

From Data to Decisions: Evaluating Digital School Monitoring, Attendance, and Accountability in Public Schools of Ziarat District, Balochistan

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Abstract

Digitally monitored systems may help to increase the timeliness and relevance of education information, particularly in geographically dispersed regions where delayed information may impede interventions. This paper examines the data-to-decisions environment in public education in Ziarat District, Balochistan using a quantitative secondary-data design based on genuine

administrative and census records from the Balochistan Education Management Information System (EMIS), School Education Department and Pakistan Bureau of Statistics (PBS).

The study compares public-school enrolment across 2022–23 and 2023–24, examines gender and secondary-level participation, considers selected EMIS monitoring indicators and relates school-level information to the Census-2023 literacy and OOSC figures. Public-school enrolment grew from 13,352 to 15,043, a 12.7% increase. Female enrolment increased by 18.2%, compared to 8.2% for males, increasing the female-to-male enrolment ratio from 0.81 to 0.88. Census-2023 finds the literacy rate to be 43.37% with significant disparity between males (53.06%) and females (33.49%) and 43,568 children aged 5-16 years out of school. EMIS monitoring data indicate student attendance of 87.8% and staff attendance of 74.0% while some of the school facilities, infrastructure, professional development and funds-utilisation indicators remain relatively weak.

Conclusions drawn from the analysis suggest that the key challenge for Ziarat is not just the availability of the data but its timely and equitable use for the purposes of education management and improvement. The study recommends regular district data reviews, effective attendance monitoring, gender-based planning, digital infrastructure improvement, professional development and systematic data quality audits.

Keywords: education management information system; digital monitoring; school attendance; accountability; Ziarat; Balochistan; secondary education; administrative data; evidence-based decision making.

1. Introduction

The value of education information system does not lie in the quantity of information generated. What is more important is whether this information reaches the decision makers and whether it leads to appropriate decisions and actions. Education Management Information Systems (EMIS) are supposed to assist in the process by collecting, integrating, processing, maintaining and disseminating information for planning, monitoring, management and policy formulation. EMIS has been defined by UNESCO as an institution rather than merely as a technology, encompassing people, technology, processes, procedures and data (UNESCO Institute for Statistics & Global Partnership for Education, 2020).

This distinction is especially relevant in Balochistan where schools are widely dispersed over large geographic area. In April 2026, the Government of Balochistan has officially launched the Digital School Census and Advanced Attendance Management Information System. According to the School Education Department, the digital school census is aimed at consolidating information on the school infrastructure, buildings, rooms, student enrolment and teachers, while the attendance system is designed to support online monitoring of attendance and administrative performance. The government has associated the initiative with the planning, resource use, transparency and institutional accountability (Balochistan School Education Department, 2026a).

It is especially important that such development happens at a particular time, when it may significantly affect the distance between an event happening at the school level and the administrative response to that event. But technology does not necessarily result in improved decisions. The value of it lies in the quality of data, their interpretation, institutional capacities, supervision and mechanisms for addressing the problems identified (El Mazbough et al., 2025).

Ziarat District provides a good context for examining this relationship. According to Balochistan EMIS, the public-school enrolment in Ziarat District has increased from 13,352 students in 2022–23 to 15,043 in 2023–24. This increase has been accompanied by relatively faster growth in the girls' enrolment than boys'. At the same time, Census-2023 reveals considerable educational disparities in the district. Literacy among people aged 10 years and older has been found to be 43.37% with the literacy rate of females standing at 33.49%, compared to 53.06% of males. The census also reveals 43,568 out-of-school children aged 5–16 years, out of which 22,782 are girls (Education Management Information System [EMIS], 2023, 2024; Pakistan Bureau of Statistics [PBS], 2024).

These figures show why school monitoring and population-level evidence should be considered together. While an attendance system could provide information about the children enrolled but not about those who have never enrolled in the system or dropped out of it. Besides, an increase in the overall enrolment could go along with gender disparities, poor transition, infrastructure problems and low professional development.

The present paper examines the extent to which the existing administrative and census data can shed light on the process of transforming information into management decisions in Ziarat District. It does not assume that digital monitoring brings better educational outcomes but examines what

evidence the available information generates concerning participation, attendance, workforce capacity, school conditions, gender equity and accountability and how it could be used for district-level action.

2. Background and Policy Context

Balochistan has established the EMIS infrastructure for collecting and reporting information about government schools. The 2023–24 Balochistan Education Statistics provides district-level data on enrolment, school stages, gender, teachers and teacher training. Procedures of data entry, questionnaire checking, correction and verification are described in the report (EMIS, 2024).

The province has been moving towards a more integrated digital monitoring environment. The April 2026 launch of the Digital School Census and Advanced Attendance Management Information System represents a significant step in this direction. The School Education Department says that the digital census will consolidate information on the school infrastructure, rooms, enrolment and teachers, while the attendance system will support online monitoring of attendance and administrative performance (Balochistan School Education Department, 2026a).

In the broader policy context, the evidence-based education reform is also emphasized. In June 2026, the School Education Department has reported on the five-year review of the Balochistan Education Sector Plan and has explicitly referred to the evidence-based reforms and effective planning. UNICEF has likewise reported in June 2026 that the Balochistan Education Support Programme II has led to the development of data-driven education systems, including digital school census and real-time school monitoring initiatives (Balochistan School Education Department, 2026b; UNICEF Pakistan, 2026).

The international literature supports the significance of such transition from data collection to data use. The EMIS guidance from UNESCO emphasizes the need to produce accurate, relevant, reliable and timely information that could support decision makers. Similarly, the case study by the World Bank in Pakistan finds that the EMIS may become a reporting tool when the information is not linked to the local improvement planning. The report finds that the use of data in the point where the education services are delivered can support better local decisions and services improvement (Nayyar-Stone, 2014; Schildkamp & Kuiper, 2010; UNESCO Institute for Statistics, 2020).

For Ziarat, it means that the key policy issue is not just whether the digital information exists. The question is whether it is sufficiently reliable, accessible, disaggregated and actionable to support decisions about attendance, transition, staffing, infrastructure, professional development and equity.

3. Problem Statement

The key problem examined in the study is the gap between the availability of the education information and its effective conversion into management actions.

Ziarat's administrative data contain information about enrolment, gender, teachers, attendance, school conditions and professional development. Census-2023 provides additional information about literacy and children who remain outside the formal education system. But the mere existence of the indicators does not show that the decisions are timely, targeted and equitable (EMIS, 2024; PBS, 2024).

The issue becomes especially evident at the transition from middle to secondary education. In 2023–24, Ziarat recorded 2,039 middle-school students and 1,134 high-school students. Higher-secondary enrolment was found to be just one student. The data do not answer the question why it has happened. The possible reasons might be limited institutional capacity, transition losses, migration, alternative education options or reporting issues. All these explanations require school-level verification, not unsubstantiated causal interpretation (EMIS, 2024).

The same principle applies to attendance. Student attendance has been reported as 87.8%, while staff attendance is 74.0%. The difference raises a management issue that deserves investigation, but it does not prove that staff absenteeism causes poor educational outcomes (EMIS, n.d.).

The research problem is thus framed as a data-use problem rather than technology deficiency problem. The study examines whether the available indicators could support coherent management process from data generation and quality assurance to interpretation, response and accountability.

4. Objectives of the Study

The objectives of the study are:

1. To examine changes in public-school enrolment in Ziarat District between 2022–23 and 2023–24, with particular focus on gender;
2. To analyse participation at middle, high and higher-secondary levels;
3. To examine selected EMIS monitoring indicators in relation to student attendance, staff attendance, school conditions, supervision, professional development and funds utilization;
4. To examine gender and educational participation disparities using Census-2023 evidence;
5. To assess how administrative and census indicators could be used to identify the district-level accountability and school improvement priorities;
6. To develop evidence-based recommendations for the digital monitoring and data use in Ziarat District.

5. Research Questions

The study addresses the following questions:

1. What changes have occurred in public-school enrolment in Ziarat between 2022–23 and 2023–24?
2. How does participation differ by gender and school level?
3. What does the available EMIS monitoring indicators reveal about attendance, school conditions, supervision and professional development?
4. What gender and educational access disparities can be seen in Census-2023 data?
5. What management and accountability priorities can be identified when the school-level administrative data are combined with population-level evidence?
6. How can the existing digital monitoring arrangements be improved to support more timely and equitable decision-making?

6. Conceptual Framework

The study adopts a data-to-decision framework that understands digital monitoring as just one of the steps in a broader institutional process.

The framework is comprised of six interrelated steps:

Data generation → Data quality → Digital visibility → Interpretation → Management response → Accountability and school improvement

On the first step, schools and administrative units collect information about the students, teachers, attendance, infrastructure and services. The second step deals with data quality, including completeness, consistency, accuracy, timeliness and disaggregation. The third step concerns the capacity of digital systems to make the information available to the relevant decision makers (UNESCO Institute for Statistics, 2020).

But visibility alone is not enough. Managers need to interpret the information, find meaningful patterns and differentiate between various types of problems. The fourth step is management response, which could consist of supervision, resources allocation, attendance follow-up, professional development, infrastructure support and community engagement. Finally, the step of accountability requires the institutions to explain their performance, react to the evidence and examine whether interventions brought any improvement. Thus, the framework considers digital technology as an enabler of management, not as a substitute for management capacity (Coburn & Turner, 2011; El Mazbouh et al., 2025; Schildkamp & Kuiper, 2010).

7. Review of Related Literature

7.1. Education Management Information Systems and Data Use

EMIS has become an increasingly important element of education governance. EMIS has been defined by UNESCO as a system for collecting, integrating, processing, maintaining and disseminating the education information to support decision making, policy analysis, planning, monitoring and management (UNESCO Institute for Statistics & Global Partnership for Education, 2020).

The quality of an EMIS, therefore, is not determined by the digitization of information. Data must also be relevant, accurate, timely, accessible and disaggregated enough to support decisions. The operational guidance by UNESCO specifically addresses standards for improving the quality and usability of administrative education data (UNESCO Institute for Statistics, 2020).

7.2. EMIS and Local Decision Making

The analysis of Pakistan by the World Bank is especially relevant for the present study. It finds that EMIS may become a reporting tool when data are not linked to the local improvement activities. On the contrary, when information is used in the point of service delivery and linked with action plans, it strengthens local education management (Nayyar-Stone, 2014).

This distinction is at the core of the present study. Ziarat's monitoring indicators are not considered as separate statistics but as potential signals for management actions.

7.3. Attendance and Accountability

Attendance is an important administrative indicator, since regular participation is the necessary condition for learning. But attendance figures should be interpreted within the institutional context. For example, student attendance and staff attendance refer to different processes and cannot be aggregated into one measure.

Relatively high student attendance figure alongside with lower staff attendance, for example, does not establish a causal relationship between the two figures. But it does raise an issue that requires further investigation of the deployment, supervision, workload, travel conditions or school-level management (Chaudhury et al., 2006; Duflo et al., 2012).

7.4. Gender and Educational Equity

Gender-disaggregated data are necessary since aggregate enrolment figures can hide crucial differences between boys and girls. A district may experience an increase in the total enrolment while continuing to have substantial female exclusion or gender disparities in literacy.

Census-2023 clearly illustrates this in Ziarat. The literacy rate among the population aged 10 years and older was 33.49% for females, compared to 53.06% for males. The district has also recorded 22,782 girls out of 43,568 out-of-school children aged 5-16 years (PBS, 2024).

Digital monitoring may contribute to gender-sensitive management if dashboards routinely disaggregate indicators by sex, school level, location and transition stage.

7.5. Digital Transformation in Balochistan

Recent developments in Balochistan strengthen the relevance of the present study even more. The announcement by the School Education Department in April 2026 explicitly links the Digital

School Census and Advanced Attendance Management Information System with the planning, resource use, transparency and institutional accountability. UNICEF's June 2026 review similarly refers to the digital school census and real-time monitoring as elements of the larger effort to develop data-driven education systems in Balochistan (Balochistan School Education Department, 2026a; UNICEF Pakistan, 2023, 2026).

Thus, the present study examines an education system at a particular point of transition – an established administrative data infrastructure is increasingly being linked with the digital monitoring.

8. Methodology

8.1. Research Design

A quantitative secondary-data design was used. The study is descriptive, comparative and policy-analytic. Primary questionnaire responses were not used and no claims about having conducted surveys of the teachers, students, head teachers or education officials. The unit of analysis is the district-level education system, with selected indicators examined across school levels, gender categories and management dimensions.

8.2. Study Area

The study concentrates on Ziarat District in Balochistan, Pakistan. The district has a substantial rural population and dispersed public-school network. These features make the issues of monitoring, supervision, connectivity and timely management response especially relevant.

8.3. Data Sources

Three principal sources were used:

1. Balochistan Education Statistics 2023–24, published through the School Education Department/EMIS, for enrolment, school stage, gender, teacher and training information. The official report confirms Ziarat's total enrolment of 15,043 students in 2023-24 (EMIS, 2024).
2. Balochistan EMIS district monitoring dashboard, for attendance and selected school management indicators. The current EMIS district ranking page provides the student attendance, staff attendance, facilities, infrastructure, teaching-learning environment, school visits, professional development and funds-utilization figures of Ziarat (EMIS, n.d.).

3. Table 1, for literacy, educational participation and out-of-school children by sex and rural/urban residence (PBS, 2024).

Table 1: Variables and Operationalisation

Construct	Operational definition	Source
Total public-school enrolment	Boys + girls enrolled across Kachi, primary, middle, high, and higher-secondary levels	Balochistan EMIS 2023–24
Enrolment growth	Percentage change between 2022–23 and 2023–24	Derived from EMIS
Female-to-male enrolment ratio	Female enrolment ÷ male enrolment	Derived from EMIS
Secondary enrolment	High + higher-secondary enrolment	Balochistan EMIS 2023–24
Student attendance	Percentage reported by EMIS monitoring system	EMIS dashboard
Staff attendance	Percentage reported by EMIS monitoring system	EMIS dashboard
School facilities	Percentage reported by EMIS monitoring system	EMIS dashboard
Infrastructure	Percentage reported by EMIS monitoring system	EMIS dashboard
Teaching and learning environment	Percentage reported by EMIS monitoring system	EMIS dashboard
School visits	Percentage of schools reported as visited by EDO	EMIS dashboard
Professional development	Percentage reported by EMIS monitoring system	EMIS dashboard
Literacy	Percentage literate among population aged 10+	PBS Census-2023
OOSC	Number of children aged 5–16 classified as out of school	PBS Census-2023
Teacher training	Teachers recorded as trained in the relevant EMIS category	Balochistan EMIS 2023–24

8.4. Data Analysis

The analysis used frequencies, percentages, growth rates, gender ratios, percentage-point differences and cross-indicator comparisons.

The principal calculations were:

No causal modelling was undertaken. Since the data are aggregate and observational, the study does not estimate the causal effects of digital monitoring.

8.5. Data Quality and Ethical Considerations

The distinction between primary and secondary data was consistently maintained in the analysis. Published administrative statistics are not presented as questionnaire responses or field observations.

The EMIS 2023-24 report describes procedures of data checking and verification, while PBS source provides published district-level census statistics (EMIS, 2024; PBS, 2024).

The study uses aggregate publicly available information and does not report individual-level personal data.

9. Results

9.1. Public-School Enrolment

Table 2: Public School Enrolment in Ziarat District 2022–23 and 2023–24

Indicator	2022-23	2023-24	Change
Total enrolment	13,352	15,043	12.7%
Boys	7,388	7,995	8.2%
Girls	5,964	7,048	18.2%
Female-to-male ratio	0.81	0.88	+0.07

The district's total public-school enrolment increased by 1,691 students, from 13,352 to 15,043, which is an increase of 12.7%. Girls' enrolment increased by 1,084 students, or 18.2%, while boys' enrolment increased by 607 students, or 8.2%. This led to the improvement of the female-to-male ratio from 0.81 to 0.88 (EMIS, 2023, 2024).

While these figures show improvement in participation rates and especially girls' enrolment, they do not prove that gender equality has been achieved, as the ratio is still less than 1.00. These EMIS figures are confirmed in the official 2023–24 education statistics (EMIS, 2024).

9.2. Enrolment by School Stage

Table 3: Ziarat Enrolment by School Stage 2023-24

School stage	Boys	Girls	Total	Girls' share
Kachi	1,958	1,726	3,684	46.9%
Primary	4,398	3,787	8,185	46.3%
Middle	1,066	973	2,039	47.7%
High	572	562	1,134	49.6%
Higher secondary	1	0	1	0.0%

The official EMIS statistics reveal the fairly balanced gender distribution at the high-school stage, where the share of girls is 49.6%. At middle level, the share of girls is 47.7% (EMIS, 2024).

However, at the higher-secondary level, the figure is only 1. That should not be seen automatically as the evidence that there is no higher-secondary education in the district. Instead, this is an unusually small administrative value that needs to be verified by other evidence sources before making any high-stakes decision.

Combined high and higher-secondary enrolment is 1,135 students, which is equal to 7.5% of the total public-school enrolment (EMIS, 2024).

9.3. Literacy and Gender Disparity

Table 4: Literacy in Ziarat District, Census-2023

Indicator	Total	Male	Female	Gender gap
Literacy, age 10+	43.37%	53.06%	33.49%	19.57 pp
Rural literacy	41.83%	51.67%	31.94%	19.73 pp
Urban literacy	47.60%	56.81%	37.88%	18.93 pp

According to Census-2023, the overall literacy rate among the population aged 10 years and above in Ziarat is 43.37%. Male literacy is 53.06%, compared to 33.49% of female literacy, resulting in 19.57 percentage point gender gap. That gender disparity remains relevant both in rural and urban areas (PBS, 2024).

In rural areas, female literacy is 31.94%, compared to 51.67% of male literacy. In urban areas, female literacy is 37.88%, compared to 56.81% of male literacy (PBS, 2024).

That indicates that the improvement of school enrolment, especially girls' enrolment, does not eliminate educational inequalities.

9.4. Out-of-School Children

Table 5: Out-of-School Children Age 5–16, Ziarat District

Indicator	Number	Share
Total OOSC	43,568	100.0%
Male OOSC	20,781	47.7%
Female OOSC	22,782	52.3%
Difference, female minus male	2,001	—

According to Census-2023, the number of out-of-school children aged 5–16 in Ziarat is 43,568. Of these, 22,782 were girls and 20,781 were boys. Thus, the share of girls among the district's OOSC population was approximately 52.3% (PBS, 2024).

That is an important consideration for understanding digital attendance systems. While attendance monitoring captures mainly those children who are already enrolled in schools, children who have never been enrolled as well as those who have left school, may not be captured by routine school attendance data. Therefore, census evidence provides a necessary population-level complement to EMIS monitoring (PBS, 2024).

9.5. Middle-School Teacher Capacity

Table 6: Middle-School Teaching Workforce in Ziarat, 2023-24

Indicator	Ziarat	Percentage
Total middle-school teachers	158	100.0%
Female teachers	92	58.2%
Male teachers	66	41.8%
Trained teachers	66	41.8%
Unrecorded as trained	92	58.2%

Ziarat had 158 middle-school teachers in 2023-24, including 92 women. Female teachers made up 58.2% of Ziarat's middle-school teaching workforce. At provincial level, women constituted 40.0% of middle-school teachers, which means that Ziarat's female share was 18.2 percentage points higher than that of the province (EMIS, 2024).

However, only 66 of Ziarat's 158 middle-school teachers were recorded as trained in the relevant EMIS training category, which is 41.8% (EMIS, 2024).

That demonstrates the importance of not treating staffing quantity and professional capacity as the same construct. While a relatively high proportion of female teachers may contribute to girls' participation, the training indicator signals the need for more detailed examination of professional development.

9.6. Digital Monitoring Indicators

Table 7: EMIS Monitoring Snapshot for Ziarat

Monitoring indicator	Ziarat (%)
Student attendance	87.8
Staff attendance	74.0
School facilities	40.7
Infrastructure	48.1
Teaching and learning environment	44.0
Schools visited by EDO	17.9
Professional development	11.9
Funds utilised	0.0

Source: Balochistan EMIS district monitoring dashboard.

According to EMIS dashboard, student attendance in Ziarat is 87.8% and staff attendance is 74.0%, which gives the difference of 13.8 percentage points. The dashboard reports substantially lower values for school facilities, infrastructure, teaching and learning environment, school visits, and professional development (EMIS, n.d.).

Those indicators should not be combined into a single overall performance score. They represent different dimensions of education management.

In addition, the 0.0% funds utilisation figure reported requires special caution. Before it is interpreted as the evidence of financial underutilisation, the monitoring period, denominator, reporting status and "funds utilised" definition should be verified. That is why it is better to treat it as a verification flag rather than a conclusive statement on district financial performance (EMIS, n.d.).

9.7. Derived Indicators

Table 8: Principal Derived Indicators

Indicator	Calculation	Result
Total enrolment growth	$(15,043 - 13,352) / 13,352 \times 100$	12.7%
Girls' enrolment growth	$(7,048 - 5,964) / 5,964 \times 100$	18.2%
Boys' enrolment growth	$(7,995 - 7,388) / 7,388 \times 100$	8.2%
Female-to-male ratio, 2023-24	$7,048 / 7,995$	0.88
Secondary share	$1,135 / 15,043 \times 100$	7.5%
High-school female share	$562 / 1,134 \times 100$	49.6%
Literacy gender gap	$53.06 - 33.49$	19.57 pp
Attendance gap	$87.8 - 74.0$	13.8 pp
Female OOSC share	$22,782 / 43,568 \times 100$	52.3%
Female middle-teacher share	$92 / 158 \times 100$	58.2%
Trained middle-teacher share	$66 / 158 \times 100$	41.8%

10. Discussion

The results reveal a district education system that experienced an expansion of enrolment but has many challenges in terms of participation, workforce and management.

The 12.7% increase in public-school enrolment in Ziarat District between 2022-23 and 2023-24 is a positive development. However, the increase was particularly high among girls, whose enrolment rose by 18.2%, twice as fast as boys'. As a result, the female-to-male enrolment ratio improved from 0.81 to 0.88 (EMIS, 2023, 2024).

However, the improvement cannot be taken as proof of the resolution of educational inequality. Census-2023 shows that female literacy is substantially below male literacy and that girls represent more than half of the district's out-of-school children. The discrepancy illustrates the necessity to monitor not a single indicator, like enrolment, but the whole education pathway of children (PBS, 2024).

Transition to secondary education requires more detailed examination as well. High-school enrolment is relatively balanced by gender, as girls represent 49.6% of high-school students. However, the number of students decreases from 2,039 at middle level to 1,134 at high level, while there is only one student at higher-secondary level in the EMIS dataset (EMIS, 2024).

The data do not provide the reason for the described trend. This can be explained by institutionally available education, transition losses, migration, alternative educational pathways, and data-reporting issues. Thus, a responsible interpretation is to see it as a diagnostic signal. The district managers should use school-level records to analyse Grade 8-to-Grade 9 transitions and verify the higher-secondary figure before making any conclusions.

The attendance results provide another example of the importance of the information interpretation. The student attendance is reported at 87.8%, while staff attendance is 74.0%. While the 13.8-percentage point difference does not prove that staff absence leads to learning problems of students, it raises a management question to be examined by school-level verification, deployment records, supervision reports and attendance follow-up (Chaudhury et al., 2006; Duflo et al., 2012; EMIS, n.d.).

In addition, lower values for school facilities, infrastructure, teaching and learning environment, school visits, and professional development demonstrate that attendance cannot be the measure of school performance. A school can report satisfactory student attendance and still operate with inadequate infrastructure and professional development (EMIS, n.d.).

The teacher capacity also provides a similar example. While Ziarat's relatively high proportion of female middle-school teachers can be used as a resource for supporting girls' participation, only 41.8% of middle-school teachers were recorded as trained in the relevant EMIS category. The policy implication, therefore, is not only to recruit more teachers, but to connect workforce data with professional development needs (EMIS, 2024).

The Census-2023 findings reinforce the case for an equity-oriented monitoring system. The female literacy rate is 19.57 percentage points below the male rate, while 22,782 girls aged 5–16 are recorded as out of school. School attendance systems cannot address this problem entirely, as the children outside the school are, by definition, largely absent from the school-based administrative systems (PBS, 2024).

That is why there is a need for more integration between administrative and population data. EMIS can provide information about what is happening within schools, while census data provide information about the population not appearing in school records. Combination of the two data sets allows developing a more comprehensive basis for identifying educational exclusion (PBS, 2024).

The findings support a careful interpretation of digitalisation as well. The 2026 Digital School Census and Advanced Attendance Management Information System can be an important institutional development in Balochistan. Nevertheless, the success of the system will depend on the link between information and decision-making, and then on verification and learning (Balochistan School Education Department, 2026a; El Mazbough et al., 2025).

This is consistent with the World Bank's experience in Pakistan, which states that EMIS can become primarily a reporting tool when information is not connected to local improvement planning. For Ziarat, therefore, the objective should not be to collect more indicators simply because digital technology makes it possible. The objective should be to develop a manageable cycle in which selected indicators trigger the corresponding actions (Nayyar-Stone, 2014).

One possible district cycle would be structured as:

Review → Identify → Assign → Act → Verify → Learn

For example, when a school records low attendance regularly, the decision should not end with the identification of the percentage. The district should verify the record, identify the cause, assign the responsibility, implement the corresponding intervention and then examine whether the situation has changed.

The same logic applies to gender disparities, infrastructure deficiencies, teacher training, and school visits.

11. Policy Implications

The findings indicate several practical priorities for Ziarat District.

11.1. Establish a District Data-Review Cycle

Indicators of attendance, enrolment, gender, transition, staffing and infrastructure should be reviewed together regularly. The purpose should be taking actions rather than reporting (Schildkamp & Kuiper, 2010).

11.2. Monitor Grade 8-to-Grade 9 Transition

The decrease between middle and high-school enrolment should trigger analysis of transition patterns at school level. In addition, the higher-secondary figure of one student should be independently verified before using for planning.

11.3. Strengthen Gender-Responsive Monitoring

Dashboards should report girls' and boys' enrolment, attendance, transition, teacher availability and retention separately. Aggregated figures can mask important inequalities.

11.4. Link Attendance with Follow-Up

Attendance information should lead to the defined follow-up procedures. Staff attendance data should be analyzed together with deployment, supervision, workload and contextual factors, rather than be automatically interpreted as individual misconduct (Chaudhury et al., 2006; Duflo et al., 2012).

11.5. Target Professional Development

The finding that only 41.8% of middle-school teachers were recorded as trained suggests the need for targeted professional development planning. Training should be connected with school needs and subsequently be monitored.

11.6. Strengthen Digital Infrastructure

Schools located in geographically dispersed areas require reliable connectivity, devices, technical assistance, and, if needed, offline-capable data entry arrangement.

11.7. Conduct Routine Data-Quality Audits

The digital systems should include routine checks for missing, duplicated, contradictory or implausible records. This is especially important when indicators are used for accountability decisions (El Mazbouh et al., 2025; UNESCO Institute for Statistics, 2020).

11.8. Connect EMIS with Population Evidence

Census-2023 OOSC data should be used to complement school attendance data. The children not visible in school systems should be identified, reached out and re-enrolled through community-level efforts (PBS, 2024).

11.9. Treat the Digital School Census as a Baseline Opportunity

The 2026 digital census should be used for the verification of school profiles, infrastructure, enrolment, staffing and other administrative information before applying performance benchmarks (Balochistan School Education Department, 2026a).

11.10. Make Accountability Supportive as Well as Corrective

The monitoring should identify the responsible parties and the support needed to improve performance. Accountability is more effective when data is trusted, understood, verified and linked with actions.

12. Limitations

There are several limitations of this study.

First, it uses aggregate secondary data and thus cannot measure directly the digital literacy of teachers, the digital skills of students, perceptions of the technology use, and classroom technology use and individual experiences with digital monitoring.

Second, the EMIS dashboard indicators represent the monitoring snapshot. That is why they should not be interpreted as longitudinal trends unless documented time series is available.

Third, the administrative data can include the reporting, classification and timing issues even if formal verification procedures are in place.

Fourth, the study is merely descriptive and observational. It does not prove that digital monitoring causes higher enrolment, better attendance, improved teaching quality or better educational outcomes.

Fifth, the extremely small higher-secondary enrolment value needs to be independently verified before making high-stakes policy decisions.

Finally, the study combines the administrative and census data generated for different purposes.

Thus, those sources should be interpreted as complementary rather than perfectly interchangeable measures.

13. Conclusion

This study examined whether existing education data in Ziarat District can support moving from information collection to better educational decisions. The results revealed a mixed but informative picture. The public-school enrolment increased by 12.7% between 2022-23 and 2023-24, while girls' enrolment grew more rapidly than boys' enrolment. High-school enrolment is close to gender parity (EMIS, 2023, 2024).

However, the general educational situation remains challenging. Female literacy is substantially lower than male literacy, 43,568 children aged 5–16 are out of school, and girls constitute 52.3% of the OOSC population. The EMIS monitoring snapshot also shows the substantial difference between student and staff attendance and relatively low indicators for school facilities, infrastructure, school visits and professional development. The main implication is that Ziarat needs not only more data, but also better data use routines. The 2026 Digital School Census and Advanced Attendance Management Information System provides an important institutional opportunity for this. The long-term value of the system will depend on whether the collected information is accurate, whether the managers can interpret it, whether the identified problems lead to action, and whether the subsequent data are used to determine whether the action was successful (Balochistan School Education Department, 2026a; EMIS, n.d.; PBS, 2024).

For the geographically dispersed district like Ziarat, a good digital monitoring system should make educational inequalities visible without creating additional administrative burdens or technological barriers. Such a system should help decision makers identify where attendance problems occur, where students are lost during transition, where girls remain excluded, where teachers need professional development, and where the infrastructure requires improvements (El Mazbouh et al., 2025).

The ultimate objective of such a system should therefore not be a more sophisticated dashboard for its own sake. The objective should be a more responsive education system in which accurate information leads to timely decisions and those decisions are followed by verification and learning. The main lesson from Ziarat is thus simple: the value of digital monitoring lies not in the data it produces, but in the quality and fairness of the decisions that follow.

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