moments, we need leaders who are motivated, ready to take risks and possess new vision and skills (Johnson & Weiner 2020; <u>Harris, 2020</u>). According to <u>Piaw</u>, <u>Hee</u>, <u>Ismail</u>, and <u>Ying (2013</u>), leadership skills can show the difference between effective and ineffective schools. <u>Dede (2009)</u> stated that training of 21st-century skills is one of the most important needs of every individual, but it is still neglected in the professional development of school leaders. According to more recent research, school systems in the 21st century is different than in past centuries (<u>Harris, 2020</u>). Trends are changed now such as globalization, technology, rising enrolment, accountability and now in a current situation like covid-19 that calls diversification of leadership skills and strategies from the school leaders to administered which could help to achieve objectives and goals of schools during a pandemic (Johnson & Weiner, 2020; <u>Akinbode & Shuhumi</u>, 2018).

^{*}Visiting Faculty, Department of Education, Fatima Jinnah Women University, Rawalpindi, Punjab, Pakistan. Email: <u>mehrbakht92@gmail.com</u>

[†]Assistant Professor, Department of Education, Fatima Jinnah Women University, Rawalpindi, Punjab, Pakistan. [‡]Academic Director, Center for International Higher Education. Boston College, USA.

Citation: Bakht, M., Khan, S. N., & Blanco, G. L. (2020). 21st Century Leadership Skills Practiced by School Leaders in Pakistan During COVID-19 Pandemic. *Global Social Sciences Review, V*(III), 46-55. https://doi.org/10.31703/gssr.2020(V-III).05

According to <u>Harris (2020)</u>, before Covid-19 leadership skills were practiced in school and could be as traditional limited only to ensure productive learning and teaching. But now there has been significant disruption to the system; school leaders often have to spend their time engaging with others virtually. This, in turn, has often led to a change in the practice of leadership; they are managing and leading schools, parents, students, and teachers from home making them remote leaders (Leithwood, Harris, & Hopkins, 2020).

In this Covid-19 pandemic school leaders are doing their best to address the needs of their students, parents and staff. (Harris, 2020). Khan, Asimiran, Kadir, and Basri (2020), stated that according to Pakistan's national education policy school leaders are responsible for overall school improvement. The concept of 21st-century skills is not new in the Pakistani educational system, yet the need of practicing these skills in curricula and education policy is a comparatively recent debate (Talat, Fakhar, & Chaudhry, 2014). There are some leadership and management pieces of training offered and delivered for school leaders in Pakistan. For example, Punjab Education Foundation (PEF) has offered a workshop for school leaders and administrative staff in Rawalpindi. Kohat Line Departments (KPPPRA) held training programs in Peshawar (PAKEDU.Net, 2015).

However, researchers could not find any training that is specifically designed to prepare these leaders for 21st-century skills and the associated challenges. Also, school leaders manage schools in an orthodox way. Research shows that such behavior of school leaders—avoiding the innovative skills—created the major issues during the current pandemic of Covid-19 (Hargreaves, 2020). John (2015) stated that 21st-century skills are required for strategic planning and facing urgent issues to manage change successfully.

In Pakistan, the situation is quite different; school leaders would not deliberately adopt 21st-century skills. It is important to understand the needs of educational leaders and explore their practices on 21st-century skills before designing and implementing such professional development programs. Therefore, this research aimed to explore the practices of Head Masters/ Mistresses/ Principals/In-charge of secondary schools about 21st-century leadership skills in the current pandemic. Given this aim of the research, this study is guided by the major research question: What 21st century 4 Cs skills (Competence, Character, Compassion, and Courage) do school leaders practices in schools during Covid-19 at Rawalpindi City?

Review of Literature

21st Century School Leadership

This world is rapidly changing day-by-day that demand new skills and expertise from leaders. The 21st century is quite different from the 20th century due to the development of sophisticated information and communications technologies (<u>Dede, 2009</u>). Zhao (2020) stated that during Covid-19 education and school leadership roles have been re-designed and re-crafted as technology-enabled online activity. Core functions of schools have dramatically changed, and school leaders have been pressed to the limit.

According to <u>Daniels, Honegger, and Duchy (2019)</u>, because of school leaders' rapidly growing accountability and responsibilities, leadership gained massive attention during the past decade. Now during a pandemic, school leaders are more focusing their leadership skills on engaging others in the collective, shared, and collaborative work that is both urgent and vital (<u>Netolicky, 2020</u>). <u>Pont, Nusche, and Moorman (2008</u>) said that it is a need of today to practice new skills to face new challenges. School leaders having 21st-century skills can build good relationships with others. They can also use different skills for school improvement. Understanding of different skills can help school leaders to enrich their practices to consequently build a positive environment (<u>Piaw, Hee, Ismail & Ying, 2013</u>).

School leaders who could develop and build a positive culture where capabilities can be extended and enhanced are not only successful in developing their team but also deal with the change situation in better ways (Leithwood, Harris & Hopkins2020). Now during a pandemic attaining this in the virtual world is very difficult, but it does need extra effort from school leaders to remain connected with others and sustain the relationship.

21st Century School Leadership Skills

Leadership skills are not only important for a school leader to perform their task efficiently but also to sustain their position in the 21st century. <u>Piaw, Hee, Ismail, and Ying (2014)</u> emphasized that to maintain the effectiveness of the school and to bring a high level of achievement, school leaders require several leadership skills. School leaders serve as captain of the boat in school; they play a role in all aspect of the school system; educator, manager, strategic problem solver, supervisor and learning leader supervisors, barterers, advocators, servant leaders, learning leaders, etc. (Moodly & Toni, 2015).

The skills most important for school leaders are interpersonal skills and the ability to what can, they do with assessable knowledge (Silva, 2009). According to Harris (2005), now the school leaders need such leadership skills that help them to lead their school to success and improve their schools. School leaders have huge responsibilities to perform as they are involved with teachers in different program designs, engage in relaxed design spaces for teachers, students, and parents (Murakami, 2019). Suto (2013) said that the most common skills, which are essential for the 21st century, are interdisciplinary skills, skills related to problem-solving, ICT operations, partnership, and effective communication, and information literacy. This the same skill set that was required by the leaders to deal with the current pandemic of COVID-19. Other research suggested that the task of school leaders is not only to solve problems that are complex or problems that do not occur before in that work setting but while solving the problems leaders must be able to assess the risk worthiness of each alternative and able to pick that alternative solution that is the best possible solution for complex organization setting (Mumford, Marks, Zaccaro & Palmon, 2000).

According to Lunenburg (2010), good school leaders are those who consider the whole school as one unit and solve the problem that is according to the interest of people. School leaders with good leadership skills are encouraged to bring a positive school climate including non-academic and academic performance; students and teachers' attitudes; two-way communication; accountability and relationship between stakeholders (Piaw, Hee, Ismail, & Ying, 2018).

According to <u>Chalkiadaki (2018)</u>, as the 21st century is the era that is majorly categorized by globalization, ICT, and the need for innovation. Therefore, there is a need for highlighting the need for school leaders to adopt relevant competencies and skills. <u>Alvy and Robbins (2005)</u>. emphasized and discussed the importance and advantages of a school leader as an instructional leader and highlighted the significance of a school leader as a cultural leader for achieving the goal and high performance of the school. The role of school leaders is important in controlling and guiding teachers to become professional and also other staff to give the best services for learners (Sudana & Apriyani 2018). Northouse (2012) defined leadership qualities as the qualities that lie in how a leader communicates with his team, which purports that leadership quality concentrated in the communication between his team and leader himself.

Conceptual Framework of the Study

Literature suggests a long list of leadership skills requisite for 21st-century leaders, but in this research study to maintain a focus, specifically seek their practices about the 4 Cs leadership model developed by <u>Rizzo (2012)</u> director of Johnson leadership program at Johnson Cornell University and 4C framework by <u>LEAAD (2014)</u>.

These 4 Cs of Leadership model developed by <u>Rizzo (2012)</u> include skills; *Competence, Character, Compassion,* and *Courage.* <u>LEAAD (2014)</u>, further proposed sub-skills under each of these 4 Cs. Researchers tried to develop a conceptual framework to guide this research study. Below in Figure 1 is a description of these skills embedded within this conceptual framework.

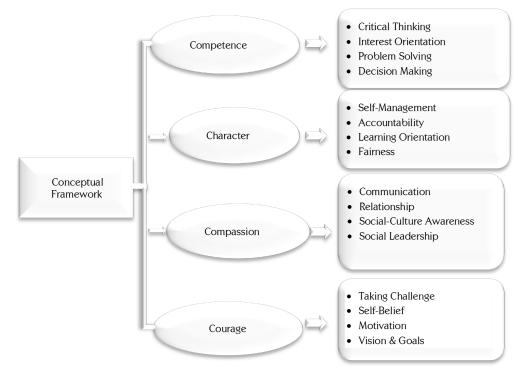


Figure 1: Conceptual Framework

Research Methodology

This research is exploratory. Survey Method Quantitative research design was used for the current study to answer the research question.

The Population of the Study

The target population of this specific study included school Head Masters/ Mistresses/ Principals/ incharge of all government secondary schools in Rawalpindi City. Although the schools were shut down during the pandemic for teachers and students, the school leaders had to report for the safe operations of schools with limited staff in all the government schools of Punjab. The school leaders were continuously involved in change management processes and making decisions with the district and provincial government authorities.

Sample and Sampling Design

The sample of the study was selected through a random sampling technique. Since the population of this study is known, the researchers have used the finite population formula to determine the sample size. 113 school leaders were selected through random sampling; however, 109 secondary school leaders participated in this research study.

The Instrument of Data Collection

An adapted survey questionnaire was used to collect data for exploring the practices of school leaders about 21st-century leadership skills. Two standardized questionnaires were adapted and merged to design the survey questionnaire—"Leadership Skill Questionnaire" by Peter G. Northouse and the "21st-century school administrator skills survey" by NASSP professional development service.

The conceptual framework of the 4 Cs 'Leadership Model' led to the adaptation and development of this questionnaire. The researchers tried to add the most appropriate items in sub-skill that responded well to the research question while merging both survey questionnaires. The tool was validated, and the reliability was calculated as 0.92, which indicates the high suitability of this scale in the Pakistani context.

Result and Discussion

To analyze the responses of the (109) participants against major classifications of 4 Cs leadership skills and their specified sub-skills researchers presented the quantitative data in the form of tables highlighting the Mean and Standard deviation of data obtained through calculated responses to each of 4 C leadership skills and their sub-skills. Participants were asked to respond to fourteen items that come under these four sub-skills on a five-Likert scale where Never=1, Rarely=2, Occasionally=3, Frequently=4, and Always Almost=5.

Competence

The following table shows the collective result of all four-sub skills. A detailed analysis of each of the sub-skills is provided in the tables below.

Table 1. Competence

Leadership Skill	Sub-Skills	Ν	Mean	SD
Competence	Problem Solving	109	3.02	.45623
	Decision Making	109	3.058	.47512
	Interest Orientation	109	4.071	.51047
	Critical Thinking	109	4.02	.60423

Table 1 shows the calculated Mean and Std. Deviation of cumulated responses of the school leaders against each of the sub-skills asked in the questionnaire. There is a difference between the uses of sub-skills. For instance, the data shows that the majority of school leaders practice interest orientation rather than other sub-skills. The mean score of interest orientation is 4.071, which is the highest among other skills, and the lowest is 3.05 for problem-solving that shows the least use of a competence related skill during this pandemic. The data in this theme shows that overall school leaders practice an understanding of the skill 'Competence' and sub-skills under the main skill. Given the data, it shows that school leaders mostly use interest orientation skills in school-related tasks during the pandemic of Covid-19.

Character

The following table displays the combined result of all the four sub-skills.

Table 2. Character

Leadership Skill	Sub-Skills	Ν	Mean	SD
Character	Accountability	109	4.45	.74190
	Self-Management	109	4.1	.60162
	Learning Orientation	109	3.21	.64816
	Fairness	109	3.058	.60025

Table 2 shows the calculated Mean and Std. Deviation of cumulated responses of the school leaders against each of the sub-skills asked in the questionnaire. The data shows that the school leaders are practicing these sub-skills in their leadership position in various contexts. There is a difference between the uses of sub-skills. For an instant, data shows that the majority of school leaders practice accountability more than other sub-skills. The mean score of accountabilities is 4.45, which

is the highest-rated and lowest mean; 3.05 is for Fairness that shows they least used this skill. Given the data, all sub-skills are practiced and understood by school leaders. Within these, accountability is more practiced by school leaders than other sub-skills during the pandemic situation.

Compassion

The following table shows the collective result of all the four sub-skills under compassion.

Table 3. Compassion

Leadership Skill	Sub-Skills	Ν	Mean	SD
	Social Leadership	109	3.17	.51063
	Relationship	109	4.21	.63012
Compassion	Socio-Cultural Awareness	109	4.07	.60029
	Communication	109	4.01	.61210

Table 3 shows the calculated mean and SD of cumulated responses of the school leaders against each of the sub-skills asked in the questionnaire. The data show that the school leaders are using these sub-skills in their leadership position in various contexts and situations. However, the majority of school leaders practice Relationships more than other sub-skills. The mean score of relationship is 4.21, that is highest among them, and the lowest is 3.17 social leadership that shows they use least of the skill during the pandemic situation.

Courage

The following table displays the collective result of all these four sub-skills.

Table 4. Courage

Leadership Skill	Sub-Skills	Ν	Mean	SD
Courage	Motivation	109	4.01	.73961
	Vision and Goals	109	4.03	.70505
	Self-Belief	109	4.37	.61050
	Taking Challenges	109	3.04	.64551

Table 4 shows the calculated Mean and Std. Deviation of cumulated responses of the school leaders against each of the sub-skills asked in the questionnaire. Overall, the data highlights that they are using these sub-skills in their leadership position in various contexts and situations. However, there is a difference between the uses of skills such as majority school leader practices self-belief than other sub-skills. The mean score of motivation is 4.37, that is the highest among them, and the lowest is 3.04 taking challenges that show the least use of the skill during the pandemic of Covid-19.

Discussion

The purpose of this study was to explore the practices of 21st-century leadership skills amongst school leaders during the current pandemic of Covid-19.

The finding reveals that school leaders were using these skills in their leadership position during the pandemic, but the level of use is comparatively different. The results show that respondents practiced their competencies in the school environment. The results of the study reveal overall school leaders practice the skill of *Courage* and its sub-skills more than the other three major skills for an instant, Competence Character, Compassion. The study finds out that school leaders feel courageous to be a leader of their school in a change driven situation such as the current pandemic. They practised the sub-skills of courage according to the different situations in their schools accordingly.

Concerning the first required skill Competence. It is evident (see table 1) that school leaders used the problem-solving skill the least out of all four sub-skills. The data show they face difficulties to solve problems during Covid-19. They considered it as important as many new problems that arose during

this pandemic. However, interest orientation is most practiced by school leaders. <u>Lunenburg (2010)</u> said that effective school leaders are those who solve the problem that is according to the request of people and takes their whole school as a unit. From the results of the present study, it is noticed that school leaders are given the opinion that they were having difficulties in problem-solving skills and also in decision making, as they considered it is not in their hand to decide this pandemic. Another researches also suggest that school leaders' task is not only to solve complex problems but should pick the alternative solution that is the best possible solution for complex setting make tough decisions and school leaders must be good at solving the problem and having this skill to solve issues by considering all complexities and challenges and select the best options that are best for the school environment (Johnson & Weiner, 2020; <u>Mumford, Zaccaro, Connelly, Marks, & Palmon 2000</u>). Therefore, keeping in view the problem-solving skill of school leaders, the results are supported by the empirical and theoretical view of previous researchers (Zhao, 2020; <u>Azorin, 2020; Lunenburg, 2010</u>).

For the second major skill, the results highlight (refers to table 2) that school leaders are practicing in their leadership position during covid-19. They use sub-skills; accountability, self-management, and fairness, and also understand these sub-skills. In their leadership position, they found accountability as the most important skills for a leader in this pandemic as they are answerable to higher authorities. Conversely, they least understand the sub-skill learning orientation among them. <u>Gunter and Ribbins</u> (2003) stated that leadership starts with the character of a leader; they defined the character as such that leader should be self-aware, strong emotionally, and manage their own need. In the same viewpoint <u>Harris (2020)</u> state in his research that school leaders take responsibility for refining the educational system and are accountable for every step they take for their school in a situation of change where their role is as critical as the leaders of the states. The result of this skill is supported by the theoretical view of the previous researcher <u>(Hargreaves, Halasz & Pont, 2007</u>; Greenfield & Ribbins, 1993).

The study explored that school leaders are using the major skill of compassion in school-related tasks. The findings show school leaders practice Relationship skills more than all other sub-skills. Findings illustrate (table 3) that school leaders interact appropriately with their staff, listened to their problems during a pandemic. As the view of Johnson and Weiner (2020), school leaders are not only collaborative internally but also have the confidence to make alliances. During pandemic teaching and learning has been changed now, school leaders have a major responsibility to develop positive relationships with teachers that will have an impact on the learning of students (Harris, 2020)—keeping the empirical and theoretical view of the previous researcher (Alvy & Robbins, 2005; Harris, 2020).

The results of the study (see table 4) highlighted that school leaders are using the sub-skills of *Courage* skill. For them, it is a quality of leaders to be courageous. However, the number of uses these skills have are different in their leadership position. The results depict that school leaders have Self-belief skills more than other sub-skills. They believe that they can make changes according to the situation during a pandemic.

<u>Northouse (2012)</u> suggested that school leaders should take a tough decision and believe in themselves. The findings of the study show that school leaders use their motivational skills to encourage their sub-ordinates during Covid-19. They understand that motivation is very important in the current situation of Covid-19 to improve the performance of staff. Other research identifies that effective school leaders can be summarized as a motivator to manage the school (Dimmock & Walker, 2002). The previous researchers (Northouse, 2012; Dimmock & Walker, 2002) support the results of this study.

Conclusions

The study was conducted to explore the practice of [recommended] 21st-century school leadership skills by secondary school leaders during Covid-19. The study is significant because it offers new insights into school leadership. They can find the importance of leadership skills in such situations as Covid-19. Findings from the analysis of data answer the research question of the study and achieve its major objective to highlight what 21st century 4 Cs leadership skills about the use of school leaders'

practices in their leadership positions during Covid-19. The following tentative conclusions were drawn from the findings of the study.

It is concluded that school leaders held positive views about the use of 21st-century leadership skills as these skills are very important and the need of today's leadership also under current pandemic. Along with the use of these skills, it also concluded that professional development workshops on 21st-century leadership skills are very important for school leaders. If they have no understanding of some skills, with the help of workshops, they can develop these skills and can confront the unique challenges they face in their leadership as it is evident that COVID-19 is a flip over the world and many changes occurred in the educational setting. To face those challenges, courageously school leaders must know 21st-century skills.

Therefore, 21st-century leadership skills need to be practised by school leaders in Pakistan not only to deal with developmental requirements associated with the current era but also to deal with the challenges of change situation such as the current pandemic of Covid-19 where these leaders could act as change agents for their schools and communities. It is expected that the results of the study would be helpful for school leaders, policymakers, and providers of 21st-century leadership training workshops.

References

- Akinbode, A. I., & Al Shuhumi, S. R. A. (2018). The Principalship in the Twenty-First Century. PUPIL: International Journal of Teaching, Education and Learning, 2(2).
- Alvy, H., & Robbins, P. (2005). Growing into Leadership. Educational Leadership, 62(8), 50-54.
- Azorin, C. (2020). "Beyond COVID-19 Supernova. Is another education coming?", *Journal of Professional Capital and Community. doi: 10.1108/JPCC-05-2020-0019.*
- Chalkiadaki, A. (2018). A systematic literature review of 21st century skills and competencies in primary education. *International Journal of Instruction, 11*(3), 1-16.
- Daniëls, E., Hondeghem, A., & Dochy, F. (2019). A review on leadership and leadership development in educational settings. *Educational research review*, *27*, 110-125.
- Dede, C. (2009). Comparing frameworks for 21st century skills. 21st century skills: Rethinking how students learn, *20*, 51-76.
- Dimmock, C., & Walker, A. (2002). School leadership in context: Societal and organisational cultures. *The principles and practice of educational management*, 70-85.
- Gunter, H., & Ribbins, P. (2003). The field of educational leadership: studying maps and mapping studies. *British journal of educational studies*, *51*(3), 254-281.
- Hargreaves, A., Halász, G., & Pont, B. (2007). School leadership for systemic improvement in Finland. *Paris: Organization for Economic Cooperation and Development*.
- Hargreaves, A. (2020), "What's next for schools after coronavirus? Here are 5 big issues and opportunities".
- Harris, A. (2005). Distributed leadership. *The essentials of school leadership*, Davies (Ed.). London: Paul Chapman.
- Harris, A. (2020). COVID-19–school leadership in crisis? *Journal of Professional Capital and Community.*
- Khan, A. A., Asimiran, S., Kadir, S. A., & Basri, R. (2020). Principals' Instructional Leadership Practices in Pakistan Elementary Schools: Perceptions and Implications. *Universal Journal of Educational Research*, 8(1A), 16 - 23. DOI: 10.13189/ujer.2020.081303.
- LEAAD. (2014). The LEAAD 4C Framework http://leaad.org/about-leaad.aspx?pg=au#4c_model.
- Leithwood, K., Harris, A., & Hopkins, D. (2020). "Seven strong claims about successful school leadership revisited", School Leadership and Management, Vol. *40* No. 1, pp. 5-22.
- Lunenburg, F. C. (2010). The principal and the school: What do principals do. In *National Forum of Educational Administration and Supervision Journal* 27 (4), 1-13.
- Moodly, A., & Toni, N. (2015). Women's voices of and on leadership in higher education.
- Moodly, A., & Toni, N. (2015). Women's voices of and on leadership in higher education. *In Global Research and International Services* (GRDS) 7th International Conference on Teaching, Education and Learning (ICTEL) (pp. 10-11).
- Mumford, M. D., Marks, M. A., Zaccaro, S. J., & Reiter-Palmon, R. (2000). Development of leadership skills: Experience and timing. *Psychology Faculty Publications Paper*, *11*(1).
- Murakami, E. (2019). Introduction: Affective and Effective Leadership Factors in the Day-to-day Operations of Schools.
- Netolicky, D. M. (2020), "School leadership during a pandemic: navigating tensions", *Journal of Professional Capital and Community.*
- Northouse, P. G. (2012). Introduction to Leadership: Concepts and Practice: Concepts and Practice (2nd ed.). *Sage Publications*.
- PAKEDU.Net (2015). Training Workshops, (n.d) on October 15, 2015, http://pakedu.net/category/training-workshops/.
- Piaw, C. Y., Hee, T. F., Ismail, N. R., & Ying, L. H. (2014). Factors of leadership skills of secondary school principals. *Procedia-Social and Behavioral Sciences*, 116, 5125-5129.
- Pont, B., Nusche, D., & Moorman, H. (2008). Improving School Leadership, Volume 1 Policy and Practice: Policy and Practice (Vol. 1). OECD publishing.
- Rizzo, P. J. (2012). The 4 Cs of Leadership. (2012). on October 9, 2015, http://www2.johnson.cornell.edu/almni/enterprise/fall2012/index.cfm?ction=department&d epartment_id=3.

Silva, E. (2009). Measuring skills for 21st-century learning. The Phi Delta Kappan, 90(9), 630-634.

- Stone-Johnson, C., & Weiner, J. M. (2020). Principal professionalism in the time of COVID-19. *Journal* of Professional Capital and Community.
- Sudana, I. M., & Apriyani, D. (2018). Principal's Leadership in Developing Critical Thinking Ability to Improve Work Productivity. In International Conference on Indonesian Technical Vocational Education and Association (APTEKINDO 2018). *Atlantis Press*.
- Suto, I. (2013). 21st century skills: Ancient, ubiquitous, enigmatic. *Research Matters: A Cambridge Assessment Publication, 15,* 2-8.
- Talat, A., & Fakhar, H. (2014). The Effect of PBL and 21st Century Skills on Students'Creativityand Competitiveness inPrivate Schools. The Lahore Journal of Business, 15(6), 89-114.
- Wang, V. C. (Ed.). (2018). Strategic leadership. IAP.
- Zhao, Y. (2020). "COVID-19 as a catalyst for educational change", Prospects, pp. 1-5.