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EDUCATIONAL PRACTICES, POLICIES, AND STUDENT OUTCOMES: A COMPARATIVE STUDY OF CM RISE AND OTHER GOVERNMENT SCHOOLS IN MADHYA PRADESH

Mrs. Akhilesh Shrivastav^{1*}, Prof. (Dr.) R.P. Pandey²

¹Ph.D (Scholar), Department of Education, Mandsaur University, Mandsaur (MP), India
ORCID ID: 0009-0008-0281-328X, Email: tanupradeep143@gmail.com

²Professor and Head, Department of Education, Mandsaur University, Mandsaur (MP), India
ORCID ID 0009-0002-1039-2469, Email: paandeyrp68@gmail.com

Corresponding Author: Mrs. Akhilesh Shrivastav
(tanupradeep143@gmail.com)

ABSTRACT

The quality of school education remains a central concern in India, where government schools serve the majority of learners from socio-economically disadvantaged backgrounds. The Government of Madhya Pradesh launched the CM Rise Schools initiative as a flagship reform to transform selected government institutions into high-quality centers of public education. The present study undertakes a systematic comparative analysis of CM Rise and other Government Schools across nine dimensions: teacher adequacy and qualification, academic achievement, professional development programs, government funding, infrastructure and facilities, co-curricular activities, teaching-learning strategies, disciplinary practices, and educational policy implementation. A descriptive and comparative research design was adopted. Twenty schools – 10 CM Rise and 10 other Government Schools– were selected from four districts of the Ujjain division of Madhya Pradesh using stratified random sampling. Data were collected from principals, teachers, parents, and Class 10 students through structured questionnaires, observation checklists, and school records for 2022-23 and 2023-24. The percentage method was the primary statistical tool. CM Rise Schools demonstrate significantly better infrastructure (90% with smart classrooms vs. 20%), professional development (8 PDPs/year vs. 4; 95% participation vs. 68%), academic performance (64.2% above 60% in Class 10 vs. 43.3%), and parental satisfaction (88% vs. 62%). However, substantial within-category variation confirms that school leadership and teacher adequacy are more powerful determinants of outcomes than institutional label alone. While the CM Rise initiative is a promising reform, systemic equity requires progressive diffusion of its quality features to all government schools in the state.

KEYWORDS: CM Rise Schools; Government Schools; Educational Quality; Madhya Pradesh; Teaching-Learning Practices; NEP 2020; School Reform; Comparative Education.

1. INTRODUCTION

Education is universally recognised as the most potent instrument of social transformation, economic growth, and human development. In India, government schools constitute the backbone of the educational system, providing schooling to millions of children – particularly those from rural, tribal, and economically weaker communities. Despite significant expansions in access and enrollment following the Right to Education Act (2009), persistent concerns regarding the quality of instruction, adequacy of infrastructure, teacher effectiveness, and student learning outcomes continue to undermine the effectiveness of public schooling.

National and state-level reforms have increasingly shifted focus from mere enrollment to quality, equity, and holistic development of learners. The National Education Policy 2020 provides a comprehensive framework calling for competency-based learning, digital integration, teacher professional development, and equitable access to quality education. In alignment with these national priorities, the Government of Madhya Pradesh launched the CM Rise Schools initiative – one of the most ambitious state-level school reform programs in recent Indian educational history.

CM Rise Schools are designated government institutions transformed with premium physical infrastructure, modern classrooms equipped with smart boards and digital tools, trained and regularly developed teachers, enriched co-curricular programs, and structured student support systems. The initiative envisions these schools as centers of excellence within the public system – demonstrating that world-class education is possible in government schools and gradually inspiring systemic improvement.

Despite substantial policy attention and financial investment in CM Rise Schools, rigorous empirical research comparing them with regular Government Schools on multiple dimensions of school effectiveness has been limited. This study bridges that gap by providing systematic evidence on nine critical dimensions of educational quality, drawing on data from 20 schools across four districts of the Ujjain division of Madhya Pradesh for two consecutive academic years (2022–23 and 2023–24).

2. REVIEW OF LITERATURE

2.1 School Quality and Reform in India

The literature on government school quality in India consistently identifies inadequate infrastructure,

teacher shortages, poor professional development, and ineffective pedagogical practices as persistent challenges. Aggarwal (2008) noted that quality education requires not just physical inputs but effective governance, accountability, and learner-centred pedagogy. The Annual Status of Education Reports (ASER, 2022) have repeatedly documented a 'learning crisis' in Indian government schools – high enrollment, low achievement.

Singh and Kumar (2020) conducted a comparative analysis of government and private elementary schools in Haryana, finding significant differences in infrastructure, teacher qualifications, pedagogical methods, and academic outcomes. Their study reinforced that strengthening government schools is essential for ensuring equity and universal access to quality education – a finding directly relevant to the CM Rise initiative's rationale.

2.2 Model School Initiatives and Demonstration Effects

Kumar (2005) argued that model schools created within the government system can serve as catalysts for broader reform through the 'demonstration effect' – making best practices visible and inspiring other institutions to aspire to similar standards. Mukherjee (2014) identified five prerequisites for successful school reform: political commitment, adequate and sustained financing, clear implementation guidelines, effective monitoring, and meaningful stakeholder engagement. The CM Rise initiative embodies all five.

Muralidharan (2017) reviewed experimental evidence on school reform in developing countries and found that integrated interventions combining infrastructure, teacher quality improvement, and accountability mechanisms produce significantly larger learning gains than single-dimension interventions. This aligns with the multi-dimensional design of the CM Rise Schools.

2.3 Teacher Quality and Professional Development

Darling-Hammond (2000) established that teacher preparation and professional certification are among the strongest school-based predictors of student achievement. Hattie (2009), in a synthesis of over 800 meta-analyses, identified teacher effectiveness – particularly feedback quality, instructional clarity, and student-teacher relationships – as the most powerful school-level influence on learning. These findings provide the theoretical foundation for CM Rise Schools' emphasis on teacher qualifications and professional development.

2.4 Research Gap

While extensive literature exists on government school quality, teacher effectiveness, and school reform in India and internationally, systematic empirical research specifically comparing CM Rise with other Government Schools on multiple dimensions of school effectiveness has been absent. This study fills that gap.

3. RESEARCH METHODOLOGY

3.1 Research Design

The study employed a descriptive and comparative research design, which is appropriate for

systematically documenting and comparing existing conditions in natural settings without experimental manipulation of variables.

3.2 Study Area and Sample

The study was conducted in the Ujjain division of Madhya Pradesh, covering four districts: Neemuch, Mandsaur, Ujjain, and Ratlam. A stratified random sampling technique was used to select 20 schools – 10 CM Rise Schools and 10 other Government Schools – ensuring balanced representation. From these schools, data were collected from 3458 participants.

Table 1. Distribution of Sample by Category and School Type

Category / Particulars	CM Rise Schools (n = 10)	Government Schools (n = 10)	Total
Number of Schools	10	10	20
Principals	10	10	20
Teachers	100	100	200
Parents	150	150	300
Students (2022-23)	714	711	1,425
Students (2023-24)	784	729	1,513
Total Students (Both Years)	1,498	1,440	2,938

Table 2. Student Enrollment Data (2022-23 & 2023-24)

Sr. No.	School Name	Students 2022-23	Students 2023-24
CM Rise Schools			
1	CM Rise School Sabakheda	46	51
2	CM Rise School Neemuch	56	106
3	CM Rise School Manasa	79	84
4	CM Rise School Ghatiya	79	68
5	CM Rise School Khawasa	111	129
6	CM Rise School Rampura	52	26
7	CM Rise School Chandwasa	154	106
8	CM Rise School Jawad	35	50
9	CM Rise School Garot	61	93
10	CM Rise School Malhargadh	41	71
	Total (CM Rise Schools)	714	784
Other Government Schools			
11	Govt. Excellence HSS Manasa	38	58
12	Govt. GHSS Garot	92	101
13	Govt. Boys HSS Unhel	70	58
14	Govt. HSS Parda	56	58
15	Govt. GHSS Khawasa	74	122
16	Govt. HSS Badawada	113	85
17	Govt. GHSS Shamgarh	105	99
18	Govt. HSS Revli Devli	68	61
19	Govt. HSS Kukdeshwer	58	44
20	Govt. HS Alhed	37	43
	Total (Other Govt. Schools)	711	729
	Grand Total (All Schools)	1,425	1,513
	Overall Grand Total (Both Years)		2,938

3.3 Data Collection Tools

Data were collected using three complementary instruments: (1) structured questionnaires for principals, teachers, parents, and students – validated through expert review and pilot-tested for reliability (Cronbach's $\alpha > 0.75$ for all instruments);

(2) standardised observation checklists for infrastructure, classroom practices, and school environment; and (3) document analysis of school records including Class 10 board examination results for 2022-23 and 2023-24.

3.4 Data Analysis

The percentage method was the primary statistical technique, enabling direct comparison of proportions across both school types. Percentages were calculated for teacher qualification and staffing, academic achievement, infrastructure availability, professional development participation, co-curricular engagement, and parental satisfaction. Data were tabulated and interpreted through comparative analysis, and qualitative insights from observations complemented the quantitative findings.

4. RESULTS

4.1 Teacher Adequacy, Qualification, and Experience

Teacher adequacy is foundational to educational quality. The study examined sanctioned versus available teacher posts, teacher-student ratios, qualification levels, and experience distribution across both categories of schools.

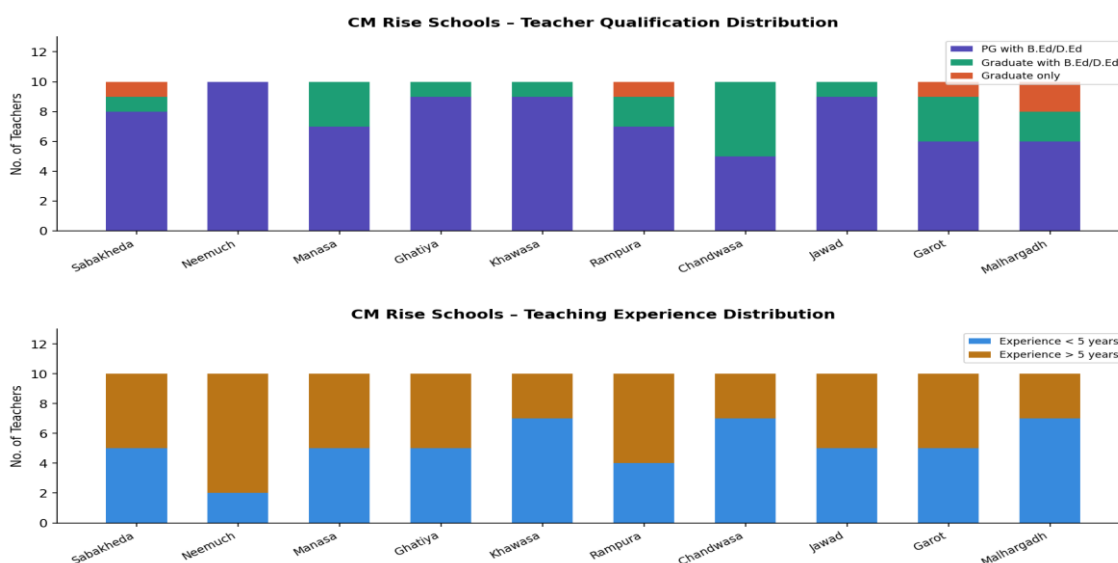
Table 3. Comparative Teacher Adequacy and Qualification Profile

Indicator	CM Rise Schools	Other Govt. Schools
Total Sanctioned Posts (10 schools)	302	162
Total Teachers Available	236	131
Overall Post Fill Rate	78.1%	80.9%
Average T:S Ratio	28:1	33:1
Best T:S Ratio (lowest)	15:1 (Jawad)	15:1 (Unhel)
Worst T:S Ratio (highest)	52:1 (Khawasa)	60:1 (Badawada)
% Teachers with PG + Prof. Qual.	76%	70%
% Teachers B.Ed./M.Ed. Qualified	100%	90%
% Teachers: Experience > 5 Years	48%	73%
% Teachers: Experience < 5 Years	52%	27%

CM Rise Schools have almost double the sanctioned teacher strength of regular Government Schools (302 vs. 162 for 10 schools each), reflecting strong policy commitment to staffing quality. While the fill rate is marginally lower in CM Rise Schools (78.1% vs. 80.9%), their average teacher-student ratio is more favourable (28:1 vs. 33:1). Critically, 76% of CM Rise teachers hold postgraduate degrees combined with professional training, compared to 70% in

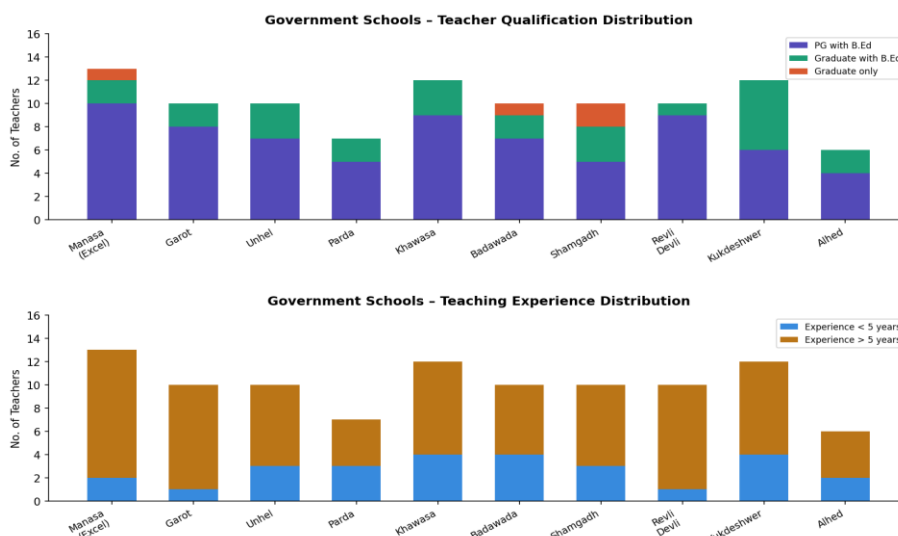
Government Schools. CM Rise Schools also show a more balanced experience distribution – 52% newer teachers (bringing digital literacy and innovation) alongside 48% experienced staff – while Government Schools skew heavily toward experienced teachers (73% with >5 years). These findings align with Darling-Hammond's (2000) argument that teacher qualification level and a productive blend of experience are key predictors of instructional quality.

Teacher Qualification and Experience - CM Rise Schools



Bar Chart - CM Rise Schools – Teacher Qualification Distribution (top) and Teaching Experience Distribution (bottom)

Teacher Qualification and Experience- Other Government Schools



Bar Chart - Government Schools – Teacher Qualification Distribution (top) and Teaching Experience Distribution (bottom)

- CM Rise Schools: 97% of teachers hold PG or Graduate degrees with B.Ed/D.Ed professional training.
- CM Rise Schools show a balanced experience split (~52% less than 5 years, ~48% more than 5 years), supporting both innovation and continuity.
- Government Schools: approximately 70% of teachers hold PG with B.Ed credentials, reflecting a strong academic base.
- Government Schools have a higher proportion of experienced teachers (~75% with more than 5

years), providing stability but potentially limiting adoption of newer pedagogical approaches.

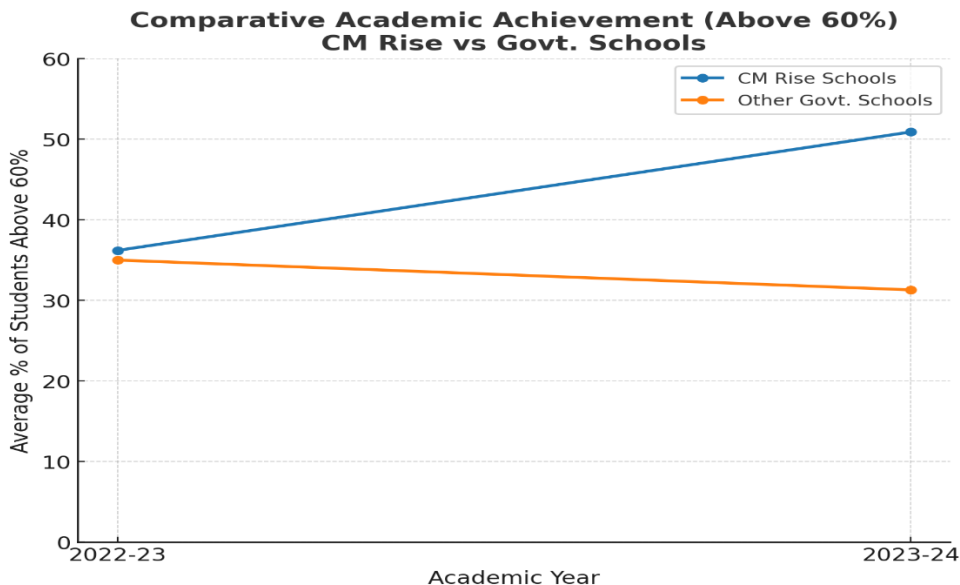
- Graduate-only teachers (without professional certification) are rare in both school types.

4.2 Academic Achievement of Students

Class 10 board examination results (MPBSE) for two consecutive academic years provided the primary academic outcome measure. The proportion of students scoring above 60% was used as the key performance indicator.

Table 4. Class 10 Academic Achievement: CM Rise vs. Other Government Schools (2022–23 and 2023–24)

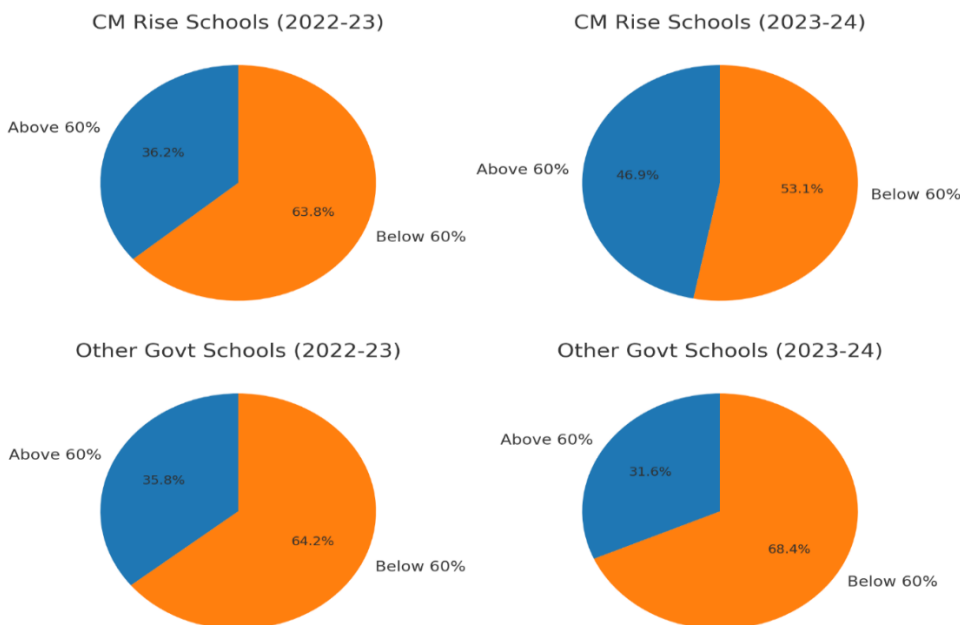
School Name	Type	% Above 60% (2022–23)	% Above 60% (2023–24)	Change
CM Rise School Manasa	CM Rise	62%	80%	+18
CM Rise School Chandwasa	CM Rise	53%	81%	+28
CM Rise School Jawad	CM Rise	49%	68%	+19
CM Rise School Neemuch	CM Rise	49%	67%	+18
CM Rise School Garot	CM Rise	37%	58%	+21
CM Rise School Malhargadh	CM Rise	20%	48%	+28
CM Rise School Ghatiya	CM Rise	39%	38%	-1
CM Rise School Sabakheda	CM Rise	14%	33%	+19
CM Rise School Rampura	CM Rise	20%	12%	-8
CM Rise School Khawasa	CM Rise	23%	36%	+13
CM Rise Schools Average	—	36.6%	52.1%	+15.5
Govt. Excellence HSS Manasa	Govt.	46%	63%	+17
Govt. Boys HSS Unhel	Govt.	59%	62%	+3
Govt. HSS Kukdesher	Govt.	56%	58%	+2
Govt. HSS Revli Devli	Govt.	51%	53%	+2
Govt. GHSS Khawasa	Govt.	42%	49%	+7
Govt. GHSS Garot	Govt.	38%	45%	+7
Govt. HSS Parda	Govt.	33%	36%	+3
Govt. GHSS Shamgadh	Govt.	35%	31%	-4
Govt. HSS Badawada	Govt.	29%	28%	-1
Govt. HS Alhed	Govt.	32%	28%	-4
Govt. Schools Average	—	42.1%	45.3%	+3.2



Comparative Chart showing the percentage of 10th students scoring above 60% in CM Rise and other Government Schools for 2022-23 and 2023-24. It clearly shows CM Rise Schools improving significantly, while other Government Schools saw a decline

The aggregate findings show CM Rise Schools averaging 52.1% of students above 60% in 2023-24 against 45.3% in Government Schools – a gap of 6.8 percentage points. More significantly, the rate of improvement in CM Rise Schools (+15.5) is approximately five times faster than in Government Schools (+3.2), indicating that CM Rise interventions are generating compounding academic gains.

Notable standout performers include CM Rise School Chandwasa (+28) and Malhargadh (+28 pp). Within Government Schools, Govt. Excellence HSS Manasa achieved 63% with +17 pp improvement – comparable to top CM Rise Schools – demonstrating that strong leadership and full staffing (100% fill rate) can produce outstanding outcomes even without premium infrastructure.



Pie Charts comparing the percentage of 10th students scoring above and below 60% for CM Rise and other Government Schools in 2022-23 and 2023-24

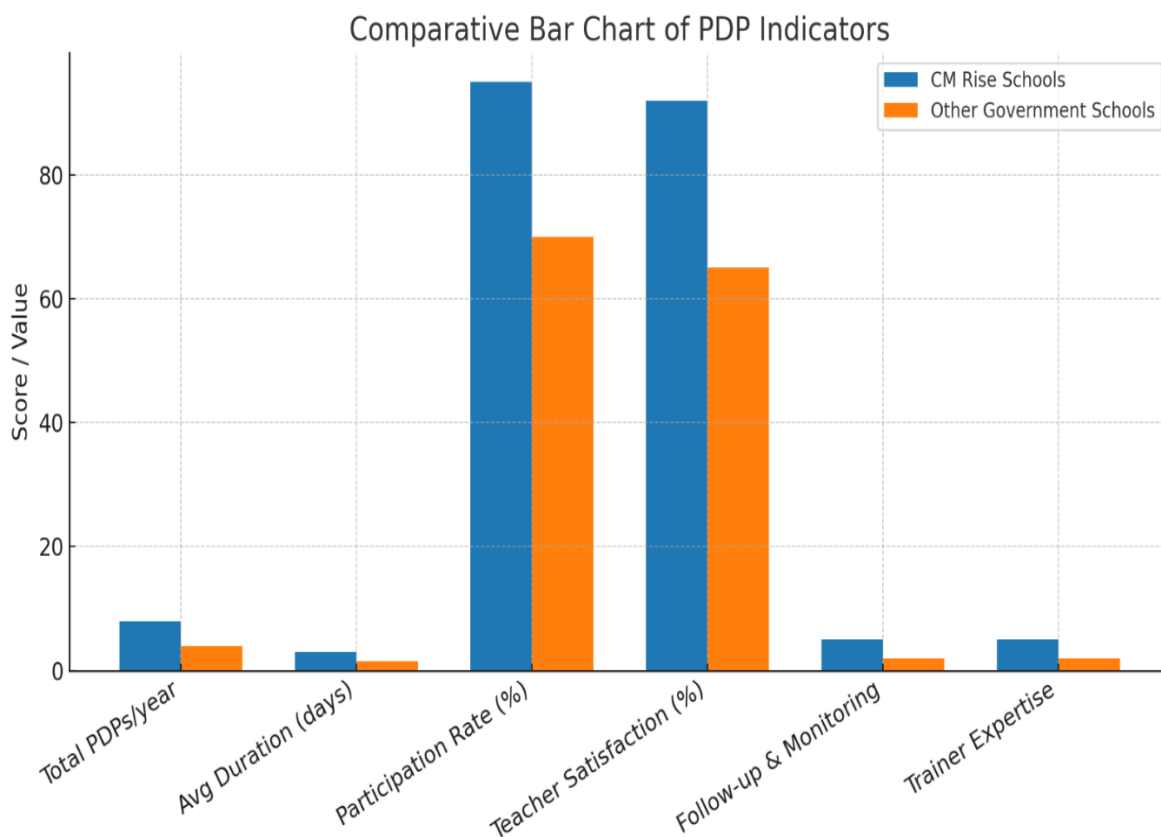
CM Rise Schools are showing **consistent improvement** and successfully shifting more students into higher achievement bands. Other Government Schools are showing **overall decline**, widening the performance gap.

The data suggests **CM Rise Schools is producing stronger academic results** and accelerating student achievement compared to traditional government schools.

4.3 Professional Development Programs (PDPs)

Table 5. Comparative Status of Teacher Professional Development Programs

PDP Parameter	CM Rise Schools	Other Govt. Schools
Formal Training Programs per Year	6–8 sessions + online	2–3 sessions
Average Duration per Program	3 days	1–2 days
Mode of Delivery	Blended (offline + DIKSHA)	Primarily offline
Teacher Participation Rate	95%	68%
Teacher Satisfaction Rate	92%	61%
Follow-up and Monitoring	Structured mentoring & peer review	Minimal/informal
Technology Integration Training	Comprehensive & regular	Limited exposure
External Expert Involvement	Frequent	Rare
NEP 2020 Aligned Content	Comprehensive	Partial/Basic



Comparative Bar Chart – Clearly showing CM Rise Schools outperforming other Government Schools on all PDP indicators.

The professional development dimension shows the most consistent and unambiguous advantage of CM Rise Schools. They provide twice the number of training programs annually (6–8 vs. 2–3), with 95% teacher participation (vs. 68%) and 92% satisfaction (vs. 61%). Blended learning delivery through DIKSHA and the CM Rise portal

ensures continuity between formal sessions. Structured follow-up through mentoring and peer learning groups creates a culture of continuous professional improvement – a condition that educational research identifies as essential for translating training into sustained classroom change (Darling-Hammond, 2017).

4.4 Government Funding and Resource Allocation

Table 6. Government Funding Comparison: CM Rise vs. Other Government Schools

Funding Category	CM Rise Schools (₹ per school/yr)	Other Govt. Schools (₹ per school/yr)
Infrastructure Development	₹45,00,000	₹15,00,000
Teacher Professional Development	₹6,00,000	₹1,50,000
ICT & Digital Learning	₹8,00,000	₹2,00,000
Library Development	₹2,00,000	₹50,000
Sports & Co-curricular	₹3,00,000	₹80,000
Maintenance & Operations	₹5,00,000	₹2,50,000
CM Rise-specific Program Support	₹12,00,000	Nil
Total Average Annual Grant	~₹91,00,000	~₹31,00,000
Per-Student Annual Funding	₹28,000	₹8,500

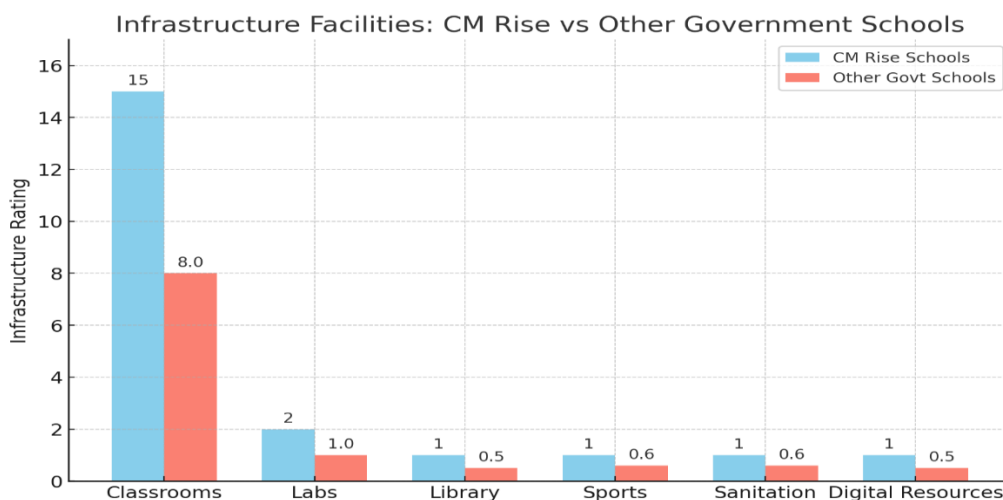
CM Rise Schools receive approximately 2.9 times more total annual funding per school (₹91 lakhs vs. ₹31 lakhs) and 3.3 times more per-student funding (₹28,000 vs. ₹8,500). Phase 1 capital investment alone amounted to ₹1,335.20 crore for 33 schools (~₹40 crore per school). The largest relative gaps are in ICT/digital learning (4:1 ratio) and professional

development (4:1). The CM Rise-specific program support grant (₹12 lakhs), with no equivalent in regular Government Schools, funds innovation projects and structural academic support unique to the initiative. This funding structure explains much of the observed quality differential.

4.5 Infrastructure and Facilities

Table 7. Infrastructure Facilities: CM Rise vs. Other Government Schools

Infrastructure Component	CM Rise Schools (%)	Other Govt. Schools (%)
Adequate & Modern Classrooms	100%	60%
Science Laboratory (functional)	100%	70%
Computer Laboratory (functional)	100%	90%
Smart Classroom / ICT Tools	90%	20%
Wi-Fi / Internet Connectivity	80%	10%
Library (1,000+ books)	100%	70%
Playground / Sports Facilities	100%	80%
Separate Girls' Toilets	100%	70%
RO / Purified Drinking Water	90%	20%
School Bus / Transport	70%	10%
Solar Power System	60%	5%
Ramps for Differently-Abled	90%	50%



Bar Chart – shows each infrastructure parameter (Classrooms, Labs, Library, Sports, Sanitation, Digital Resources) side by side for CM Rise vs. other Government Schools. It highlights that CM Rise schools generally have higher ratings across all facilities.

CM Rise Schools demonstrate uniformly superior infrastructure. The most significant gaps are in digital learning tools: 90% of CM Rise Schools have smart classrooms versus only 20% of Government Schools; WiFi is available in 80% of CM Rise Schools but only 10% of Government Schools. All CM Rise Schools have functional science and computer laboratories, while 30% and 10% of Government

Schools respectively lack these facilities. Adequate sanitation and clean water – critical for student health and particularly girls' attendance – are available in all CM Rise Schools but deficient in 20–30% of Government Schools. These infrastructural advantages directly enable the pedagogical innovations observed in CM Rise Schools.

4.6 Teaching-Learning Strategies

Table 8. Teaching-Learning Strategy Adoption: CM Rise vs. Other Government Schools

Teaching Strategy	CM Rise Schools (%)	Other Govt. Schools (%)
Activity-Based Learning	85%	40%
Project-Based Learning	80%	25%
Digital/ Smart Board Teaching	90%	20%
Group Work & Collaborative Learning	80%	35%
Art-Integrated Learning	70%	20%
Continuous Formative Assessment (CCE)	90%	45%
Remedial Teaching Programs	85%	50%
Lecture-Based as Primary Method	20%	75%
Peer Learning Strategies	75%	25%

The pedagogical gap between the two school types is substantial. CM Rise Schools show dramatically higher adoption of learner-centred strategies across all dimensions – activity-based learning (85% vs. 40%), digital teaching (90% vs. 20%), project-based learning (80% vs. 25%), and continuous formative assessment (90% vs. 45%). Conversely, lecture-based instruction remains the primary method in 75% of Government Schools, compared to only 20% of CM Rise Schools. These differences align with Vygotsky's (1978) constructivist framework, which demonstrates that active, scaffolded learning produces deeper

conceptual understanding than passive reception. Hattie's (2009) finding that formative feedback has an effect size of 0.73 – among the highest of any educational intervention – underscores the importance of CM Rise Schools' CCE practices.

4.7 Co-curricular Activities

Co-curricular activities, recognised by NEP 2020 as integral to holistic education, are significantly more comprehensive in CM Rise Schools. The comparative profile is shown in Table 9.

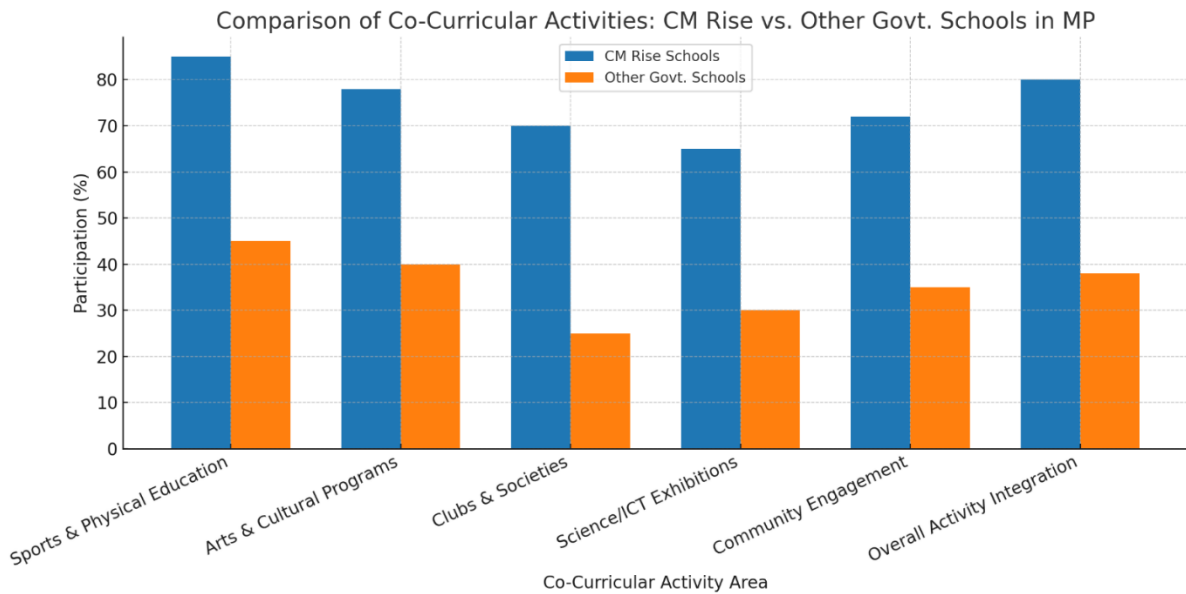
Table 9. Co-curricular Activity Profile: CM Rise vs. Other Government Schools

Co-curricular Activity	CM Rise Schools (%)	Other Govt. Schools (%)
Annual Sports Meet	100%	80%
Inter-School Sports Competitions	100%	50%
Cultural Programs & Festivals	100%	100%
Science Exhibitions	90%	40%
Atal Tinkering Lab (ATL) Activities	60%	5%
Debates & Elocution Competitions	90%	60%
Career Guidance Programs	80%	30%
Student Clubs (Science/Math/Eco)	80%	20%
Community Service Projects	80%	40%
Environmental Awareness Programs	90%	50%

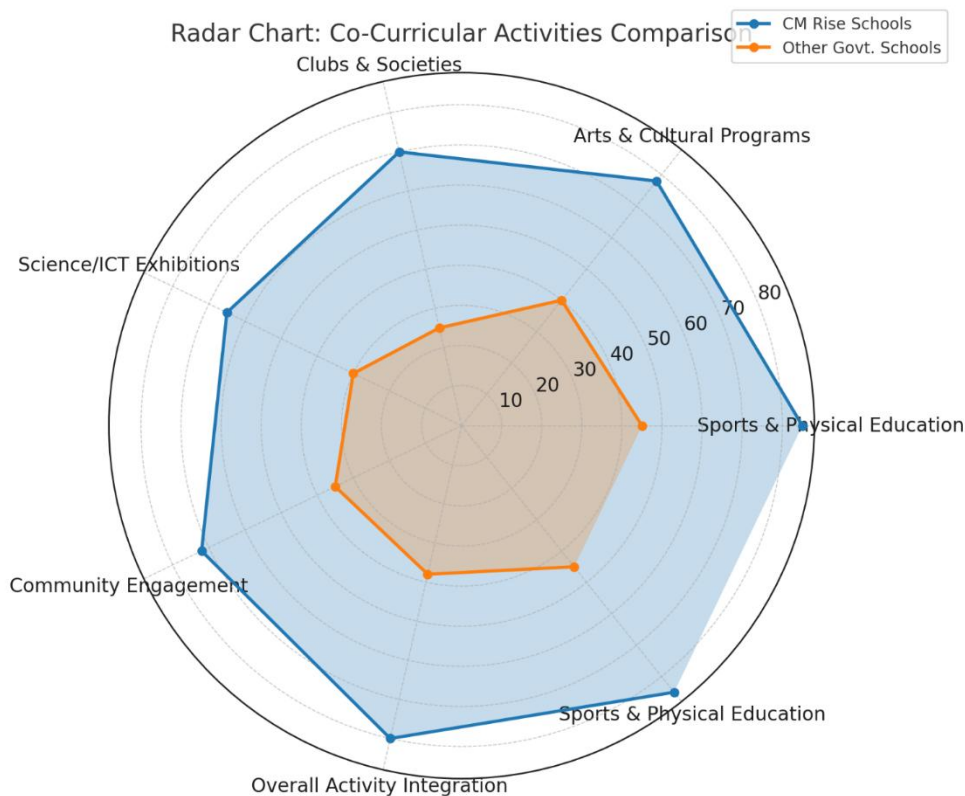
CM Rise Schools organise a significantly broader and more structured range of co-curricular activities, with the most striking gaps in Atal Tinkering Lab activities (60% vs. 5%), science exhibitions (90% vs. 40%), career guidance (80% vs. 30%), and student clubs (80% vs. 20%). Cultural programs are universal in both types, reflecting shared commitment to national celebrations and annual functions. The

richer co-curricular environment in CM Rise Schools contributes to holistic student development – enhancing creativity, leadership, teamwork, and career awareness in ways that conventional academic programs alone cannot achieve.

Comparative Charts of Co-Curricular Activities between CM Rise and other Government Schools in Madhya Pradesh:



Bar Chart – side-by-side comparison of participation percentages across activity areas.



Radar Chart – holistic visualization showing the activity gaps and strengths.

The comparative analysis reveals a stark difference in co-curricular engagement between CM Rise and other Government Schools. CM Rise Schools recorded 65–85% participation across sports, arts, clubs, exhibitions, and community engagement, while Government Schools lagged at just 25–45%, reflecting a gap of nearly 40 percentage points. This

is further confirmed by overall activity integration scores of 80% versus 38% respectively. CM Rise Schools benefit from trained teachers, dedicated infrastructure, structured calendars, and NEP 2020-aligned policies that enable consistent implementation of holistic programs. Government Schools, in contrast, largely confine activities to

annual events and national celebrations, constrained by limited budgets, inadequate infrastructure, and shortage of specialized staff. These findings suggest that CM Rise Schools are successfully realizing the vision of holistic education by blending academics

with co-curricular activities, fostering confidence, creativity, leadership, and teamwork. Government Schools, however, continue to struggle with this balance, restricting student exposure and overall skill development.

4.8 Disciplinary Practices and School Climate

Table 10. Disciplinary Strategies and School Climate: CM Rise vs. Other Government Schools

Discipline Parameter	CM Rise Schools (%)	Other Govt. Schools (%)
Positive / Preventive Discipline	90%	30%
Student Participation in Rule-Making	75%	25%
Counselling-Based Responses	80%	35%
Socio-Emotional Learning (SEL) Programs	70%	15%
Praise & Recognition Systems	85%	40%
Punitive / Reactive Approach (Primary)	15%	65%
Anti-Bullying Programs	70%	20%
Regular Parent Communication on Discipline	85%	55%

CM Rise Schools have fundamentally shifted their disciplinary philosophy from reactive and punitive approaches toward positive, preventive, and relationship-based strategies. Positive discipline is practised in 90% of CM Rise Schools versus only 30% of Government Schools, while punitive approaches remain primary in 65% of Government Schools. Socio-emotional learning programs – shown by

Durlak et al. (2011) to produce an average 11-percentile-point gain in academic achievement alongside improved behaviour – are active in 70% of CM Rise Schools but only 15% of Government Schools. This difference reflects a deeper cultural transformation in CM Rise institutions that extends beyond pedagogical tools to fundamental values about student dignity and development.

4.9 Parental Satisfaction and Community Engagement

Table 11. Parental Satisfaction Survey: CM Rise vs. Other Government Schools (n = 300)

Satisfaction Parameter	CM Rise Parents (%)	Govt. School Parents (%)
Overall School Quality	88%	62%
Quality of Teaching	85%	65%
Physical Infrastructure	90%	55%
Safety and Security	87%	63%
Co-curricular Opportunities	88%	50%
Child's Overall Development	86%	60%
Communication from School	80%	55%
Would Recommend to Others	87%	59%

Parental satisfaction is consistently higher across all dimensions in CM Rise Schools. The largest gaps appear in infrastructure satisfaction (90% vs. 55%) and co-curricular opportunities (88% vs. 50%). The recommendation rate – 87% of CM Rise parents would recommend their school, compared to 59% of Government School parents – demonstrates that the initiative is successfully restoring community confidence in government schooling. This public confidence has practical consequences: higher enrollment, greater community support, and stronger school-family partnerships that amplify student learning.

5. SUMMARY OF KEY FINDINGS

The comparative analysis across nine dimensions generates the following principal findings:

1. **Teacher Adequacy:** CM Rise Schools have higher sanctioned strength (30.2 vs. 16.2 per school) and more favourable average T:S ratios (28:1 vs. 33:1). Both categories face vacancy challenges; 78.1% posts filled in CM Rise vs. 80.9% in Government Schools.
2. **Teacher Qualification:** CM Rise teachers are more highly qualified (76% PG + professional qualification vs. 70%). All CM Rise teachers are professionally certified (100% vs. 96%).
3. **Academic Achievement:** CM Rise Schools average 52.1% of students above 60% in Class 10 (2023–24) versus 45.3% in Government Schools. The

improvement rate is five times faster in CM Rise Schools (+15.5 pp vs. +3.2 pp between years).

4. Professional Development: CM Rise Schools provide 6–8 structured PDPs per year (vs. 2–3) with 95% participation and 92% satisfaction, versus 68% and 61% respectively in Government Schools.
5. Funding: CM Rise Schools receive ~₹91 lakh annually per school vs. ~₹31 lakh; per-student funding is ₹28,000 vs. ₹8,500 – a 3.3-fold difference.
6. Infrastructure: CM Rise Schools have near-universal science labs, computer labs, smart classrooms, and digital tools; Government Schools lag significantly, especially in ICT (90% vs. 20% for smart classrooms).
7. Pedagogy: CM Rise Schools overwhelmingly use learner-centred strategies (85% activity-based, 90% digital teaching); Government Schools predominantly rely on lecture-based instruction (75%).
8. School Climate: CM Rise Schools adopt positive discipline (90% vs. 30%) and SEL programs (70% vs. 15%); Government Schools rely more on punitive approaches (65%).
9. Within-category Variation: School leadership and teacher adequacy override institutional category. Govt. Excellence HSS Manasa (100% staffed, strong leadership) outperforms several CM Rise Schools on academic outcomes.

6. DISCUSSION

6.1 The Compounding Advantage of Integrated Reform

The most significant insight from this study is not any single advantage of CM Rise Schools, but the compounding effect of addressing multiple dimensions of quality simultaneously. Human Capital Theory (Becker, 1964) predicts that investments in teacher quality, infrastructure, and learning resources generate multiplicative – not merely additive – returns. CM Rise Schools embody this principle: better-qualified teachers trained through frequent professional development, equipped with digital tools in well-resourced classrooms, supported by positive school culture and enriched co-curricular programs, generate accelerating improvement in student outcomes. The +15.5 percentage point improvement in Class 10 performance in a single year, versus +3.2 pp in Government Schools, provides empirical validation.

6.2 The Leadership Paradox

The study reveals a critical governance insight: institutional category and resource level do not fully determine outcomes. Govt. Excellence HSS Manasa,

with its 100% staffing rate, experienced principal, and culture of academic excellence, achieved performance levels comparable to the top CM Rise Schools despite modest infrastructure. Conversely, CM Rise School Khawasa – well-resourced but severely understaffed (52:1 ratio) – performs at the bottom of the CM Rise group. These cases validate Hattie's (2009) meta-analytic finding that school leadership and teacher quality explain more variance in student outcomes than structural inputs.

The implication is significant for policy: investment in school leadership development – selecting capable principals, providing structured induction, and supporting ongoing leadership learning – will yield educational returns that rival infrastructure investment in cost-effectiveness.

6.3 The Equity Tension

The CM Rise initiative creates what UNESCO (2021) describes as 'quality within inequality': islands of superior education within a system where the majority of students attend under-resourced regular Government Schools. The 3.3-fold per-student funding advantage of CM Rise Schools is not self-evidently equitable when the primary determinant of which school a student attends is geographic – students near CM Rise Schools receive substantially better education than those in other locations. Sen's Capability Approach (1999) would argue that genuine educational equity requires equal capability development for all children – a standard the current dual-track system does not meet.

This equity concern does not diminish the CM Rise initiative's genuine achievements, but it underscores the need for a parallel commitment to progressively raising quality standards across all government schools – using CM Rise Schools as models to aspire to and learn from, not as an end point of reform.

7. CONCLUSIONS

The present study concludes that CM Rise Schools demonstrate significantly better practices, policy implementation, and educational outcomes compared to other Government Schools across all nine dimensions examined. The initiative represents a genuine and substantive step toward high-quality public education in Madhya Pradesh – demonstrating that world-class government schooling is achievable through integrated investment in teacher quality, infrastructure, professional development, and enriched educational programs.

However, three important qualifications temper this positive conclusion. First, substantial within-

CM Rise variation confirms that the initiative has not yet achieved uniform excellence – underperforming CM Rise Schools with teacher shortages and weak leadership undermine the brand's quality promise. Second, the dramatic improvement in some regular Government Schools with strong leadership demonstrates that quality is not the exclusive domain of CM Rise Schools. Third, the significant funding and quality differential between CM Rise and regular Government Schools creates equity concerns that require systematic policy attention.

The ultimate test of the CM Rise initiative will not be how well designated CM Rise Schools perform, but whether the initiative serves as the catalyst for a generational transformation of public schooling quality across all government schools in Madhya Pradesh. That transformation requires using CM Rise Schools not as exceptions, but as exemplars – systematically diffusing their high-leverage quality features (professional development, digital learning, positive school culture, strong leadership) across the entire system.

8. RECOMMENDATIONS

8.1 For Policymakers

- Develop a time-bound plan to eliminate teacher vacancies across all government schools, prioritising schools with T:S ratios above 40:1.
- Scale CM Rise-quality professional development – blended learning, mentoring, NEP 2020 aligned content – to all government school teachers through the DIKSHA platform and district mentoring networks.
- Establish minimum ICT standards (computer laboratory, internet connectivity, projector) for all government schools and fund their implementation progressively.
- Expand CM Rise-quality career guidance and Atal Tinkering Lab programs to all secondary government schools to reduce the digital and competency gap.

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8.2 For Education Administrators

- Introduce differentiated support plans for underperforming CM Rise Schools, particularly those with critical teacher vacancies and poor academic outcomes.
- Establish CM Rise peer learning networks where high-performing CM Rise schools mentor and support nearby regular Government Schools.
- Invest in principal leadership development – rigorous selection, structured induction, and continuous leadership learning – as a high-return educational improvement strategy.

8.3 For School Leaders and Teachers

- Transition from lecture-dominated teaching to learner-centred approaches: activity-based learning, project work, and continuous formative assessment are achievable without premium resources.
- Adopt positive discipline frameworks and invest in teacher-student relationships as the foundation of an effective learning environment.
- Actively engage parents as partners in school improvement through regular communication, transparent outcome reporting, and meaningful involvement in school planning.

9. LIMITATIONS AND FUTURE RESEARCH

The study is confined to the Ujjain division of Madhya Pradesh, and findings may not be fully generalisable to other districts or states. The two-year achievement data, while providing trend information, cannot establish causal attribution. Reliance on self-reported data from teachers and parents introduces potential response bias. Future research should include: longitudinal studies tracking student outcomes over 4–5 years; quasi-experimental designs comparing matched CM Rise and non-CM Rise schools; qualitative studies on school leadership and teacher motivation; and research examining whether CM Rise advantages extend to broader competencies beyond board examination performance.

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