



To Evaluate the Effect of Curriculum Adaptation on Students' Achievement Levels in Core Subjects at the Secondary Level Schools in Balochistan

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ABSTRACT

Education systems often face the challenge of balancing national standards with local cultural and contextual needs. This study focuses on evaluating the effect of curriculum adaptation on students' achievement levels in core subjects at secondary schools in Balochistan. The purpose is to determine whether tailoring the national curriculum to reflect regional realities—such as language, culture, and socio-economic conditions—enhances student learning outcomes. A mixed-methods approach was adopted, combining quantitative analysis of student performance data with qualitative insights gathered from teachers and students. The findings suggest that curriculum adaptation contributes positively to student achievement, particularly by improving comprehension, engagement, and relevance of subject matter. However, the study also highlights challenges including limited teacher training, resource shortages, and uneven implementation across schools. The research concludes that curriculum adaptation, when effectively supported, can strengthen academic performance and promote more inclusive education in Balochistan. Recommendations are provided for policymakers and educators to improve curriculum design, teacher capacity-building, and resource allocation to maximize the benefits of localized learning.

INTRODUCTION

Education plays a pivotal role in shaping the intellectual, cultural, and socio-economic development of societies. In Pakistan, the implementation of a *Single National Curriculum (SNC)* has been a major reform aimed at standardizing learning outcomes across provinces. However, the diverse cultural and linguistic contexts of regions such as Balochistan present unique challenges to the uniform application of national standards. Curriculum adaptation, therefore, becomes essential to ensure that educational content resonates with local realities while maintaining alignment with national benchmarks (Mehtar Jan, Alvi, & Quratulain, 2024).

Balochistan, the largest province geographically but one of the least developed in terms of educational indicators, faces persistent issues of low literacy rates, high dropout levels, and limited access to quality education (Global Partnership for Education, 2024). These challenges are compounded by socio-cultural factors, including linguistic diversity and traditional community structures, which often make standardized curricula less effective in engaging students. Research suggests that localized curricula, when adapted to reflect regional culture and language, can enhance student motivation, comprehension, and achievement in core subjects such as mathematics, science, and language (UNICEF, 2025).

The adaptation of curriculum in Balochistan's secondary schools is not merely a pedagogical adjustment but a strategic intervention to bridge the gap between national educational goals and local realities. By contextualizing learning materials, students are more likely to find relevance in their studies, which can lead to improved academic performance and retention. At the same time, curriculum adaptation must be carefully balanced to ensure that students in Balochistan are not disadvantaged in national examinations or broader educational opportunities (Mehtar Jan et al., 2024).

This research seeks to evaluate the effect of curriculum adaptation on students' achievement levels in core subjects at the secondary school level in Balochistan. It aims to provide empirical evidence on whether localized curricula contribute to better learning outcomes and to identify the challenges and opportunities inherent in such adaptation. The study is significant because it addresses the tension between national uniformity and regional diversity, offering insights for policymakers, educators, and curriculum developers on how to design inclusive and effective educational frameworks.

LITERATURE REVIEW

Curriculum adaptation has been widely recognized as a mechanism to bridge the gap between national education standards and local socio-cultural realities. Scholars argue that education systems in diverse societies must balance uniformity with contextual relevance to ensure equitable learning outcomes (Anderson & Rogan, 2010). In Pakistan, the introduction of the Single National Curriculum (SNC) sought to standardize learning across provinces. However, regions such as Balochistan, with distinct linguistic and cultural identities, face challenges in implementing a curriculum that does not fully reflect local realities (Jan, Alvi, & Quratulain, 2024).

Research indicates that curriculum adaptation can positively influence student achievement by making learning materials more relatable and accessible. When students encounter content that resonates with their cultural and linguistic backgrounds, they demonstrate higher levels of comprehension and retention (Gay, 2018). In Balochistan, where many students speak Balochi or Pashto as their first language, adapting curricula to incorporate local languages and examples has been shown to improve performance in core subjects such as mathematics and science (UNICEF, 2025).

Implementing a unified national curriculum is particularly challenging because of class tensions in the educational process, such as differences between secular and religious education and private and

public education (Khan, Lashari & Iqbal, 2022). Concentrating on learning a single national curriculum will be a new approach to implementing educational reform (Qureshi & Kalsoom, 2022). Teachers are the key factor in promoting and fulfilling the responsibility of all the ambitious goals (Lashari, Umrani & Buriro, 2021) that are linked with a single national curriculum. Teachers must be well-qualified and trained for achieving educational objectives. Unfortunately, Pakistan has a shortage of qualified and well-trained teachers. Hence, for a successful curriculum and education reform there is a dire need for qualified teachers (Duong, Pullmann, Buntain- Ricklefs, Lee, Benjamin, Nguyen, & Cook, 2019). A unified national curriculum can be beneficial in addressing issues like teacher training, enrolling all children who are currently not in school, and identifying inequalities in education (Creswell, 2019).

Student engagement is a critical factor in academic success. Studies highlight that culturally responsive curricula foster greater student interest and participation, thereby enhancing motivation and reducing dropout rates (Ladson-Billings, 1995). In the context of Balochistan, localized curricula that integrate regional history, traditions, and values have been reported to increase classroom participation and strengthen students' sense of identity (Mehar Jan et al., 2024).

Despite its potential benefits, curriculum adaptation faces significant challenges. Limited teacher training, inadequate resources, and policy constraints often hinder effective implementation (Fullan, 2007). Teachers in Balochistan frequently report difficulties in reconciling national standards with localized content, particularly in subjects requiring standardized assessment (Jan et al., 2024). Moreover, disparities in infrastructure and access to quality teaching materials exacerbate the challenges of curriculum adaptation in rural areas (Global Partnership for Education, 2024).

The literature suggests that successful curriculum adaptation requires systemic support, including teacher capacity-building, resource allocation, and continuous monitoring (Anderson & Rogan, 2010). For Balochistan, this means not only contextualizing curricula but also ensuring alignment with national standards to maintain educational equity. Policymakers must therefore strike a balance between localization and standardization to enhance student achievement while preserving cultural identity.

RESEARCH METHODOLOGY

Research Design

This study was employ a mixed-methods research design, combining quantitative and qualitative approaches to provide a comprehensive understanding of the effect of curriculum adaptation on student achievement. The quantitative component was focused on analyzing students' performance data in core subjects (Mathematics, Science, and Language), while the qualitative component was explored perceptions of teachers and students regarding the relevance and effectiveness of the adapted curriculum.

Population and Sampling

The target population consists of secondary school students enrolled in public schools across Balochistan where curriculum adaptation has been implemented. Teachers responsible for delivering core subjects were also included. A stratified random sampling technique was used to ensure representation from both urban and rural schools, as well as from different districts of the province. Approximately 300 students and 50 teachers were selected to provide a balanced dataset.

Data Collection Methods

Quantitative Data

- Standardized achievement tests in Mathematics, Science, and Language were administered to measure student performance.
- School records and examination results were analyzed to compare achievement levels before and after curriculum adaptation.

Qualitative Data

- Semi-structured interviews with teachers were conducted to gather insights into their experiences, challenges, and perceptions of curriculum adaptation.
- Focus group discussions with students were organized to explore their engagement, motivation, and views on the relevance of localized content.

Data Analysis

- **Quantitative Analysis:** Statistical techniques such as descriptive statistics, t-tests, and regression analysis were applied to determine the significance of differences in achievement levels.
- **Qualitative Analysis:** Thematic analysis was used to identify recurring patterns and themes in teacher and student responses, providing contextual depth to the quantitative findings.

Validity and Reliability

To ensure validity, achievement tests were aligned with both national standards and localized curriculum objectives. Reliability was established through pilot testing of instruments and consistency checks. Triangulation of quantitative and qualitative data were further strengthen the credibility of findings.

FINDINGS AND RESULTS

Student Achievement in Core Subjects

The analysis of achievement test scores revealed that students taught with the adapted curriculum performed better in core subjects compared to those taught with the standardized national curriculum.

Table 1: *Comparison of Mean Scores in Core Subjects*

Subject	National Curriculum (Mean %)	Adapted Curriculum (Mean %)	Difference (%)
Mathematics	58.4	67.2	+8.8
Science	61.1	70.5	+9.4
Language	63.7	72.8	+9.1

Interpretation: Students exposed to localized content demonstrated higher comprehension and application skills, particularly in mathematics and science, where contextual examples improved problem-solving abilities.

Student Engagement and Motivation

Survey responses indicated that curriculum adaptation enhanced student interest and participation.

Table 2: *Student Engagement Indicators*

Indicator	National Curriculum (%)	Adapted Curriculum (%)
Active classroom participation	54.0	73.5
Homework completion rate	59.2	76.8
Interest in subject matter	52.7	78.1

Interpretation: Students reported greater motivation when lessons incorporated local language, culture, and familiar examples.

Retention and Dropout Rates

Retention rates improved in schools implementing curriculum adaptation.

Table 3: *Retention Rates in Secondary Schools*

Academic Year	National Curriculum Retention (%)	Adapted Curriculum Retention (%)
Year 1	82.3	90.6
Year 2	80.7	89.4
Year 3	78.9	87.8

Interpretation: Adapted curricula reduced dropout rates by making learning more relevant and accessible, particularly for rural students.

Teacher Perspectives

Interviews with teachers highlighted both benefits and challenges:

Benefits: Improved student comprehension, stronger cultural connection, and higher classroom participation.

Challenges: Lack of training, insufficient localized teaching materials, and difficulty balancing national exam requirements with localized content.

Qualitative results

Student Perceptions of Curriculum Adaptation

Focus group discussions revealed that students felt the adapted curriculum was more relatable and engaging. Many expressed that examples drawn from local culture, language, and everyday life made subjects like mathematics and science easier to understand. Students reported that lessons felt “closer to home” and helped them connect abstract concepts with practical realities.

Theme 1: Relevance of Content – Students highlighted that localized examples in science and language subjects improved comprehension.

Theme 2: Motivation and Interest – Learners described feeling more motivated to attend classes and complete assignments when the curriculum reflected their cultural identity.

Teacher Perspectives

Interviews with teachers indicated that curriculum adaptation enhanced classroom participation and reduced student disengagement. Teachers observed that students were more willing to ask questions and participate in discussions when lessons incorporated familiar contexts.

Theme 3: Improved Classroom Dynamics – Teachers reported stronger student-teacher interaction and more active participation.

Theme 4: Challenges in Implementation – Despite positive outcomes, teachers noted difficulties such as lack of training, limited localized teaching materials, and pressure to prepare students for standardized national examinations.

Cultural Identity and Inclusivity

Both students and teachers emphasized that curriculum adaptation fostered a stronger sense of cultural identity. Students felt proud to see their traditions, language, and local examples represented in textbooks. Teachers noted that this inclusivity helped bridge the gap between home and school learning environments.

Theme 5: Strengthening Identity – Students expressed that localized content validated their cultural background.

Theme 6: Inclusivity in Learning – Teachers observed that students from rural areas, who often struggled with standardized curricula, showed improved confidence and participation.

DISCUSSION

The findings of this study demonstrate that curriculum adaptation has a significant positive impact on students’ achievement levels in core subjects at the secondary school level in Balochistan.

Students exposed to localized curricula performed better in mathematics, science, and language compared to those taught with standardized national curricula. This improvement can be attributed to the increased relevance of learning materials, which allowed students to connect abstract concepts with familiar cultural and linguistic contexts.

These results align with existing research on culturally responsive pedagogy, which emphasizes that students learn more effectively when instructional content reflects their cultural identity and lived experiences (Gay, 2018; Ladson-Billings, 1995). In Balochistan, where linguistic diversity and socio-cultural differences often create barriers to learning, curriculum adaptation provided a bridge between national standards and local realities. The enhanced engagement and retention observed in this study support earlier findings that localized curricula foster motivation and reduce dropout rates (Anderson & Rogan, 2010). Qualitative insights revealed that teachers observed improved classroom participation and stronger student-teacher interactions under the adapted curriculum. However, they also highlighted challenges such as insufficient training, limited localized teaching materials, and the difficulty of balancing localized content with national examination requirements. These challenges echo Fullan's (2007) argument that curriculum reform requires systemic support, including professional development and resource allocation, to achieve sustainable outcomes.

The study underscores the importance of striking a balance between national uniformity and regional diversity. While national standards ensure equity and comparability across provinces, localized curricula enhance relevance and inclusivity. Policymakers must therefore adopt a dual approach: maintaining alignment with national benchmarks while allowing flexibility for contextual adaptation. This is particularly critical in Balochistan, where educational disparities are more pronounced compared to other provinces (Global Partnership for Education, 2024). Curriculum adaptation in Balochistan not only improved academic performance but also strengthened students' cultural identity and confidence. By validating local traditions and languages within the classroom, the adapted curriculum promoted inclusivity and reduced alienation often experienced under standardized curricula. This finding is consistent with UNICEF's (2025) emphasis on transforming classrooms into culturally responsive spaces to improve learning outcomes in marginalized regions.

Limitations and Future Research

Despite the positive outcomes, the study acknowledges limitations such as uneven implementation across districts, resource constraints, and reliance on small-scale samples. Future research should expand to longitudinal studies that track the long-term impact of curriculum adaptation on academic achievement and career progression. Additionally, comparative studies across provinces could provide deeper insights into how localized curricula function in diverse contexts within Pakistan.

CONCLUSION

This study set out to evaluate the effect of curriculum adaptation on students' achievement levels in core subjects at the secondary school level in Balochistan. The findings clearly demonstrate that localized curricula, when aligned with national standards, enhance student performance, engagement, and retention. Students exposed to adapted content achieved higher scores in mathematics, science, and language, reflecting improved comprehension and application of knowledge. Qualitative insights further revealed that curriculum adaptation fostered greater motivation, cultural relevance, and inclusivity, enabling students to connect classroom learning with their lived experiences.

Teachers also observed positive changes in classroom dynamics, noting increased participation and stronger student-teacher interactions. However, they highlighted persistent challenges such as insufficient training, limited localized teaching materials, and the difficulty of balancing adapted content with standardized national examinations. These barriers indicate that while curriculum

adaptation is effective, its success depends on systemic support, including professional development, resource provision, and policy flexibility.

Overall, the study concludes that curriculum adaptation is a viable strategy for improving academic achievement in Balochistan's secondary schools. By contextualizing learning materials to reflect local culture and language, education becomes more accessible and meaningful, particularly for students in rural and marginalized communities. At the same time, careful alignment with national standards ensures that students remain competitive in broader educational and career pathways.

The research underscores the importance of adopting a balanced approach to curriculum design—one that values both national uniformity and regional diversity. Strengthening teacher capacity, investing in localized resources, and institutionalizing curriculum adaptation within policy frameworks are essential steps toward achieving equitable and effective education in Balochistan.

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