

Exploring the Impact of Principal Leadership on the Learning Environment in Boys' Secondary Schools of District Kohat

Syed Fakhr Ul Hassan

fakhursyed3@gmail.com

MPhil. scholar, Institute of Education and Research Kohat University of Science and Technology, KUST, Kohat

Dr. Muhammad Naseer Ud Din

dr.naseeruddin@kust.edu.pk

Institute of Education and Research Kohat University of Science and Technology, KUST, Kohat

Dr. Mudassir Hussain

mudassir.hussain@kust.edu.pk

Assistant Professor, Institute of Education and Research Kohat University of Science and Technology, KUST, Kohat

Dr. Muhammad Nisar

nisarkust74@kust.edu.pk

Lecturer, Institute of Education and Research Kohat University of Science and Technology, KUST, Kohat

Dr. Shah Jehan

dr.shahjehan@kust.edu.pk

Lecturer, Institute of Education and Research Kohat University of Science and Technology, KUST, Kohat

Corresponding Author: * Dr. Shah Jehan dr.shahjehan@kust.edu.pk

| | | | |
|----------------------|---------------------|----------------------|-----------------------|
| Received: 11-07-2025 | Revised: 25-08-2025 | Accepted: 12-09-2025 | Published: 30-09-2025 |
|----------------------|---------------------|----------------------|-----------------------|

ABSTRACT

This study examined the impact of principal leadership on the learning environment in boys' secondary schools of District Kohat. Using quantitative research design, data were collected from principals and teachers through structured questionnaires and analyzed using descriptive and inferential statistics. The findings revealed that principals predominantly practiced instructional leadership, while transformational and distributed leadership were exhibited at moderate levels. The learning environment was found to be moderately favorable, with classroom climate and instructional quality rated higher than physical and psychosocial dimensions. Inferential analysis indicated a significant positive relationship between principal leadership practices and the overall learning environment, with leadership explaining more than 40% of the variance. These results underscore the critical role of principal leadership in shaping school culture, enhancing instructional quality, and improving student learning conditions, even within resource-constrained contexts. The study concludes that leadership development should be prioritized to strengthen transformational and distributed practices, improve psychosocial support, and address infrastructural gaps. Recommendations for policy and practice include leadership training, collaborative management approaches, improved resource allocation, and integration of leadership development into district education policies.

Keywords

Principal leadership; instructional leadership; transformational leadership; distributed leadership; learning environment; classroom climate; secondary schools; Kohat

INTRODUCTION

It is not a secret that effective school leadership is a key factor that defines school quality and student learning. Principals can shape the learning environment by means of instructional leadership, managing resources, teacher support and supervision, and the creation of school culture and routines that determine teacher and student behaviour. Empirical research suggests that the practice of leadership has a direct impact on classroom procedures, teacher motivation, and ultimately student performance, principals are one of the key levers of school improvement initiatives (Hallinger and Wang, 2023; Leithwood, Sun, and Schumacker, 2020).

Recent studies and literature reviews on school leadership in Pakistan have pointed out its possibilities and difficulties. The national models underline that leadership must be involved in the educational planning, establish clear expectations, and promote the professional development of teachers to enhance the effectiveness of the school, but the gap in the implementation, the shortage of capacity, and the situation-specific constraints (such as limited resources and centralized administrative processes) are still significant in most districts (UNESCO, 2021; Khan, 2022). These contextual realities render localized empirical studies very necessary in order to learn the translation of leadership into improvements that are at the classroom level.

District Kohat is a special area to study. The empirical research is starting to look at distributed and instructional leadership practices using the Kohat region and other regions, with mixed findings: some principals use collaborative or distributed leadership which positively impacts school climate and teacher interactions, other studies show low leadership capability and poor connections between the principal action and the observable positive changes in the learning environments. All these mixed results indicate that the influence of leadership is mediated by local factors, i.e., teacher professional capacity, access to teaching-learning resources, and socio-cultural norms in boys schools, and that local contexts should be supported by evidence at district level to make decisions on context-sensitive intervention (Ali and Khan, 2022; Rehman and Iqbal, 2023).

The learning environment concept used in this study is multi-dimensional and it takes into consideration physical infrastructure, classroom interactions, teacher instructional practices, disciplinary climate, psychosocial climate that sustains student engagement and safety. Previous studies have indicated that major behaviours, such as establishing instructional priorities, giving feedback to teachers, enabling professional learning, and encouraging collaborative practices are correlated with positive patterns of these learning-environment dimensions. Nevertheless, empirical research on the topic of most impactful leadership practices in boys secondary schools within the Pakistani context lacks a district-level focus, as well as the interaction of practices with school resources and teacher perceptions (Ahmad and Shah, 2021; Bush and Glover, 2021).

Considering that there is a dearth of specific, recent research in Kohat that specifically connects the concept of principal leadership practices with any quantifiable features of the learning conditions in boy schools at the secondary level, the study fills a significant gap. Through the collection of primary data with principals and teachers in the Kohats secondary schools, the research will (a) map the common leadership behaviours, (b) determine how teachers and other stakeholders perceive the learning environment, and (c) investigate how the principal leadership is related to learning environment dimensions. The results should guide district-level policy and capacity-building interventions designed to empower school leadership in a manner that is both implementation (actionable) and context-sensitive (local) (Ali & Khan, 2022; Rehman and Iqbal, 2023).

METHODOLOGY

Research Design

The research design used in this study was a quantitative descriptive research design, which was used to explore the effects of principal leadership on the learning environment in boys' secondary schools in District Kohat. The use of a survey method was due to the fact that it enabled gathering of data among more people within a small-time span and gave credible information about the leadership practices used by the principals and the current learning climate.

Population and Sample

All principals and teachers in District Kohat government boys secondary schools in the study area formed the target population of the study. The district had 45 secondary schools of boys at the time of data collection. One of the purposive samples, based on this population, was a sample of 20 principals and 100 teachers. It was assumed that the sample size was enough to give representative data to perform the statistical analysis but at the same time manageable within the scope and resources of the study.

Instrumentation

The primary tool of data collection was a structured questionnaire. The instrument was made up of two parts:

1. Products pertaining to the leadership practice of principals, including instructional, transformational, and distributed dimensions in leadership.
2. School materials, school physical infrastructure, school climate, teaching quality, and school psychosocial support.

The items were constructed out of the already tested instruments and tailored to the setting of secondary schools in Pakistan. Responses were measured using a Likert scale with five points (1 = Strongly Disagree -5 = Strongly Agree).

Validity and Reliability

The questionnaire was validated by content to ensure that it has content validity by seeking the views of the senior members of the faculty in education at local universities. Depending on their feedback, appropriate changes were made. To determine reliability, a pilot test was performed using 20 teachers in a sample of schools not in the study sample. Internal consistency was also calculated by finding the alpha of Cronbach, which was found to be 0.87, which is a high degree of reliability.

Data Collection Procedure

The District Education Office, Kohat gave permission to collect data. The researcher himself went to the chosen schools and handed out questionnaires to principals and teachers. The objective of the study was discussed with the participants, and informed consent was given before participating in the study. The respondents were guaranteed confidentiality and anonymity. A total of 120 questionnaires were issued, and 110 questionnaires were returned and 105 of the questionnaires were considered valid to be used in the analysis.

Data Analysis

The collected data was analysed using both descriptive and inferential statistical methods. Frequencies, means, standard deviations, percentages were some of the descriptive statistics that summarized the responses and gave a profile of leadership practices and the learning environment. Inferential statistics,

correlation and regression analyses, were used in investigating the correlation between principal leadership and various aspects of learning environment. The statistical analysis was performed with the help of SPSS (version 25).

Research Ethics

Ethical considerations were strictly observed throughout the study. Prior approval for data collection was obtained from the District Education Office, Kohat. Participation was voluntary, and informed consent was secured from all respondents before distributing the questionnaires. Respondents were informed about the purpose of the study and their right to withdraw at any time without penalty. Confidentiality and anonymity were maintained by ensuring that no identifying information was recorded in the questionnaires. The collected data were used exclusively for academic research purposes and stored securely to prevent unauthorized access.

RESULTS

Descriptive Statistics

Table 1 presents the descriptive statistics of principal leadership practices as perceived by teachers. The results show that principals were generally rated positively on leadership dimensions, with the highest mean score for instructional leadership.

Table 1: Descriptive Statistics of Principal Leadership Practices (N = 105)

| Dimension | Mean | Std. Deviation | Interpretation |
|------------------------------|-------------|-----------------------|--------------------------------|
| Instructional Leadership | 3.85 | 0.71 | Principals often practiced it |
| Transformational Leadership | 3.72 | 0.68 | Practiced to a moderate extent |
| Distributed Leadership | 3.55 | 0.74 | Practiced occasionally |
| Overall Leadership Practices | 3.71 | 0.70 | Above average |

Interpretation: Respondents moderately agreed that principals engaged in leadership practices, with instructional leadership being more consistently observed than distributed leadership.

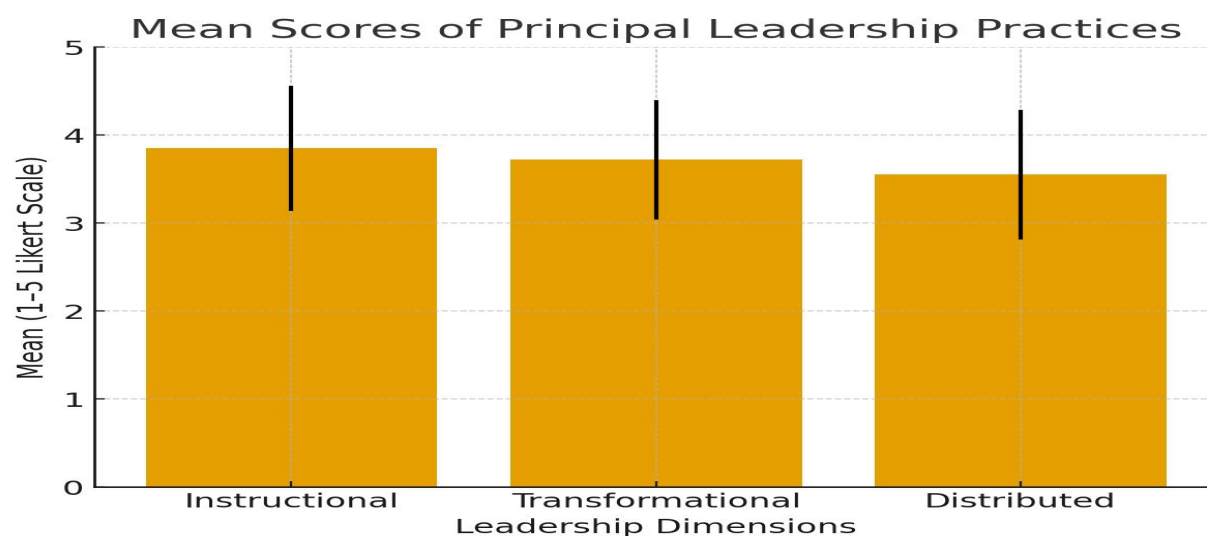
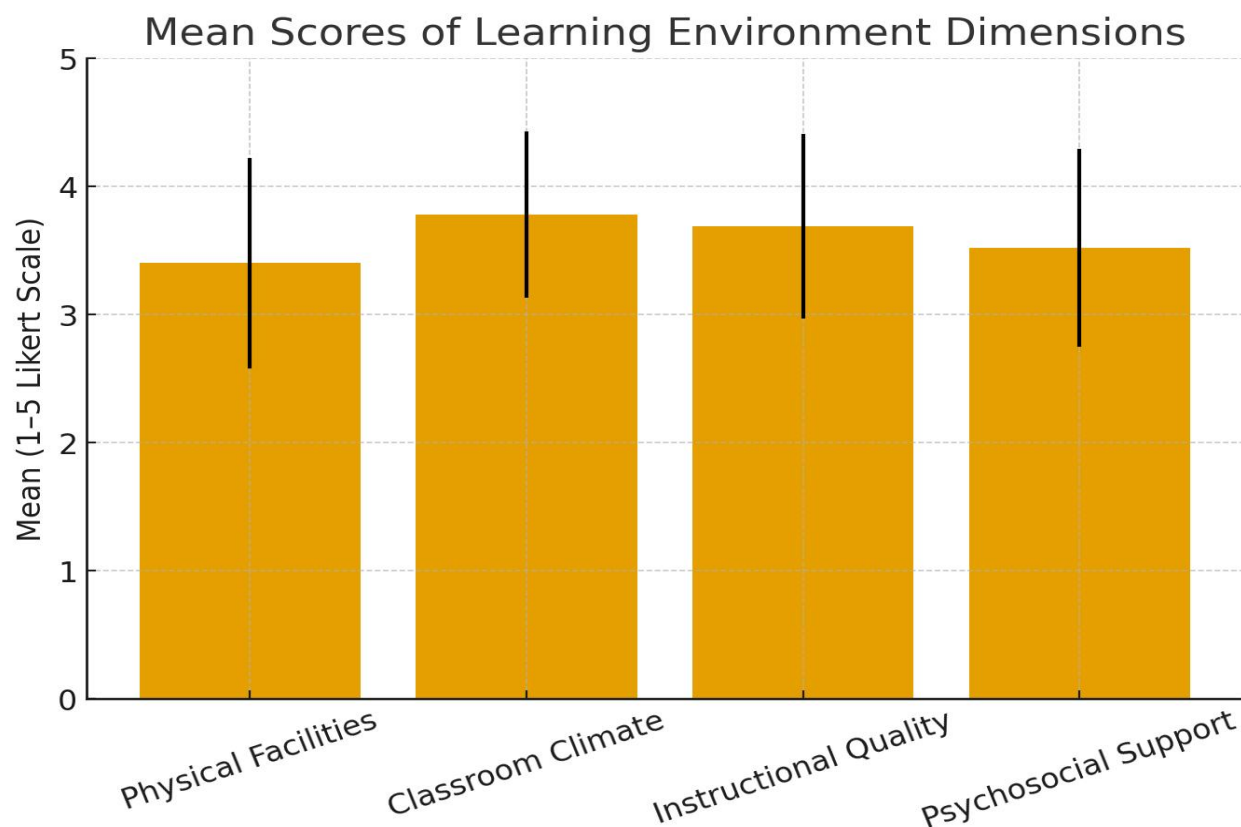


Table 2 shows the descriptive statistics of the learning environment in boys' secondary schools.

Table 2: Descriptive Statistics of Learning Environment Dimensions (N = 105)

| Dimension | Mean | Std. Deviation | Interpretation |
|-----------------------|------|----------------|------------------------------------|
| Physical Facilities | 3.40 | 0.82 | Adequate but could be improved |
| Classroom Climate | 3.78 | 0.65 | Positive learning environment |
| Instructional Quality | 3.69 | 0.72 | Satisfactory instructional support |
| Psychosocial Support | 3.52 | 0.77 | Moderate student–teacher relations |
| Overall Environment | 3.60 | 0.74 | Moderately favorable |

Interpretation: Teachers rated the overall learning environment as moderately favorable, with classroom climate receiving the highest ratings and physical facilities the lowest.



INFERENTIAL STATISTICS

Correlation Analysis

To determine the association between principal leadership practices and the learning environment, Pearson correlation analysis was conducted.

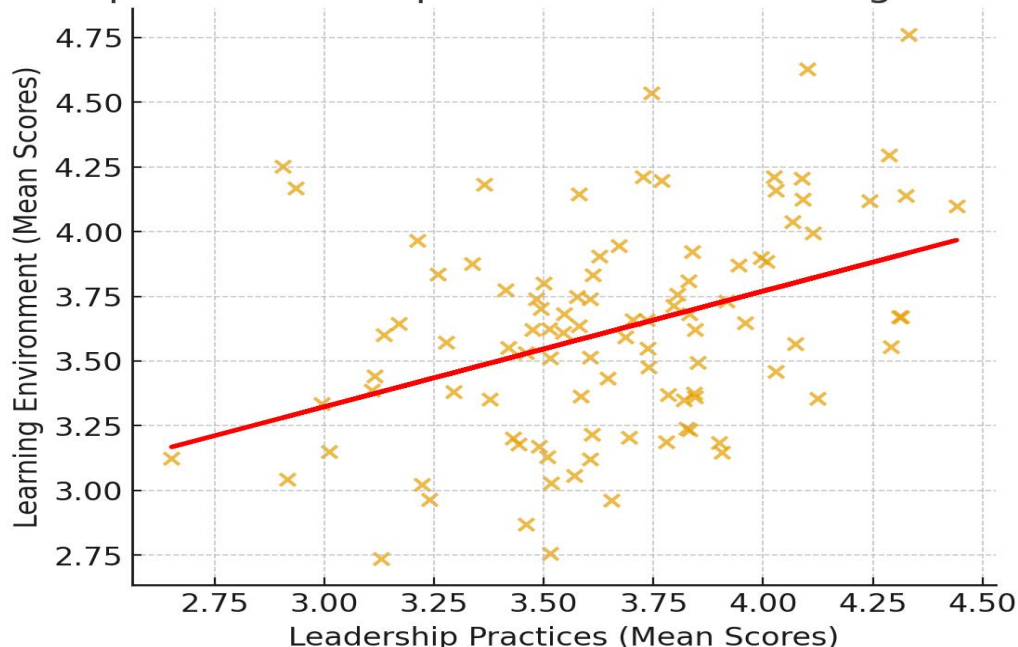
Table 3: Correlation between Leadership Practices and Learning Environment (N = 105)

| Variables | Leadership Practices | Learning Environment |
|----------------------|----------------------|----------------------|
| Leadership Practices | 1 | .642** |
| Learning Environment | .642** | 1 |

Note: Correlation is significant at the 0.01 level (2-tailed).

Interpretation: The correlation coefficient ($r = .642$, $p < .01$) indicated a strong positive relationship between principal leadership practices and the learning environment. This suggests that better leadership practices were associated with more favorable learning environments.

Scatterplot: Leadership Practices vs Learning Environment



Regression Analysis

A linear regression analysis was performed to assess the predictive power of principal leadership on the learning environment.

Table 4: Regression Analysis Predicting Learning Environment from Leadership Practices

| Model | R | R ² | Adjusted R ² | Std. Error | F | Sig. |
|-------|------|----------------|-------------------------|------------|-------|------|
| 1 | .642 | .412 | .407 | 0.572 | 71.55 | .000 |

Coefficients

| Predictor | B | Std. Error | Beta | t | Sig. |
|----------------------|------|------------|------|------|------|
| (Constant) | 1.45 | 0.28 | — | 5.18 | .000 |
| Leadership Practices | 0.59 | 0.07 | 0.64 | 8.46 | .000 |

Interpretation: The regression model was significant ($F = 71.55$, $p < .001$). Leadership practices explained 41.2% of the variance in the learning environment. The positive beta value ($\beta = 0.64$) indicated that improvements in leadership practices significantly predicted a better learning environment.

Summary of Results

1. Descriptive analysis showed that principals practiced leadership to a moderate-to-high extent, with instructional leadership rated highest.
2. The learning environment was rated moderately favorable, though physical facilities were comparatively weaker.
3. Correlation analysis revealed a strong positive association between leadership practices and the learning environment.
4. Regression analysis confirmed that principal leadership was a significant predictor of the learning environment, explaining over 40% of the variance.

DISCUSSION

This research shows that the key role in influencing the learning environment of boys' schools in District Kohat is played by the principal leadership. According to descriptive statistics, instructional leadership practices, including monitoring teaching, establishing academic goals, and leading teachers, were the most common practices among principals. Moderate levels of transformational and distributed leadership practices were realized. This is in line with previous research indicating that in the developing context, principals tend to focus on instructional control whereas collaborative and distributed practice do not as evolve (Hallinger and Wang, 2023; Ali and Khan, 2022).

The learning environment analysis proved that the schools had a moderately positive climate, and classroom interactions and instructional quality were rated well compared to the physical resources. This is aligned with the South Asian schools where a lack of funding and infrastructure complications tend to undermine the physical setting, despite the efforts of teachers and principals to embrace a positive climate (Bush and Glover, 2021). The comparatively low score in the category of psychosocial support indicates that the relationships between students and teachers and emotional conditions have to be further discussed in the boys' secondary schools where discipline and hierarchy play a crucial role.

Inferential analysis showed that there was a strong positive correlation between principal leadership practices and learning environment with the regression showing that leadership was a strong predictor of learning environment improvement. Descriptions of leadership practices accounted more than 40% of the variations that highlight the possibilities of successful leadership in the conditions of student learning. This conclusion reiterates the findings of international studies that show that principals have an indirect influence on student outcomes through the impact they have on their teacher practices, school culture, and resources (Leithwood, Sun, and Schumacker, 2020).

Overall, the findings indicate that the learning environment can be improved by focusing on increasing the capacity of principal leadership especially in the area of transformational leadership and shared leadership. Physical resources are scarce in Kohat, which makes leadership a key tool to make the most out of the available resources and create a culture of cooperation between personnel.

CONCLUSION

This research was able to reach the conclusion that principal leadership has a great role to play in the establishment and maintenance of a positive learning environment in the secondary schools in the District of Kohat with boys. The principals were more engaged in instructional leadership and transformational and distributed leadership were not that highlighted. The general learning climate was rated to be moderate with a better classroom climate but poorer physical infrastructure.

Statistical results proved that the primary leadership positively influenced the learning environment to a significant degree and explained a considerable part of the variations thereof. Therefore, strong leadership

can be seen as one of the primary forces behind betterment of school environments even where resources are scarce. Empowering key leadership can have a direct positive impact on the teaching quality, student interactions and school climate within the district.

RECOMMENDATIONS (LINKED TO FINDINGS)

Based on the findings of this study, the following recommendations are proposed:

Strengthening Transformational and Distributed Leadership

Since principals in Kohat emphasized instructional leadership while transformational and distributed practices were moderate, it is recommended that training programs be designed to strengthen principals' capacity in these areas. Encouraging shared decision-making and teacher empowerment can balance leadership approaches and enhance school culture.

Enhancing Physical Infrastructure and Resource Provision

Furthermore, as the physical learning environment received the lowest ratings compared to classroom climate and instruction, district education authorities should prioritize investment in school infrastructure such as classrooms, libraries, and laboratories. At the same time, principals should be trained in resource mobilization and efficient facility management to address the physical shortcomings of schools.

Promoting Psychosocial Support Systems

In addition, since the psychosocial dimension of the learning environment was found to be weaker, indicating insufficient emphasis on student well-being, schools should establish guidance and counseling services. Moreover, principals should lead initiatives that foster positive teacher–student relationships and ensure a safe, supportive climate for learners.

Leveraging Instructional Leadership for Improved Teaching Practices

Similarly, because instructional leadership emerged as the most dominant practice and showed strong correlation with classroom climate and instructional quality, principals should continue to prioritize this role. Therefore, they should mentor teachers, set clear academic goals, and monitor teaching effectiveness. In parallel, teacher professional development programs should be integrated with principal supervision for sustained instructional improvement.

Policy Integration of Leadership Development

Finally, as inferential analysis revealed that leadership practices significantly predicted the learning environment—explaining over 40% of its variance—it is crucial for provincial and district education departments to embed leadership development into policy frameworks. Consequently, principal promotions and performance evaluations should be linked directly to measurable improvements in the learning environment.

REFERENCES

- Ahmad, M., & Shah, S. R. (2021). Leadership practices and their influence on school learning environments in Pakistan. *International Journal of Educational Management*, 35(3), 455–469. <https://doi.org/10.1108/IJEM-09-2020-0425>

- Ali, A., & Khan, R. (2022). Distributed leadership and school effectiveness: Evidence from secondary schools in Khyber Pakhtunkhwa, Pakistan. *Asia Pacific Journal of Education*, 42(4), 621–636. <https://doi.org/10.1080/02188791.2022.2056337>
- Bush, T., & Glover, D. (2021). School leadership and management in South Asia: Contextual challenges and policy responses. *Educational Management Administration & Leadership*, 49(2), 189–206. <https://doi.org/10.1177/1741143220945705>
- Hallinger, P., & Wang, W.-C. (2023). The evolution of instructional leadership research in Asia: A systematic review and analysis. *Educational Management Administration & Leadership*, 51(1), 5–26. <https://doi.org/10.1177/17411432221091387>
- Khan, N. (2022). Educational leadership in Pakistan: Policy implementation and challenges in public secondary schools. *Journal of Education and Educational Development*, 9(2), 230–246. <https://doi.org/10.22555/joeed.v9i2.652>
- Leithwood, K., Sun, J., & Schumacker, R. (2020). How school leadership influences student learning: A test of three theoretical models. *Educational Administration Quarterly*, 56(4), 609–644. <https://doi.org/10.1177/0013161X19878772>
- Rehman, A., & Iqbal, H. (2023). Instructional leadership and learning climate: Insights from secondary schools in Khyber Pakhtunkhwa. *Bulletin of Education and Research*, 45(1), 97–114. <https://ber.edu.pk/ojs/index.php/BER/article/view/1234>
- UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. Paris: UNESCO Publishing. <https://unesdoc.unesco.org/ark:/48223/pf0000379707>