

**The Study on the Alignment Between the Findings of the National Assessment of
Student Achievement and the Efforts Made by the Government**

A Research Report

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The Study Team!

Executive Summary

This study examined the alignment of National Assessment of Student Achievement (NASA) and National Assessment for Reading and Numeracy (NARN) recommendations with policies, plans and programs developed and implemented by the federal, provincial and local government of Nepal including school level. In doing so, the team reviewed and compared the commitments made in education policy and plan documents, primarily the School Sector Reform Plan 2009-2015/16, the School Sector Development Plan 2016/17-2022/23, National Education Policy, 2019, and the School Education Sector Plan 2022/23-31/32 and several policies developed at provincial and municipal levels, with key recommendations provided by the national studies conducted by the Education Review Office, i.e., NASA, and NARN reports. This national-level study collected data from seven provinces: from three schools per province and one school each district covering 21 schools from the same number of districts. The study employed a mixed-methods research design, integrating both quantitative and qualitative approaches. The data were collected through surveys with 245 teachers and 21 Focus Group Discussion with teachers teaching at grades 3-10, Key Informant Interviews (KIIs) with seven local education officers, seven trainers from education training centres, and interviews with 21 head teachers. Quantitative data were analysed using statistical tools, while qualitative data were thematically analysed to capture the nuanced insights. Key findings have been drawn on the data from both qualitative and quantitative sources as briefly reported below.

Key Findings

This study reports the following key findings.

- While national education policy and plans commitments including those mentioned in SSRP, SSDP, NEP, and SESP conceptually align with the findings from NASA and NARN by prioritizing quality, equity, and access through strategic interventions like curriculum revision, teacher professional development, and targeted support for disadvantaged groups and community schools, a significant gap persists between policy intention and their effective implementation.
- Specifically, despite policy provisions and commitments expressed in national education plans and programs in terms of timely supply of textbook, implementation of mother-tongue instruction, and creation of safe learning environments, challenges

such as textbook availability on time, less priority on mother-tongue education, and high rates of bullying continue to affect the achievement of the intended progress.

- National assessments conducted in Nepal (NARN, 2020, 2024 Grade 3 and NASA 2017-2022 of Grades 5 and 8, and Grade 10 in 2019-2023) revealed that the students' have positive attitude towards schools' learning environment, and these tests measure students' latent ability, not only learning achievement scores, significant challenges continue to exist across all grades and subjects, particularly in development of foundational literacy and numeracy skills. Some results are alarming. For example, Grade 3 NARN findings highlighted an urgent need for literacy interventions, with very low oral reading fluency revealing that 10.20% students were unable to read one word in one minute. While students show some strength in oral numeracy and practical currency tasks, weaknesses persist in dictation and recognition of arithmetic signs. This low-performance situation was associated with several factors such as socio-economic backgrounds, use of home languages, screen use time, parental support and headteacher qualifications.
- NASA Grade 5 results indicated a general decline in Mathematics achievement from 2018 to 2022, though Nepali showed some positive shifts towards basic and proficient levels, with girls outperforming boys in assessments conducted in 2022. In English language subject, performance in Grade 5 in 2022 showed that students from Bagmati province outperformed and showed a significant gap between institutional and community schools.
- For Grades 8 and 10, the results of the NASA showed a decline in mean score in the core subjects like Mathematics and Science, with notable provincial disparities and a consistently high performance in institutional schools. Studies also indicated that boys' outperformed girls in these subjects, whereas girls showed greater improvement in Nepali in Grade 5 and 10.
- The NASA and NARN studies revealed a critical learning gap characterized by a low student competence, a low level of performance in questions of higher-order thinking skills. Further, the studies consistently highlighted equity issues in learning achievement as reflected in the persistent achievement gaps across various demographics and school types.
- This study showed that awareness and application of national assessments like NASA and NARN vary significantly among educators and across school contexts,

highlighting a need for effective communication of the study results to relevant stakeholders to help make them informed choices in their everyday decisions and practices.

- Teachers are prioritizing the use of local, hands-on materials for reading and numeracy, to help struggling learners. However, they reported unfavorable working conditions such as the excessive teaching responsibilities and limited opportunities for professional development which hindered their ability to enhance their knowledge to improve their daily instructional practices.
- Schools reported that they have made several efforts to foster supportive and equitable learning environments, actively discouraging bullying and providing additional support for disadvantaged students.
- Teachers regularly use formative assessment and provide feedback to support students, but there's some areas of improvement for consistently adapting instructional strategies based on assessment results.
- Technology use in classrooms is modest, with teachers prioritizing traditional resources over digital tools due to concerns about misuse and potential digital divides, despite using mobile phones for lesson preparation.
- Teachers consistently employ a range of student-centred and interactive strategies, demonstrating a strong commitment to fostering active student participation and addressing diverse learning needs.
- Teacher reported student-centred teaching methods such as discussion, problem-solving and project-based methods are in use though there is less emphasis on inquiry-based activities constrained by classroom situations and resource availability.
- Although language barriers continue to impact students' learning, in most cases both students and teachers were comfortable with the use of the Nepali language as the medium of instruction. In some cases, the local languages were used by teachers and students in classroom interaction. However, systematic integration of languages in meaningful learning was a much-needed initiative which was also highlighted in previous studies.
- While teachers are resourceful in using available materials, school-provided resources are often insufficient, particularly digital tools, leading to reliance on traditional methods or personal initiatives.

- Teachers reported that they are committed to continuous monitoring and providing personalized feedback, yet there's a need to diversify assessment methods and standardize structured approaches to test planning and result analysis.
- Teachers actively intervene in bullying incidents and foster positive peer relationships, but systemic support is lacking, with significant gaps in clear school policies, reporting mechanisms, provisions of ethical protocols for students and teachers.
- Teachers are personally motivated to engage in and apply research to improve their instruction, but there's lack of robust institutional support and encouragement for formal action research within schools.
- Current professional development opportunities are perceived as insufficient and irregular, with a significant demand for more relevant, frequent, and technologically advanced training tailored to teachers' needs.
- Despite proactive efforts by teachers to communicate directly with the parents and engage them in the school activities as well as for learning their children, the involvement remained low, often due to significant socio-economic barriers.
- There's a significant disparity in the availability and effective integration of digital resources, with many schools' lacking adequate investment and providing insufficient training for students in tool usage.

Key Recommendations

The study reports the following key recommendations.

- Disseminate NASA and NARN reports widely across provinces, local levels and schools with targeted training on their interpretation and implementation for data-informed decision-making. This can be done through preparation of shorter summary reports in Nepali (and if possible, in other national languages) and sharing them through social and public media; make it public and encourage the local levels to discuss these findings during the headteacher meetings, instructional planning sessions, and during the teacher professional development activities.
- Prioritize frequent, needs-based training in promoting early-grade reading and numeracy strategies, effective technology integration (including AI tools), and preparation of context-specific and simplified learning materials.
- Increase institutional support for teachers to conduct action research. There are many small schools, where alternative instructional strategies could be explored, to support

the under-performing students. Help teachers to regularly support and monitor these students, encourage them to have better communications with the parents.

- Implement comprehensive training for both teachers and students on effective digital resource use, while also supporting the creative use of local and self-made materials.
- Develop and clearly communicate comprehensive school-wide policies for bullying prevention and intervention, including robust reporting mechanisms about school progress to the upper level.
- Implement regular awareness programs on all forms of bullying for students, teachers, and parents.
- Mandate formal, systematic processes for result analysis at all levels to ensure data-driven instructional improvement.
- Promote the effective use of diverse and alternative assessment methods such as presentation, workshop, seminar etc. alongside traditional tests to ensure equitable learning for all children.
- Promote consistent incorporation of local languages in instructional activities to enhance comprehension and inclusion. This can be done by following the multilingual resources prepared by governmental and non-governmental organizations.
- Develop diverse and flexible strategies to enhance parental engagement, addressing socioeconomic factors, literacy levels and their motivation.
- Strengthen monitoring and evaluation systems and foster formal collaboration mechanisms with external stakeholders for resource mobilization and program implementation.

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Abbreviations and Acronyms

Abbreviation	Full Form
AfL	Assessment for Learning
AoL	Assessment of Learning
CAS	Continuous Assessment System
CDC	Curriculum Development Centre
CEHRD	Centre for Education and Human Resource Development
CRT	Criterion Reference Test
CTT	Classical Test Theory
EDCU	Education Development and Coordination Unit
ERO	Education Review Office
FGDs	Focus Group Discussions
IEA	International Association for the Evaluation of Educational Achievement
IRT	Item Response Theory
KII	Key -Informant Interview
LEO	Local Education Officer
MoEST	Ministry of Education, Science and Technology
NARN	National Assessment for Reading and Numeracy
NASA	National Assessment of Students Achievement
NCF	National Curriculum Framework
NEP	National Education Policy
OECD	Organization for Economic Co-operation and Development
ORF	Oral Reading Fluency
PISA	Programme for International Student Assessment
PO	Provincial Officer
PTA	Parents Teachers Association
SDG	Sustainable Development Goals
SEL	Social Emotional Learning
SESP	School Education Sector Plan
SMC	School Management Committee
SSDP	School Sector Development Plan
TIMSS	Trends in International Mathematics and Science Study
ECED	Early childhood Education and Development
NER	Net Enrolment Rate
NEB	National Examination Board

Chapter I

Introduction

Background of the Study

National assessment practices in Nepal began in the late 1980s. However, the Ministry of Education officially conducted small-scale National Assessment only in 1995 and this tradition was continued until 2010. School Sector Reform Plan (SSRP) (2009-2015) set the plan to conduct national studies on learning assessment on a large scale (MoE, 2009). The Education Review Office (ERO) was established to execute the plan of SSRP in 2010 and it has been conducting the NASA since 2011 to evaluate the learning achievement of students in various grades. Initially, NASA was conducted in specific subjects for Grade 3, but since 2018, the grade 3 has been replaced by the National Assessment for Reading and Numeracy (NARN) for Grade 3. For Grades 5, 8, and 10, NASA used Classical Test Theory (CTT) and Item Response Theory (IRT) from 2017, enhancing the comparability of assessment results across grades and over time. The primary objective of NASA and NARN is to determine students' achievement levels in the assessed subjects at both national and provincial levels. These assessments also identify factors affecting students' learning, with the aim of improving educational outcomes through the implementation of recommendations provided in the NASA reports.

Similar to NASA, other countries also conduct national and international assessments to evaluate student achievements at different grades levels and age groups. For instance, the Programme for International Student Assessment (PISA) is conducted by the Organisation for Economic Co-operation and Development (OECD) to measure 15-year-old students' ability to use their reading, mathematics, and science knowledge and skills to meet real-life challenges (OECD, 2024). PISA provides valuable data that helps countries understand the strengths and weaknesses of their education systems and informs policy decisions in education (OECD, 2024).

The Trends in International Mathematics and Science Study (TIMSS) measures the mathematics and science achievement of students in Grades 4 and 8 in every four years. TIMSS data are used to compare educational achievement across countries and to identify best practices in education (IEA, 2024). Both PISA and TIMSS have influenced educational policies and practices worldwide by providing evidence-based insights into student performance and the factors affecting learning outcomes (OECD, 2024; IEA, 2024). These assessments, like NASA, aim to improve educational outcomes by identifying areas for improvement and guiding policy interventions.

NASA and NARN studies conducted in different grades and subjects have given subject-wise and grade-wise recommendations. But how these recommendations have been incorporated in different national policies and implemented has not been explored. So, this study aimed to bridge the gap and explore alignment between NASA's findings and the Nepal government's efforts to improve education in line with the recommendations made, providing valuable insights to enhance the effectiveness of educational policies and programs in Nepal. This study has focused on analyzing NASA and NARN results, reviewing education policies and programs such as National Education Policy (NEP), the School Sector Development Plan (SSDP), and the School Education Sector Plan (SESP), and assessing the extent to which these policies and programs have responded to NASA's recommendations. The research has involved a comprehensive review of relevant documents, data collection through various methods, and the organization of workshops and review meetings with key stakeholders to ensure thorough analysis and actionable recommendations for consideration of the government and non-government sectors in developing future policies.

Objectives of the study

The objectives of this study are:

- Analyse subject-wise NARN and NASA results, comparing them with recommendations for grades 3, 5, 8, and 10 across different years.
- Review the Government of Nepal's education policies and programs, particularly School Sector Development Plan (SSDP), and School Education Sector Plan (SESP), and School Education Sector Plan (SESP), and assess their alignment with NASA results and recommendations at the federal, provincial, and municipal levels.
- Evaluate the priorities established within education policies and programs, and their implementation, in relation to NASA results and recommendations.

Scope of the Work

The scope of this research is conceptualized at three levels thematic, temporal and geographical as outlined below.

- The study focuses on analyzing findings of NASA and NARN with reference to National Education Policy and plans (SSDP and SESP) and their priorities.
- The study specifically covers NASA and NARN recommendations from 2017 onwards, specifically focusing on assessments since the implementation of IRT-based NASA in 2017 and NARN in 2020.
- The study covers all seven provinces with fair geographical representation (3 schools from each province) as sample sites.

Significance of Study

This study holds significant value in the context of improving educational quality, accountability, and policy responsiveness in Nepal. By systematically analyzing the NASA and the NARN findings, and examining their alignment with national education policies and programs such as the School Sector Development Plan (SSDP), the School Education Sector Plan (SESP), and the National Education Policy (NEP), the study provides critical insights into how evidence from large-scale assessments can and should inform educational planning and implementation.

National assessments like NASA and NARN are key tools for evaluating learning outcomes and identifying systemic issues that may hinder student performance. However, their potential is fully realized only when the findings are used to guide policies, allocate resources, and support teaching and learning improvements. This study seeks to assess whether such a feedback loop exists in Nepal and how it might be strengthened.

The study also holds significance in the context of Nepal's federal structure, where educational planning and implementation responsibilities are now shared among federal, provincial, and municipal governments. By examining the alignment and implementation of policy responses across all three levels, the study contributes to the discourse on decentralized education governance, highlighting gaps and proposing improvements in intergovernmental coordination and accountability mechanisms.

Finally, the study offers ideas for future improvements. It shows how test results can be used to guide reforms, train teachers, and improve schools. It can also help development partners and policymakers design better, data-driven education programs that fit Nepal's unique needs.

Chapter II

Review of Literature

This chapter presents a synthesized review of literature related to international and national level assessments of students' achievements. This chapter covers review of Programme for International Student Assessment (PISA), Trends in International Mathematics and Sciences Study (TIMSS), NASA and NARN, reviews assessment trends and school environment and learner engagement strategies adopted in relation to the assessment systems.

Concept and Essence of Large-Scale Assessments

Large-scale assessments (LSAs) are considered as systematic and standardized testing generally conducted at international, regional or national levels to assess the performance of students under the given educational systems (OECD, 2014; UNESCO, 2021). Contrasting regular grade-based examinations that are designed to specific students or schools, LSAs are designed to assess across a broad population of students, in order to inform policy reform, monitor equity in education, and recommend key strategies to improve learning outcomes at a systemic level (Mullis & Martin, 2017). Generally, LSAs are conducted by international associations or governmental organizations and typically include subject specific test items covering lower order thinking skills to higher order thinking skills as well as non-cognitive indicators like background of the students, school environment, and teaching-learning processes (OECD, 2019).

The notion of LSA is deep-rooted in the accountability and evidence-based policy movement in education. As Linn (2000) argues, LSAs offer valuable benchmarks that allow authorities and national policymakers to determine whether educational goals are being met and to detect inequalities in performance based on regions, socio-economic status, and/or types of schools. LSAs serve both evaluative and diagnostic functions by generating result that can provide important information for curriculum change, teacher training, and resource allocation (Kellaghan & Greaney, 2001). Moreover, Programme for International Student Assessment (PISA), Trends in International Mathematics and Science Study (TIMSS), and Progress in International Reading Literacy Study (PIRLS) are considered as globally accepted large scale assessment system in comparing educational performance across countries and enabling global discourse on quality education (OECD, 2013; Mullis & Martin, 2019) whereas NASA in Nepal has been conducted to identify the achievement level of

students in specific subject and provide actionable recommendation to fill the gaps in the achievement based on regional, socioeconomic and other factors (ERO, 2022).

The prime objectives of LSAs are multilayered. The first and most important objective is to monitor the performance of students in key curricular areas and evaluate the effectiveness of education systems based on the performance of students (UNESCO, 2021). The performance analysis does not only track the student's progress but also helps to compare national level performance with international educational targets including Sustainable Development Goal in education (UNESCO, 2016). Secondly, LSAs are intended to identify gaps and inequality in learning outcomes among different population subgroups and thus provides evidence for target group intervention and equitable policy change (Greaney & Kellaghan, 2009). Finally, LSAs procedures strengthen the capacity of stakeholders to conduct national assessment in future, improve data literacy among stakeholders and fostering a culture of monitoring and continuous improvement (UNESCO, 2013).

In conclusion, large-scale assessments can work as key instruments for educational accountability, maintaining inclusivity in education, and for the improvement in system. Their growing importance in global education policy reflects a shared promise to data-driven decision-making. However, the successful and worthwhile application of LSAs demand a balanced approach that values local contexts, enhance stakeholder engagement, and provide attention on learning over measurement.

Large-scale Assessments: PISA and TIMSS

The PISA, coordinated by the OECD, is a triennial international survey designed to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students. Unlike traditional curriculum-based assessments, PISA focuses on the application of knowledge in real-world contexts, particularly in reading, mathematics, and science. Its design incorporates computer-based adaptive testing, within-construct matrix sampling, and comprehensive background questionnaires. In the 2022 cycle, PISA included core questionnaires for students and school principals, and optional ones for teachers, parents, and specific topics such as financial literacy, ICT familiarity, and well-being. The student questionnaire captured variables including socioeconomic status, school climate, learning strategies, teacher support, instructional exposure, and students' beliefs and emotions about learning. The administration process was rigorous, involving field trials, version comparisons, and psychometric validation of items to ensure cross-national comparability and analytical precision (OECD, 2024).

TIMSS assessments are fundamentally designed to provide valid and reliable measurement of mathematics and science knowledge and skills that are internationally valued which covered fourth students from 51 countries and eighth grade students from 39 countries. A core principle of TIMSS is to measure trends in educational achievement over time by largely keeping assessment content consistent across cycles, while also updating items to reflect contemporary contexts and current learning goals. This involves a cyclical process of developing new items alongside retaining "trend items" from previous assessments, with each TIMSS assessment cycle preparing the equivalent of four different assessments (two subjects at two grades). TIMSS 2023 marked a significant evolution as the first cycle where new assessment content was developed exclusively for computer-based assessment, furthering the digital transition that began in TIMSS 2019 and integrating innovative digital item formats, including problem-solving and inquiry tasks. The development of these achievement instruments adheres to best practices in assessment design, including clearly defining the target construct, specifying necessary items, establishing standards for item and test form construction, and ensuring alignment with detailed frameworks, supported by principles of evidence-centred design and recognized testing standards (IEA, 2024).

In contrast, the NASA, administered by the Education Review Office (ERO) in Nepal, adopts a curriculum-referenced national assessment framework aimed to measure educational outcomes of the students in grades 5, 8 and 10. In general, NASA is designed to provide evidence for policy reform, rather than student-level certification although the findings and recommendations are drawn on the students' latent abilities. The assessments are based on a criterion-referenced test (CRT) model and utilize item response theory (IRT) to identify students' ability. NASA also introduced proficiency levels in each subject, allowing classification of students' proficiency from pre-basic to advanced levels. The contextual variables explored included gender, province, ethnicity, home language, school type, socioeconomic status, and school/home learning environment. Although NASA's contextual questionnaires are robust within national limits, the approach remains largely paper-based, with less frequent administration and limited interlinkage of contextual variables with cognitive performance compared to PISA. While compared to the PISA, NASA has adopted a more contextually appropriate variables from Nepal. Meaning that although both tests have similar goals, the NASA is largely a nationally contextualised testing system. The review of these assessment systems shows that several institutional, societal and individual factors affect students learning experiences and achievements.

National Level Assessment Traditions and NASA

The assessment process in Nepal has undertaken gradual yet notable shifts over the past three decades, moving from a largely examination-based summative model to a continuous formative and inclusive model. Conventionally, assessment in Nepal is understood as a pen-and-paper-based examination held at a fixed time duration, especially at the end of academic years. These summative assessments mainly focused on grading, certification, grading, and classroom promotion of students. Regarding large scale assessment, assessment practices in Nepal began to emerge in the late 1980s, but it wasn't until 1995 that the Ministry of Education formally initiated the National Assessment, which ran on a small scale until 2010. Since 2011, the large-scale NASA has been administered by the Ministry of Education. Four cycles of NASA are completed under the School Sector Reform Plan (SSRP), and three, including NASA 2020 and NASA 2022 have been conducted under the School Sector Development Plan (SSDP). In both plans, NASA is regarded as a tool for evaluating the quality of education and holding educational institutions accountable for meeting educational objectives. Reflectively, they aim to build a database for analyzing the strengths and weaknesses of educational policies and practices that influence student learning outcomes (ERO, 2018, 2019, 2022).

Different NASA results have recommended to reform assessment practices and focus on formative types assessment strategies. In recent years, policy reforms, curricular shifts, and international influences have contributed to a rethinking of assessment practices in schools. This shift was further reinforced by the National Curriculum Framework (NCF) of Nepal, which emphasized assessment as a means to develop the graduates who have 21st century skills rather than merely certify them (MoEST, 2019). In line with NCF, the Curriculum Development Centre (CDC) introduced assessment strategies that included attendance, homework, classroom participation, project work, and practical activities besides written examinations as assessment strategies (CDC, 2019). These strategies reflected the principles of assessment for learning (AfL), though their practical implementation remains under-researched.

The role of the Education Review Office (ERO) has been central in highlighting the limitations of traditional assessment practices. ERO's NASA and NARN repeatedly identified low student performance in mathematics and science, pointing to the ineffectiveness of content-heavy assessments and the lack of diagnostic feedback mechanisms in classrooms (ERO, 2015, 2019, 2022, 2023). These findings have pushed stakeholders to re-examine the quality and relevance of assessments, particularly in

mathematics education, where fairness, validity, and learner diversity have often been neglected.

Another noteworthy impact on assessment reform in Nepal comes from large-scale assessment practices internationally, particularly TIMSS and PISA, though Nepal has not yet participated in these tests. However, these worldwide frameworks have shaped national discourse on competency-based learning. For instance, the Global Partnership for Education (GPE) and other international development partners have been encouraging assessment tools that evaluate problem-solving, collaboration, and creativity. Nepal's School Sector Development Plan (SSDP 2016–2023) echoes this direction by advocating for alternative and inclusive forms of assessment and by strengthening national capacity to monitor learning outcomes using valid indicators (MoEST, 2016).

School Environment and Learner Engagement

Learner engagement has been widely recognized as a cornerstone of effective teaching and learning. Engagement in learning increases interest, enhances attention, and minimizes negative emotions such as frustration (Fielding-Wells & Makar, 2008; & Shulman, 2002). It plays a pivotal role not only in students' academic achievement but also in their emotional and behavioural development (Christenson et al., 2012; Klem & Connel, 2004). In subjects like mathematics, where abstract thinking and continuous practice are integral, learner engagement becomes even more critical (Lehtinen et al., 2017). Cognitive engagement in particular requires students to access, retain, and apply information to solve problems, while affective and behavioural engagement encompass emotional involvement and active participation (Fredricks et al., 2004).

However, learner engagement does not exist in a vacuum; it is profoundly influenced by the broader school environment and the well-being of students. A positive school environment, characterized by safety, respect, inclusion, and supportive relationships, significantly enhances students' sense of belonging, self-efficacy, and willingness to engage in learning tasks. Research shows that when students feel emotionally and physically safe in school, they are more likely to participate in classroom activities, persevere through academic challenges, and develop stronger academic identities (Thapa et al., 2013; OECD, 2015).

One crucial aspect of ensuring a conducive environment is the implementation of anti-bullying strategies at school. Bullying and peer victimization are detrimental to student well-being and have been shown to significantly lower academic engagement and performance (Swearer et al., 2010; Juvonen et al., 2011). Schools that actively implement anti-bullying

policies and promote a culture of empathy and inclusion contribute to reduced stress levels, improved peer relationships, and greater student motivation. These protective factors reinforce the learner's emotional and behavioural engagement (Espelage et al., 2018).

Furthermore, the integration of social-emotional learning (SEL) into the curriculum, emphasizing self-awareness, empathy, and interpersonal skills that can promote an environment where students feel valued and are more likely to take academic risks and participate meaningfully in learning (Gimbert et al., 2023). According to Durlak et al. (2011), school-based SEL programs improve not only emotional well-being but also academic outcomes, demonstrating a clear link between emotional support structures and performance.

The issue of students' engagement and well-being, and school environment is also contextual in the context of Nepal, where resource limitations, digital divides, and cultural challenges exist. Guaranteeing student wellbeing through targeted interventions such as anti-bullying initiatives, inclusive teaching practices, and emotionally responsive pedagogy can enhance learner retention, reduce drop-out rates, and improve performance. Thus, systemic support is essential to maximize the benefits of learner-centered pedagogy.

While Nepal has administered the NASA and NARN on several cycles, the existing literature on national and international practices on large scale assessment reveal a persistent gap between the results of these LSAs and effort made by government to enhance students' learning at different levels. Even though NASA and NARN have continuously identified areas of low student performance and systemic inequities, in specific subjects and regions, there is little evidence that these insights have been fully incorporated into programmatic interventions, policy priorities, and implementation frameworks like the School Education Sector Plan (SESP) and the School Sector Development Plan (SSDP). Additionally, NASA is still underutilized in forming formative procedures and curriculum modifications, despite the fact that foreign models such as PISA and TIMSS have impacted Nepal's assessment discourse. This study further explores the gaps in the policy and practices by examining NASA and NARN results by subject across grades and years, reviewing policy documents for alignment and assessing the actual implementation of policy responses at the federal, provincial, and local levels. By doing this, it helps close the gap between evidence and policy, improves the usefulness of assessment results in educational planning, and fortifies Nepal's ability to use evidence-based approaches to enhance the learning achievement of students as expected in the curriculum

Chapter III

Methodology

This chapter presents the research design, population and sample, methods and tools of data collection and data analysis, quality standards and ethical protocol maintained in this study.

Research Design

This study adopted a mixed-methods approach, incorporating both quantitative and qualitative research methods. Policy documents, School Sector Reform Plan (SSRP), School Sector Development Plan (SSDP), and School Education Sector Plan (SESP) were analysed against NASA, NARN, and ELDS reports published by ERO. To fulfil the objective of analysing subject-wise NASA and NARN results in comparison with national recommendations, this study reviewed and synthesized data from recent assessments. Specifically, we examined the NARN 2020 and 2024 report alongside NASA results for Grade 5 (2018 and 2022), Grade 8 (2017 and 2020), and Grade 10 (2019 and 2023). Data collection involved surveys, Key Informant interviews, and Focus Group Discussions with stakeholders (teachers, head teachers, Local Education Officers (LEOs), and training centre officers) across the Mountain, Hill, and Terai regions of Nepal.

Research Sites and Sample

The study covered all seven provinces of Nepal with each province consisting of three schools as research sites. Twenty-one schools were selected from 21 districts with one school from each district. Three schools from each province representing a well-resourced school, a medium-resourced school, and an under-resourced school determined after the consultation with EDCU. Further details of the sampled schools, districts, and provinces are presented in Figure 1.

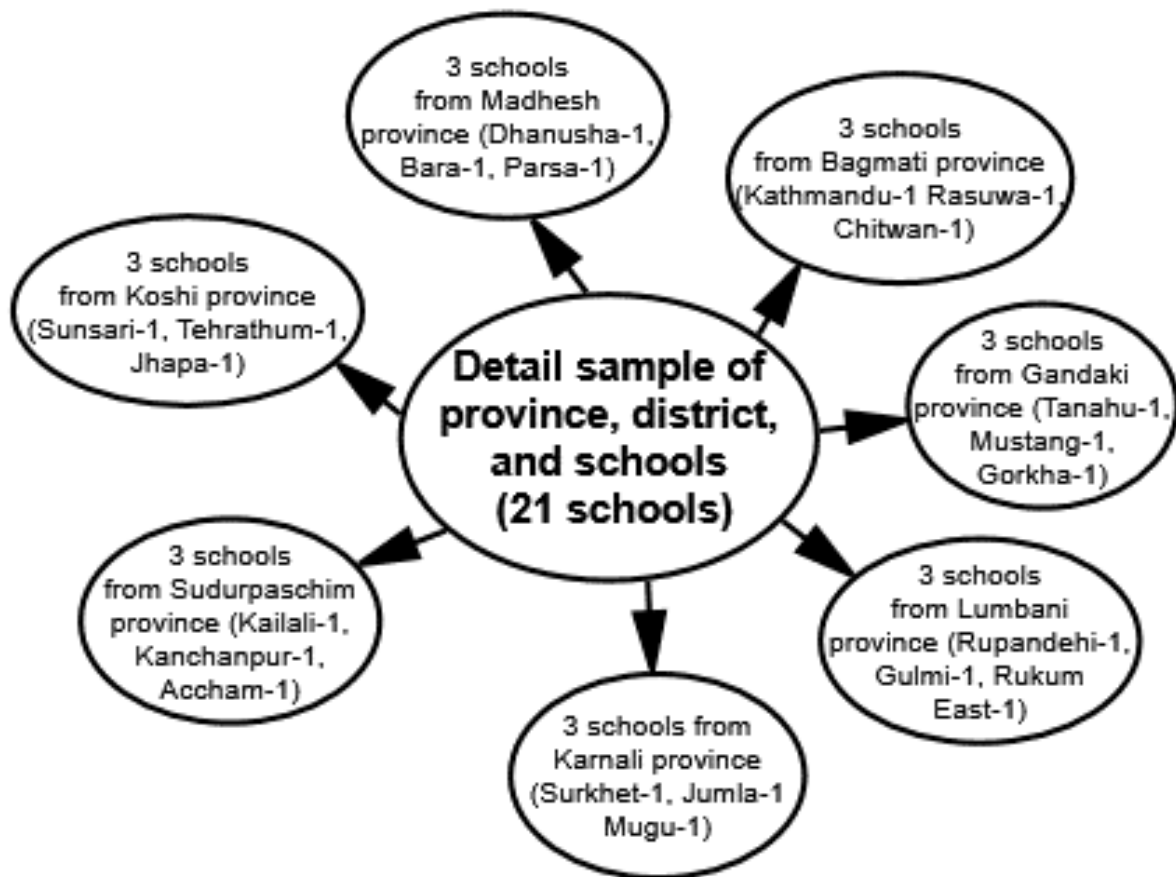


Figure 1 Details of sample school, district, and province

Data Collection Tools

Surveys, KIIs and FGDs were used to collect the data (see Annexes). These tools were finalized after the consultation meetings with ERO experts.

Methods of Data Collection

This study collected data through interviews and focus group discussions (FGDs) with teachers, head teachers, local-level education officers, and training centre experts. From 21 selected schools across 21 districts and seven provinces of Nepal, teachers from Grades 3, 5, 8, 9 and 10 were interviewed. Grade 3 teachers were specifically interviewed to explore their classroom practices in alignment with the recommendations from the NARN report. KIIs were conducted with 84 teachers from 14 schools, including two teachers from Grades 3, and subject-specific teachers (Nepali, English, Math, and Science and Technology) teaching in Grades 5, 8, 9 and 10. A total of 14 FGDs were conducted from which 7 FGDs were from grade 5 teachers belonging to Nepali, Maths, Science and English and grades 8 to 10 from same subjects. Quantitative surveys were conducted in all 21 schools. Moreover, KIIs were conducted with 14 Local Education Officers (two from each province), 21 Head Teachers (one from each school), and 7 Education Training Centre Officers. Fourteen Focus Group

Discussions (FGDs) were held with teachers two from each province each consisting of 5–6 members from different subjects. One FGD was conducted for basic school teachers and another for high school teachers in each province.

Additionally, FGDs were conducted with experts from the CDC, ERO, and CEHRD to discuss the findings of the NASA report, its dissemination, the implementation of its recommendations, and the broader educational transformation in Nepalese schools. Similarly, interviews and FGDs were undertaken with Science, Mathematics, English, and Nepali teachers of Grades 5, 8, and 10 to examine their teaching practices and the extent to which they have implemented the recommendations from the NASA reports. Moreover, policy documents such as the SSRP, SSDP, and SESP were reviewed in relation to the NARN and NASA reports to assess the alignment between these reports' recommendations and national education policies.

Table 1 Details of data collection method

Method	Description
Desk review	The desk review focused on analyzing curriculum and literature related to the NASA and the National Assessment for Reading and Numeracy (NARN) for grades 3, 5, 8, and 10. Furthermore, we reviewed other relevant policy documents, curricular frameworks, and previous studies conducted by the National Examinations Board (NEB), Education Review Office (ERO), Early Childhood Development (ECD/ELDS), Centre for Human Resource Development (CEHRD), Ministry of Education, Science and Technology (MoEST), and other relevant sources to support our analysis. This comprehensive desk review provided a foundational understanding of existing policies and priorities, as well as previous research findings. Based on this, we developed a conceptual framework to guide tool development, fieldwork, and data analysis.
Survey	In total 245 teachers (65 teachers from Grade 3 and 180 teachers from Grade 5, 8, and 10) were participated in the survey from 21 selected schools.
KII/FGD	The research adopted a bottom-up approach. Key Informant Interviews (KIIs): Local Education Officers: KIIs were conducted with local education officials, selected in consultation with Education Development and Coordination Units (EDCUs) and as advised during review and consultation meetings with the Education Review Office (ERO). School selections were adjusted in consultation with Local Level Education Officials. ○ Number: 14 (two from each province)

	School Level: Subsequently, school visits and KIIs were conducted with head teachers and subject teachers to explore existing practices and program status, challenges, and best practices within the schools, identifying their strengths, gaps, and potential improvements. ○ Head Teachers: 21 (one from each selected school) ○ Teachers: A total of 42 teachers were interviewed (from 14 schools, 6 teachers per school: two teachers (one math and one Nepali teacher) from grades 3 and 4 subject-specific teachers (Nepali, English, Math, and Science and Technology) teaching in grades 5-10). District and Provincial Levels: Further KIIs were conducted at the district (EDCU) and provincial (Education Training Centre, Ministry of Social Development) levels, as deemed necessary based on data from local and school levels. ○ Provincial Education Officers: 7 (one from each province) ○ Education Training Centre Officers: 7 Stakeholder Consultations: • Federal Level (KII): Stakeholder consultations were held at the federal level to understand their practices and, in some cases, to verify preliminary findings from schools and local levels. • Number-2 Federal Officer Sample Schools: • A total of 21 schools were selected: 7 provinces x 3 districts (each) x 1 school = 21 schools. Focus Group Discussions (FGDs): • Teachers: 21 FGDs were conducted (one from each school), with 5-6 members from different subjects in each group. <i>Note:</i> One FGD was for basic level teachers and one for secondary level school teachers.
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The flowchart illustrates the major steps/tasks (methodological) undertaken to accomplish this study. Further details of the research process is presented in Figure 2.

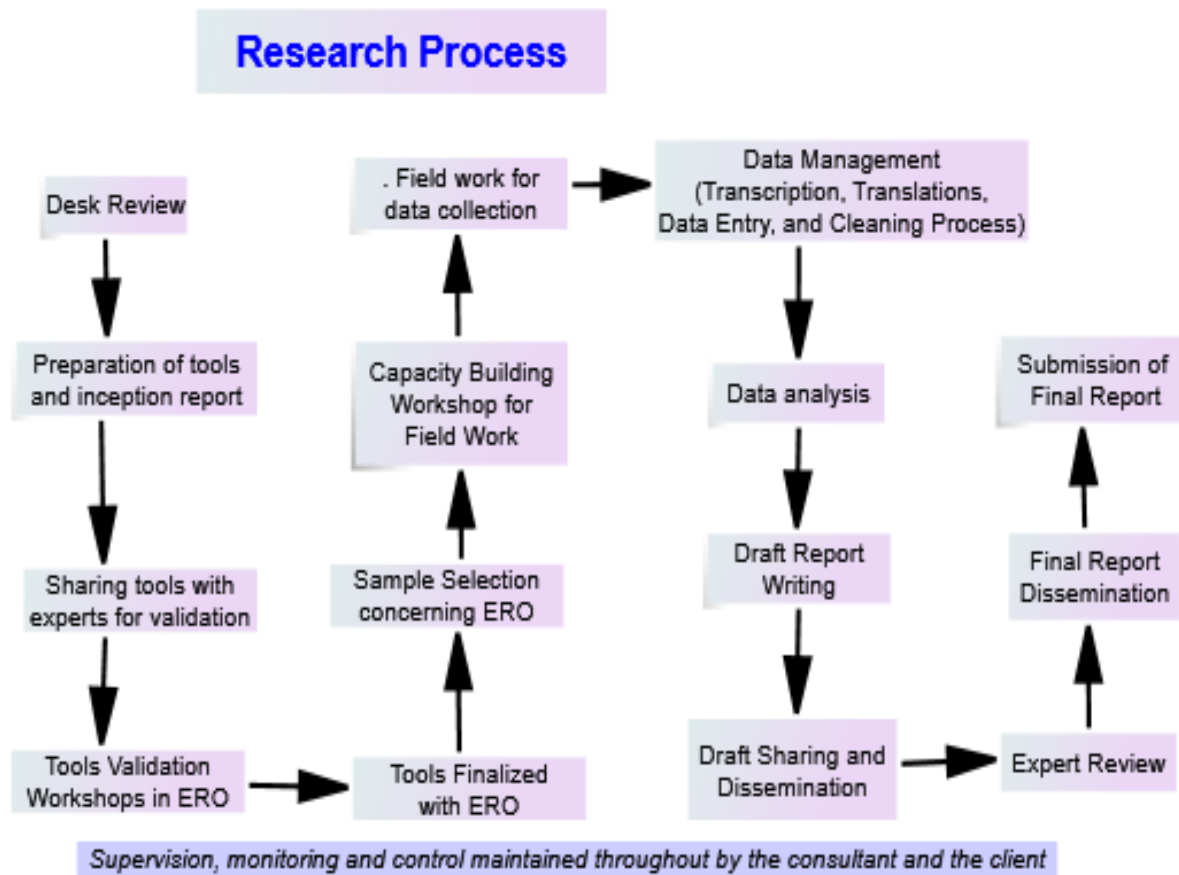


Figure 2: Research process details

Field Mobilization Strategies

The journey of field study began with meticulous planning, where we crafted a detailed research plan that served as our roadmap, detailing not only the objectives and questions we aimed to address but also the methodologies and resources required. Timelines were carefully mapped out to ensure smooth progression through each research phase. Team leader oversaw the entire research project. Beyond supervision, the team leader acted as our liaison for stakeholder consultations at the federal level, ensuring alignment with broader educational goals. Assisting the team leader was the Deputy Team Leader, who, along with field researchers, collected data in the field. The Deputy Team Leader and another researcher focused on engaging with officials at the provincial, district, and local government levels to gather valuable insights. They also visited at least one sample school from each province and held interactions with headteachers, parents, students, and teachers. These researchers were supported by field researchers (one in each province). This way, one school-based data collection was supervised by the researchers and experts as required. The team leader conducted triangulation and quality checks remotely via telephone to ensure the

robustness and reliability of data. Field researchers (one in each province), were deployed to various schools within the sample under the close supervision of one senior researcher.

Field researcher meticulously collected data, ensuring accuracy and adherence to our research protocols. Effective communication was crucial as we mobilized into the field. We established clear coordination channels, utilizing technology and regular meetings to stay connected. Stakeholder consultation was integral to our process. The team leader facilitated discussions at the federal level, fostering collaboration and gathering insights to enrich our research. At every step, we engaged with educational authorities, institutions, teachers, and students to ensure their voices were heard. Our researchers were equipped with the necessary tools and resources to navigate the field effectively. Moreover, coordination with ERO was paramount so as to stay updated on the ongoing progress as well as troubleshoot any challenges during the fieldwork process. Finally, our admin head arranged and coordinated all the logistical parts of the stakeholder workshops at the central level.

Data Analysis Procedures

The study used both quantitative and qualitative data. To address the first objective as “Analyse subject-wise NASA and NARN results, comparing them with recommendations for Grades 3, 5, 8, and 10 across different years”, the research team reviewed and reported key findings and recommendations from various reports of the NASA for Grades 5, 8, and 10, and the National Assessment for Reading and Numeracy (NARN) for Grade 3.

For the second objective as “Review the Government of Nepal's education policies and programs, particularly the School Sector Development Plan (SSDP) and the School Education Sector Plan (SESP), and assess their alignment with NASA results and recommendations at the federal, provincial, and municipal levels” relevant policy documents, including the SSDP and SESP, were analysed to examine how well they aligned with the findings and recommendations of NASA and NARN.

Insights from these documents informed the development of research tools for primary data collection, including interview guides, key informant interview (KII) protocols, focus group discussion (FGD) guidelines, and survey questionnaires.

Primary data collected through FGDs, interviews, KIIs, and surveys were used to assess how the priorities identified in education policies and programs were being implemented, particularly in relation to the findings and recommendations of NASA and NARN (Third objective). This data was both qualitative and quantitative in nature. Survey data were analysed using SPSS software by calculating frequencies, percentages, means, standard deviations (SD),

and other statistical measures. Qualitative data were transcribed, coded, categorized, and analysed thematically. Thematic findings were presented using diagrams, supported by selected verbatim quotes and highlighted excerpts in quotation boxes. The Figure 3 presents a summary of the research methodology used in a mixed-methods study involving teachers and head teachers of Grades 3, 5, 8, and 10 across Nepal. The population consisted of educators from 21 schools in 7 provinces. Sampling techniques included purposive sampling for key informant interviews (KIIs), interviews, and focus group discussions (FGDs), while random sampling was used for the survey. In total, data were collected from 245 teachers through surveys, 63 interviews (including 21 head teachers and 42 teachers), 21 FGDs (one per school), and 30 KIIs. The KIIs included 14 Local Education Officers (LEOs), 7 Provincial Education Officers, 7 Education Training Centre Officers, and 2 Federal Officers.

Research instruments included a policy analysis matrix and guidelines for FGDs, KIIs, interviews, and surveys. Instrument validation was ensured through face, content, and construct validity checks, and dissemination workshops. Data were collected through field visits and policy document reviews. Qualitative data were analyzed thematically, while quantitative data were analyzed using descriptive statistics. The methodology supported three objectives: (1) reviewing NASA and NARN reports, (2) examining the alignment of SSDP, SESP, and assessment findings, and (3) gathering primary data via KII, FGD, interview, and surveys.

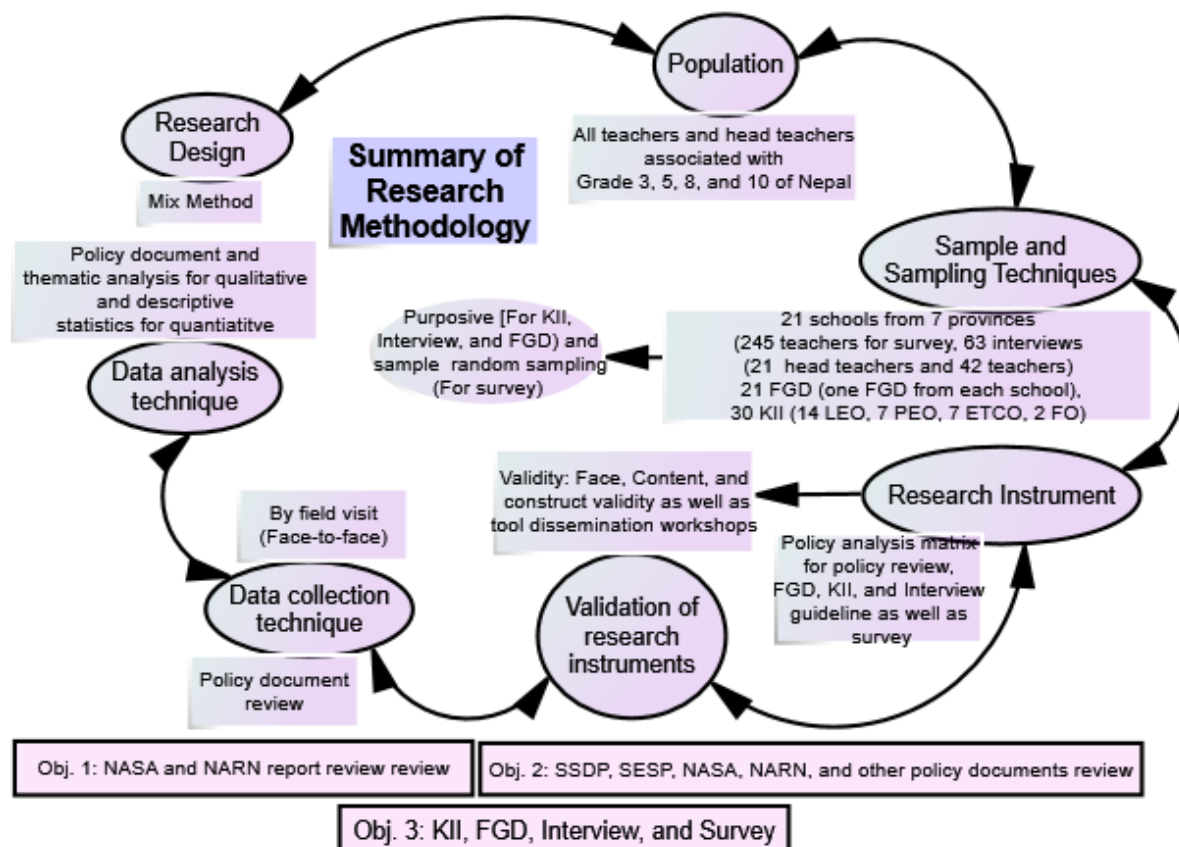


Figure 3 Summary of research methodology

Report Writing

Based on the data analysis, a preliminary report was drafted by the research team and submitted to ERO.

Draft Sharing/ Capacity Building Workshop

A total of 12 workshops were organized by the research team, encompassing a series of activities from inception sharing to capacity development. Subject-wise workshops were conducted after data collection to discuss the study's findings. Two review workshops were held at the initial stage to finalize the tools and research plan. The draft report was shared and discussed with the ERO and relevant stakeholders during a draft sharing workshop, where feedback was collected. Finally, four capacity building workshops were organized by the research team.

Submission of Final Report

After obtaining the necessary feedback on the report, the report was finalized, incorporating feedback from the external reviewer and ERO experts.

Quality Assurance

Research team established a three-member monitoring team led by the team leader. This team requested ERO and relevant provincial/district/local officials to oversee the work, including facilitating, supervising, monitoring, and evaluating all phases. With continuous consultation with ERO, we clearly define and refine the research scope, methodology, and tools of the study. A participatory approach was adopted in developing data collection tools, such as survey, interview, and FGD guidelines to gather relevant information. The team leader-oriented researchers (data collectors) to ensure consistent administration of the tools and maintain uniformity in data collection. Regular supervisory checks and data audits was conducted to monitor the quality and integrity of the data collected. The research team thoroughly documented the entire field process, including methods, findings, and outcomes. Feedback sessions were organized at various stages, including tool development, inception report, data analysis, and draft report preparation, to ensure the research process and findings meet high-quality standards. Workshops and review meetings were organized to facilitate knowledge sharing and capacity building at ERO.

Ethical Consideration

Maintaining confidentiality and ethical norms throughout the research process was a primary concern for this activity. We were aware of, and adhered to, ethical guidelines and considerations when conducting research on adult human beings and children.

These included the basic ethical principles of informed consent, anonymity, avoidance of harm, participant autonomy, and fair presentation of empirical data. Moreover, we followed the guidance of the Consulting Firm's 'Research Integrity and Quality Assurance Panel,' which focused on research ethics and quality commitment (attention to detail and accuracy, delivering the highest quality of research insights, fostering long-standing relationships with our clients, and maintaining the highest level of quality throughout all engagements). Likewise, we adhered to any ethical protocols devised by the client.

We acknowledged that individuals and groups experience disadvantages in our society. This might have been due to age, sexual orientation, marital status, race, color, gender, disability, nationality, religion, class, or beliefs. We respected and valued each other's differences and protected individuals and groups from discrimination based on their "protected characteristics." We were committed to promoting positive, non-stereotypical images in displays and activities. We neither used nor engaged in, nor allowed our researchers/enumerators or other persons engaged by us to use or engage in, any threats of violence, verbal or psychological harassment or abuse, and/or sexual exploitation and abuse. The team ensured that the research was conducted in an ethical and sensitive manner. Through reflective practice and self-evaluation, we implemented monitoring systems to highlight shortcomings and reviewed our procedures and practices accordingly on a regular basis.

Finally, all raw data, including datasheets and other documentation, was submitted to ERO upon completion of the assigned task. When publishing further knowledge products (e.g., journal articles, OpEd articles, policy briefs), proper acknowledgment will be made to ERO for its support in conducting the study.

Chapter IV

Analysis of NARN and NASA Findings, Recommendations and their Alignment with Education Policies and Plans

This chapter presents the review and analysis of NARN and NASA findings across several grades and examines the alignment between the policy documents such as SESP, SSRP and SSDP and NARN and NASA recommendations.

Analysis of NARN and NASA Results with Recommendations

In this part of study NARN and NASA results across grades are analysed with the focus on recent findings and recommendations.

NARN 2020 and 2024 Findings and Recommendations

Table 2 and Table 3 present NARN 2020 and NARN 2024 average achievement in percentage on reading and numeracy with specific remarks. Table 2 *Achievement of Students in Reading and Numeracy (NARN 2020)*

Area	Average Achievement (%)	Remarks
Reading	43.53%	Below average; weak foundational literacy skills
Numeracy	37.22%	Needs attention; basic arithmetic weak
Non-word Reading Ability	48.99%	Emergent level; recognition developing
Oral Reading Fluency (ORF)	25.04%	Very low; poor reading fluency
Comprehension	47.68%	Less than half understood; weak comprehension
Numeracy Oral Assessment	High	Better orally; conceptual grasp likely
Number Knowledge	61.30%	Acceptable number sense
Currency Tasks	>80%	Strong practical arithmetic
Grade-level reading (ORF + Comprehension)	8.41%	Urgent need for literacy interventions
No words read correctly in 1 min	10.20%	Foundational literacy crisis
Sub-task	Performance	Remarks
Dictation (Reading)	Low	Weak spelling/phonemic awareness
Use of Arithmetic Signs	Low	Lack of clarity in operations

The NARN-2020 findings show that students are facing serious challenges in both literacy and numeracy. On average, reading achievement is just 43.53%, indicating weak foundational skills, while numeracy is even lower at 37.22%, showing poor basic arithmetic understanding. Students are slightly better at recognizing unfamiliar words (48.99%) and understanding text (47.68%), but their oral reading fluency is very low (25.04%), and only 8.41% can read at grade level, signing an urgent need for literacy support.

Alarmingly, 10.2% of students couldn't read a single word in one minute, pointing to a foundational literacy crisis.

NARN 2024 presents the result on reading and numeracy in different subtask. So, comparison of these two results is not suitable. The Table 3 presents the result of NARN 2024 based on conceptual understanding.

Table 3 *Achievement of Student in Reading and Numeracy (2024)*

Area	Average Achievement (%)	Remarks
Reading	44.9%	Below average; weak foundational literacy skills, however improved than NARN 2020.
Word Identification	58.4	Emergent level; recognition developing
Dictations	36.9	Poor in dictation, need intervention
Vocabulary	52.9	In an average level
Picture Description	26.7	Poor in picture description
Reading Comprehension	57.5	Comprehension is good
Numeracy	50.16	Improved result.
Composite shapes identification	44.7	Better orally; conceptual grasp likely
Angle identification	56.3	Acceptable geometrical concept
Number identification	48.4	Number sense weak
Use of arithmetic operation	45.7	Acceptable
Fraction	43.6	Acceptable result
Clock reading	38.7	Poor in clock arithmetic
Currency identification	73.2	Good in practical application
Reading simple graph	78.2	Good practical knowledge.

Since, NARN 2020 and NARN 2024 presented the result in reading and numeracy in different sub-task. However, the result on reading is improved by more than one percentage (43.5% to 44.9%) and in numeracy the improvement is more noticeable (37.22 to 50.16%). The improvement in reading comprehension from 47.68% to 57.5% indicating better grasp of meaning from texts. The word identification capacity of students is also good. However, the capacity of students in picture description in 2024 was only 26.7% indicating the poor conceptual understanding of the concept. Regarding numeracy, average performance is around 50%. This result indicates the improvement in numeracy skills of students in different sub-tasks. Students are good in currency identification (73.2%), reading simple graphs (78.2%), and angle identification (56.3%). And below average in number identification (48.4%), performance in fractions (43.6%), and clock reading (38.7%).

Recommendations

The National Assessment for Reading and Numeracy (NARN) 2020 and 2024 in Nepal recommends targeted interventions based on regional, infrastructural, and instructional disparities. Students from Gandaki and Madhesh excelled in Reading and Numeracy respectively; studying the factors behind their success can inform national strategies. Parental support significantly enhanced learning outcomes, prompting collaboration between MoEST and local governments to strengthen parental engagement. English medium students outperformed in Reading, highlighting the need to investigate and replicate effective practices nationwide, while addressing the ongoing debate on instructional language through focused research. Better performance was also linked to schools with adequate classrooms, underscoring the need to ensure minimum physical infrastructure. Headteachers' training proved crucial, suggesting regular leadership development programs. Alarming, over 10% of Grade 3 students couldn't read a single word, indicating the urgent need for early-grade reading-focused initiatives. Collectively, these findings call for systemic improvements to support equitable student achievement across Nepal.

Table 4 Achievement of Students based on Socio-Demographic Factors (NARN 2020)

Factor	2020	2024	Recommendation/Remarks
	Socio-Demographic Factors		
Province	Gandaki best in Reading 53.29%, lowest Karnali with 39.44% Province Madhesh province best in Numeracy (45.97%), lowest in Karnali and Sudurpaschim (25.15%)	In Numeracy Highest Gandaki: 61.1% Lowest Karnali: 42.2% In Reading Highest Gandaki: 61.4 Lowest Madhesh: 38.7	Explore region-specific practices
Gender	No major difference; boys better in Reading	In Numeracy Boys: 53.2%, Girls: 49.9% In reading no major differences.	Support girls in literacy
Age	>8 yrs = better performance	NA	Maturity/exposure advantage
Home Language	L1 better in Reading; no diff in Numeracy	NA	Language matters for reading

	Home Environment Related Factors		
Mobile/Tablet Use	Negative effect	NA	Discourage screen time
Homework/Reading at Home	Positive effect	NA	Promote home study habits
Home Support	Significant positive impact	NA	Engage family/siblings
Reading Materials at Home	Positive; quantity not important	NA	Quality over quantity
Parental support	Higher involvement = better scores	Higher involvement = better scores	Foster engagement
	School Related Factors		
Medium of Instruction	English medium better in Reading	Better in both language instruction	Research needed; policy debate
School Infrastructure	More classrooms = better Reading	NA	Ensure basic facilities
Toilet/Water Facility	No significant impact	NA	Still essential for health
Headteacher Gender	No major effect	NA	Leadership skills more important
Headteacher Education	Higher education = better scores	NA	Professional qualification matters
Headteacher Training	Recent training = better performance	NA	Train leaders regularly
Headteacher Experience	Up to 20 yrs = positive; >20 yrs = negative	NA	Need continuous Professional development

The results of Table 3 show how differently socio-demographic, home, and school-related elements affect student learning outcomes. Gandaki shows the best reading scores regionally; Karnali lowest; Madhesh leads in numeracy, implying the need of investigating effective local practices. Though boys somewhat excel in reading, suggesting a need to help girls more in literacy, gender variations are minimal. Older children above eight years do better, probably because of more maturity and exposure. Students who speak the language of their school at home perform better in reading; hence language alignment is clearly important. While homework, reading, and family support greatly improve performance, screen time that of mobile or tablet use negatively affects learning at home. Fascinatingly, having more reading materials helps; but, quality counts more than volume. Better scores are quite closely correlated with parental involvement.

Though additional research is needed, English-medium instruction in classrooms has been found to coincide with improved reading results. While basic facilities like toilets and water, although vital for health, have no direct academic impact; infrastructure like more classrooms improves reading. Although the gender of the headteacher has no bearing on performance, their education level, recent training, and experience up to 20 years positively affects student outcomes, so underlining the need of continuous professional development and leadership quality.

NASA Findings and Recommendations

This section explores findings and recommendations of the NASA studies of grade 5, 8 and 10 in mathematics, Nepali, English and science.

Findings and Recommendations of Grade 5 Table 5: NASA Grade 5 Results in Different Years

NASA test	Maths		Nepali		English	Science
	2018	2022	2018	2022	2022	2022
Mean Achievement	500	484.61	500	484.61	500	500
Provinces						
<i>Koshi</i>	494	485.8	500	501.78	510.4	504.5
<i>Madhesh</i>	521	486.5	489	492.29	485.2	487.3
<i>Bagmati</i>	505	488.7	506	508.66	523.9	512
<i>Gandaki</i>	503	489.8	511	505.35	511.4	518.2
<i>Lumbini</i>	486	480.7	496	499.18	488.2	493.9
<i>Karnali</i>	496	475	488	489.97	473.6	487.3
<i>Sudurpaschim</i>	500	479.6	491	487.38	492.3	500.2
Proficiency level						
<i>Below Basic</i>	33%	20.5%	20%	3.20%	8.1 %	4.2%
<i>Basic</i>	39.57%	57.3%	35%	46%	47.4%	43.1%
<i>Proficient</i>	24%	21.2%	30%	45.30%	40.8%	46.6%
<i>Advance</i>	4%	1%	15%	5.50%	3.70%	6.1%
School Type						
<i>Institutional</i>	523	497.03	525	522.86	540.5	518.20
<i>Community</i>	493	476.51	491	485.18	477.6	489.38
Gender						
<i>Boy</i>	501	485.27	501	495.89	500	502.29
<i>Girl</i>	499	484.54	499	502.80	501	499.84

The NASA findings for Grade 5 Mathematics shows a decline in performance from 2018 to 2022. The national mean achievement score dropped from 500 in 2018 to 484.61 in

2022, this trend represented across all provinces, with Madhesh, despite being the highest in 2018, experiencing a significant decline, and Karnali with the lowest score in 2022. While there was a positive reduction in students categorized as "Below Basic" (from 33% to 20.5%), a substantial portion of these students appear to have shifted into the "Basic" proficiency level (rising from 39.57% to 57.3%). However, the percentage of students achieving "Proficient" and particularly "Advance" levels indicate a noticeable decrease. Furthermore, both institutional and community schools, as well as both male and female student groups, experienced a decline in their average scores, indicating a systemic challenge in mathematics.

The NASA results for Grade 5 Nepali from 2018 to 2022 present a mixed but generally positive outlook. While the overall national mean achievement score saw a slight decrease from 500 to 484.61, provinces Koshi, Madhesh, Bagmati, Lumbini, and Karnali, demonstrated slight improvements in their mean scores. A significant positive trend is observed in proficiency levels, with a desperate reduction in students performing "Below Basic" (from 20% to 3.20%), and a substantial increase in those reaching "Basic" (from 35% to 46%) and "Proficient" (from 30% to 45.30%) levels. However, this positive shift is tempered by a considerable decline in students achieving "Advance" proficiency (from 15% to 5.50%), suggesting that while more students are meeting or exceeding basic standards, fewer are reaching the highest levels of mastery. Furthermore, both institutional and community schools experienced slight decreases in their mean scores, though institutional schools maintained their lead. Notably, girls' performance improved and surpassed boys' performance in 2022, indicating a positive development in gender-based literacy outcomes for Nepali language.

The NASA for Grade 5 English in Nepal in 2022 indicates an overall Mean Achievement of 500. Analysing the results by province, Bagmati shows the highest performance with a mean of 523.9, followed closely by Gandaki (511.4) and Koshi (510.4), while Karnali recorded the lowest at 473.6. In terms of proficiency levels, the majority of students fall into the "Basic" category at 47.4%, followed by "Proficient" at 40.8%. A smaller percentage of students are at the "Pre-basic" level (8.1%) and "Advance" level (3.70%), suggesting a concentration of students in the middle proficiency ranges. When comparing school types, Institutional (private) schools significantly outperform Community schools, with mean achievements of 540.5 and 477.6 respectively, highlighting a notable disparity in English language proficiency based on the type of educational institution. Lastly, gender-wise, the performance is very close, with boys achieving a mean of 500 and girls a mean of 501, indicating near parity in English language proficiency between genders at this grade level.

Recommendation

The NASA (Grade 5, 2022) in Nepal outlines multifaceted recommendations to address disparities and improve educational outcomes. Key priorities include targeted support for underperforming regions like Karnali and Sudurpashchim through localized programs and teacher training. Efforts to address urban-rural disparities involve improving infrastructure and mobile learning options for remote schools. Strengthening community schools by enhancing funding and promoting partnerships is emphasized. Recommendations also highlight language mastery, with support for Nepali and English proficiency, especially for non-Nepali speakers. The assessment stresses ethnic and regional inclusivity through culturally responsive pedagogy and support for marginalized groups. Family engagement and safe commute options are essential for student participation, along with access to digital resources and technology integration. A balanced approach to extracurricular activities, inclusive school environments, and boosting motivation and engagement through recognition and interactive learning are all identified as crucial strategies.

NASA Grade 8 Results of 2017 and 2020

Table 6 NASA Grade 8 Results in Different Years

	Mathematics		Science		Nepali		English
Province	2017	2020	2017	2020	2017	2020	2020
National Average	500	483	500	470	500	500	500
Provinces							
Koshi	485.68	483	483.11	472	491.54	505	501
Madhesh	500.94	477	487.61	444	477.88	NS	NS
Bagmati	519.62	509	528.63	492	517.86	511	529
Gandaki	514.35	497	518.06	485	510.84	521	522
Lumbini	501.35	485	497.57	475	500.54	498	NS
Karnali	467.19	460	484.3	454	492.33	NS	NS
Sudur Paschim	479.52	462	488	463	496.26	NS	NS
Proficiency Level							
Level 1 (pre-basic)	2.13%	1.9%	1.83%	2.4%	0.5%	1.3%	0.5%
Level 2 (Basic Level)	12.86%	46.3%	15.47%	15.6%	4.7%	8.1%	10.2%
Level 3 (Proficient 1)	31.26%	46.3%	38.88%	44.3%	26.1%	31.8%	37.8%
Level 4 (Proficient 2)	38.81%	24.1%	32.71%	31.4%	58.4%	46.1%	33.3%
Level 5 (Proficient 3)	14.10%	0.5%	9.94%	6%	10.1%	12.4%	16.6%

Level 6 (Advanced)	0.84%	0.5%	1.16%	0.3%	0.2%	0.3%	1.6%
Gender							
Boy	504.92	490	503.36	468	499.83	499	506
Girl	494.73	478	498.14	473	500.93	502	496
Type of School							
Institutional	547.47	528	537.67	462.8	519.9	NS	NS
Community	485.32	474	489.73	500.3	495	NS	NS
* NS: Not stated							

The NASA Grade 8 results reveal notable regional, gender, and school-type disparities in students' performance across subjects in 2017 and 2020. National average scores declined in Mathematics (from 500 to 483) and Science (500 to 470), indicating a drop in overall academic achievement. Provincial data show that Bagmati consistently outperformed other regions in both years, while Karnali and Sudurpaschim lagged significantly below the national average, highlighting persistent regional inequities.

Proficiency levels further underline concerns: in 2020, the majority of students were clustered at Level 2 (Basic) and Level 3 (Proficient 1), with very few reaching Level 5 (Proficient 3) or Level 6 (Advanced), especially in Mathematics and Science. Notably, only 0.5% of students reached Advanced level in these subjects, suggesting limited higher-order skills among students.

Gender-wise, boys slightly outperformed girls in Mathematics and Science, while girls performed marginally better in Nepali. The gap in English was more pronounced, with boys scoring 506 versus girls' 496. Institutional school students outperformed community school students in all subjects, particularly in Mathematics (528 vs. 474), reinforcing concerns about learning disparities.

Recommendations

The NASA Grade 8 (2020) recommendations emphasize bridging educational disparities across provinces through equitable resource distribution, policy reform, and contextualized curriculum development. Priority provinces like Karnali, Madhesh, and Sudurpashchim require focused interventions in infrastructure, teacher retention, and remedial support. Language of instruction should align with students' home languages, promoting inclusive pedagogy. Gender disparities call for girl-friendly classrooms, teacher sensitivity, and parental awareness. Timely enrollment, formative assessment, and targeted remediation can reduce grade repetition. Socioeconomic factors, while influential, can be mitigated through

school-level provisions like libraries, clubs, and study programs. Disadvantaged groups, especially Dalit and Janajati students, require inclusive curricula, local content integration, and culturally responsive teaching. School governance must enforce teacher accountability, minimize instructional gaps, and prioritize activity-based, learner-centered pedagogies. Use of digital media for educational purposes should be regulated. Diagnostic studies are recommended to address systemic issues. Strengthening local governance, school monitoring, and professional development are vital for sustainable educational improvement and equity.

Findings and Recommendations of Grade 10

Table 7 NASA Grade 10 Results in Different Years

	Mathematics		Science		Nepali		English	
Year	2019	2023	2019	2023	2019	2023	2019	2023
National Average	500		500	504.83	500	498.6	500	515.11
Provinces								
Koshi	491	499.4	491	496.9	505	499.2	500	520.3
Madhesh	495	505	484	496.3	474	489.5	482	504.4
Bagmati	521	517.2	525	530.2	511	504.6	534	535.8
Gandaki	513	510.7	515	508.4	516	502.2	516	533.8
Lumbini	503	491.4	507	503.9	513	503.5	502	515.8
Karnali	476	472.3	482	486.8	475	488.9	474	489.6
Sudurpashchim	488	489.8	486	488.42	500	495.5	483	492
Proficiency Levels								
Level 1 (pre-basic)	19%	0.9	37%	12%	20%	8.9 %	30%	3.6%
Level 2 (Basic)	27%	19.5	26%	17.4%	17%	17%	21%	8.6%
Level 3 (Proficient 1)	24%	39.6	19%	20.8%	24%	27.9%	19%	17.2%
Level 4 (Proficient 2)	16%	27.1	11%	19.6%	21%	25.2%	12%	20.9%
Level 5 (Proficient 3)	10%	11.5	5%	14.7%	13%	14.6%	9%	17.3%
Level 6 (Advanced)	5%	1.4	2%	15.6%	5%	6.4%	9%	32.4%
Gender								
Boy	510	507.40	509	512.1	501	496.15	506	519.2
Girl	492	493.05	493	498.6	500	501.3	496	512.1
Type of School								
Institutional	542	487.1	540	495.6	517	503.8	556	562.3
Community	491	535.8	491	539.7	496	497.3	488	503.1
Location								
Rural (Rural Municipality)	484.8	479.57	486.9	489.4		494.6		495.0
Urban (Municipality)	508.6	507.76	506.9	512.1		500.6		525.3

The NASA Grade 10 results indicate varied student performance across subjects, provinces, school types, and demographic groups in 2019 and 2023. National averages show slight improvements in science (from 500 to 504.83) and English (500 to 515.11), while Nepali saw a minor drop (from 500 to 498.6), and Math remained relatively unchanged.

Bagmati consistently outperformed all other provinces across subjects and years, especially in English (535.8 in 2023). Conversely, Karnali and Madhesh provinces trailed behind, highlighting persistent regional disparities. English showed the highest national average improvement, suggesting effective interventions or better curriculum alignment in that subject.

The proficiency level data show a significant shift toward higher performance in 2023, especially in English, where 32.4% of students reached the Advanced level (Level 6), compared to only 9% in 2019. However, Math still had a high proportion of students at the Basic (19.5%) and Proficient 1 (39.6%) levels, with very few (1.4%) reaching the advanced. Gender-wise, boys slightly outperformed girls in all subjects, although the gap has narrowed. Institutional school students scored significantly higher than those in community schools, particularly in English (562.3 vs. 503.1). Urban students also consistently outperformed rural peers, emphasizing the need for equitable access to quality education and resources.

Recommendations

To bridge the gap between intended and achieved curriculum outcomes in Nepal, urgent reforms in education policy, curriculum design, resource allocation, and monitoring mechanisms are essential. Special focus must be given to underperforming provinces such as Province 1, Madhesh, Karnali, and Sudurpaschim by ensuring equitable resource distribution, infrastructure improvement, and teacher retention. Activity-based curricula, contextualized teaching materials, and integrated teacher training packages are crucial for enhancing learning outcomes. Community schools should be upgraded through strategic interventions, identifying and addressing shortcomings in their input-process-output mechanisms. The use of students' home languages, especially in early grades, should be promoted through trans-language strategies and tailored language training for teachers. Gender disparities can be addressed through student-friendly teaching practices, scholarships for girls, and engagement with female role models. Timely school enrollment and teacher capacity in formative assessment and remedial education are necessary to prevent grade repetition. Socio-economic barriers must be mitigated by ensuring learning materials and support systems for all students. Marginalized communities, particularly Janajati and Dalit students, need culturally inclusive curricula and teaching practices. School governance should enforce teacher accountability, reward regular

attendance, and ensure resource availability. A system-wide diagnostic study is needed to guide evidence-based interventions for improving educational quality and equity.

NASA Findings, Recommendations and their Alignment with Education Policies

In Nepal, sector-wise school education plans were formulated and operationalized through the endorsement and implementation of various policies and programmes following the constitutional aspirations, mandates, and provisions. This study attempted to examine how educational policies and provisions align with the policy recommendations made by the NASA studies conducted at various levels over different years. The NASA study is considered a key instrument for ensuring the effectiveness of education service delivery by promoting good governance across the system. As part of this effort, SESP's one of the core strategies involves strengthening national assessments of student achievement, alongside performance audits of schools and educational institutions. These assessments provide critical evidence to inform policy and practice, contributing to the development of a responsive system that aims to improve the quality of school education based on data-driven evidence.

Equity, quality, competence, good governance, management and resilience are main priority areas of SSDP. SSDP attempted to reduce existing inequalities and to contribute to socioeconomic development by enhancing the capacity of human resources.

The SESP mission is to ensure that all citizens have access to relevant, high-quality education through a capable, well-governed, and accountable public school system that is aligned with regional and international standards. The SESP has articulated a set of objectives along with corresponding strategies designed to achieve them effectively. SESP core values and guiding principles include diversity, inclusiveness, equity, integrity, student centeredness, good governance and innovation. The SESP aims to enhance the quality and relevance of overall school education by ensuring school readiness, foundational learning, and quality learning achievement for every child. To achieve this, it emphasizes the provision of essential physical infrastructure and educational resources to create a safe, inclusive, and diverse learning environment; the revision of curricula and textbooks to ensure they are standardized, relevant, inclusive, and aligned with current knowledge and skills; and the adoption of modern, practical pedagogical approaches to improve learning outcomes for all students.

Quality Aspects

NASA Findings

The NASA studies in grades 5, 8 and 10 highlight a critical learning crisis, where the majority of students demonstrate poor competence and have achieved significantly below the intended curriculum goals. In grade 8, the majority of students have completed or mastered less

than 50% of the curriculum in Mathematics and Science subjects. Students' scores greatly vary for knowledge-level items and higher-ability items in all subjects at all levels. In Grade 5, the proportion of students unable to solve higher-order tasks is even more concerning: 25% in Mathematics, 9% in Nepali, and 29.7% in English. Similarly, in grade 8, a significant proportion of students have achieved below the basic proficiency level: 67.9% in Mathematics, 62.3% in science, 41.2% in Nepali, and 48.5% in English. The Grade 10 NASA study also highlighted a similar scenario in the selected subjects, where a large number of students are at a level below basic. The data reveal a deeply worrying aspect of school education, indicating that a significant gap exists between the intended and achieved learning outcomes, suggesting that a substantial number of students are failing to meet even basic proficiency levels across core subjects. The results of the learning achievement assessments conducted at various levels have consistently shown low and stagnated results over time.

There is an imbalance in learning across different areas of the curriculum. Despite the curriculum's expectation of achieving a similar level of learning in all content areas, the data clearly shows that certain content areas of the curriculum are learnt less effectively than others. The findings above underscore an urgent need for systemic educational interventions, targeted reforms, and support.

NASA Recommendations

In this regard, NASA studies recommend investigating why schooling is not fostering the desired higher-order cognitive skills. It is recommended that the curriculum and textbook be revised and redesigned to enhance student performance and engage them in tasks that require higher-order thinking. It is recommended that educational managers and policymakers find ways to encourage community school teachers to create a caring environment and implement rigorous teaching and learning practices. It is recommended that the Curriculum Development Center (CDC) define minimum learning standards in school education in technical coordination with ERO. CEHRD should develop teacher training guidelines aligned with learning standard campaigns, and NEB should create evaluation guidelines based on defined learning standards (ERO, 2018, 2022). The NASA study recommended providing performance-based incentives to the schools and teachers for raising achievement and reducing the achievement gap.

While the studies call for a radical change in areas such as educational policy, resource management, curriculum design, and monitoring and evaluation, the recommendations largely remain broad and thematic rather than specific and actionable.

Policy Provisions

The Constitution of Nepal 2015 has guaranteed citizens' rights to access quality education. SSRP and SSDP also took strategic intervention to reform school education, and the quality of education is one of their priority areas. SESP's priority is to achieve the fourth goal of the Sustainable Development Goals (SDGs), which is to ensure inclusive access to quality education and lifelong learning by 2030. The plan identified that the lack of adequate, competent, and motivated teachers in schools poses a challenge in improving the quality of education. The plan identified students' poor learning as a persistent problem and recognized the need for immediate measures to improve the quality of teaching. SESP's second objective is related to quality education. It aimed to "enhance the quality and relevance of overall school education by ensuring school readiness, foundational learning and quality learning achievement for each child" (MoEST, 2022).

The key strategies include providing basic physical and educational resources, improving and revising the school-level curriculum and textbooks, emphasizing the use of modern and effective methods in the pedagogical process, managing the ICT tools/devices and digital resources, enhancing students' and teachers' skills to use technology and improve practice of assessment and evaluation. Similarly, update the teacher competencies framework, improve teacher preparation and pre-service training programmes by coordinating with universities, and develop and implement a comprehensive teacher professional development system and teacher support system. SSRP provisioned to provide additional incentives as reinforcement of schools with higher rate of students' retention in school. There was provision of incentives to motivate schools to strive for better performance (MoE, 2009). In SSRP there was no provision of providing performance-based incentives for teachers. SSDP realized the lack of effective performance management of teachers, lack of their career paths and incentives, and insufficient rewards for effective teaching. SSDP's strategies for improving teacher professional development included developing teacher performance appraisal systems that recognize outstanding teachers with a certificate and link these systems to further career development, opportunities, and incentives. To improve the quality of classroom teaching and learning, develop a mentor programme that incorporates peer support. SESP guiding principles recognize the importance of addressing diversity by acknowledging and responding to potential differences in the cognitive ability and holistic development needs of individual learners. Student-centered principles embrace ensuring learning success for all children, addressing their personal needs and interests, and creating opportunities for their holistic development.

Learning Achievement Gap Between Community and Institutional School

NASA studies have revealed significant disparities in learning achievement between community and institutional schools in Nepal. Students in community schools consistently score lower across all tested subjects and grade levels as compared to their counterparts in institutional schools.

NASA Recommendations

The learning gap can be addressed by strategically upgrading community schools through targeted interventions in the school education system. It is crucial to identify and address the shortcomings in the inputs, processes, and outcomes of the community school. There is a suggestion for policy reforms to improve the current state of public education. Moreover, local governments have a vital role in improving the quality of community schools.

The recommendations made by NASA studies are not specific in this regard. They do not clearly outline what types of targeted interventions are needed, where and how to improve the inputs, processes, and outcomes of community schools, or what kinds of policy reforms are necessary to enhance their quality. Additionally, the studies lack clarity on the roles and responsibilities that local governments can be expected to fulfill in improving public education.

Policy

Targeted interventions to improve community school education were implemented during the SSRP, SSDP, and SESP. During SSDP, a scaling system to rank community schools on the basis of several indicators related to education achievement, school governance and facilities available will be developed and implemented. However, institutional schools did not receive any form of support under these initiatives. The plans included provisions such as free education up to the secondary level, scholarships for targeted groups, free textbooks, midday meals, teacher training, infrastructure development, and resource management, among others. Despite these efforts, community schools continue to struggle with low student performance and high failure rates in examinations.

Equity, Equality and Inclusion

NASA Findings

NASA studies have revealed existing disparities in learning achievement among students from different ethnic groups with diverse cultural backgrounds. Students from Dalit and Madheshi communities found to be achieved constantly lower marks in grades 5, 8 and 10 in Nepali, English, Math and Science in comparison to achievement scores of students belonging to highly privileged Bhamins, and Chettri (ERO, 2022, 2020, 2018). Studies revealed female students achieved significantly lower marks as compared to their counterparts'

male students in subjects. NASA studies have also found that the language spoken at home, among other factors, is one of the influential factors in determining student achievement.

A NASA study conducted among Grade 3 and Grade 5 students indicates that parental illiteracy remains a significant issue. Among the parents of Grade 3 students, 12% of fathers and 26.5% of mothers were illiterate. Similarly, among the parents of Grade 5 students, 14.2% of fathers and 32% of mothers were found to be illiterate. It was reported that parents' education level, in general, and the mother's in particular, are significant determinants of their children's achievement level at school.

NASA Recommendations

To reduce gender-based differences in learning attainment, it is suggested that interventions be devised and implemented. Suggested interventions include teachers paying attention to student-friendly behavior (with a focus on girls) and implementing teaching and learning activities in the classroom, including remedial education. Affirmative action, such as scholarships and additional incentives for girls, may help reduce gender disparities in achievement.

Language issues can be addressed and the persisting gap can be narrowed by teachers using the children's home language. Teachers need at least a basic-level language learning package in their students' language or the language of the surrounding community. A comprehensive language learning package for teachers to support their professional development should be incorporated into TPD.

It is recommended to raise parents' literary level, especially targeting mothers, seen as an urgent need not only for achieving a higher level of student achievement at school but also for achieving social equality and a just society. The provision of family literacy programs through schools is recommended not only to improve children's academic achievement but also to strengthen school–community relationships and enhance parental involvement in education.

Policy

To ensure equitable access to and participation in a full cycle of school education for all children, including those from socially and economically disadvantaged backgrounds and children with disabilities, the SSRP, SSDP and SESP have a set of strategies. These include providing free school education and strengthening the scholarship system to be more need-based, thereby supporting the meaningful participation of marginalized children. The SSRP introduced a special incentive package as a strategic intervention to increase access, participation, and completion of secondary education for children from disadvantaged families. There was a provision for scholarships and incentives to help children from economically and

socially marginalized families complete their basic education. SSDP have been implemented to reduce existing inequalities and to contribute socioeconomic development by building the capacity of human resources. To reduce disparities in school education, Consolidated Equity Strategy has been developed during SSDP period and SESP updating and implementing the Consolidated Equity Strategy. The Consolidated Equity Strategy serves as a guiding framework to ensure a dedicated approach to reduce existing disparities in education outcomes across different social groups and regions. (MoEST,2022). It also prioritizes improving the physical and educational environments by making schools safe, inclusive, and free from fear, discrimination, and abuse promoting a child-friendly, gender-responsive, and disability-friendly atmosphere conducive to effective learning. SSRP, SSDP, and SESP ensured the implementation of the mother tongue as a medium of instruction in the early grades of basic school education. SSDP provisioned the mandatory one-month training of all ECED/PPE facilitators/teachers, including the development of Nepali and mother tongue language skills.

There is a trilingual approach to teaching and learning as mandated by the Education Act, including Nepali, English, and Mother tongue at the basic level of school education. SSDP has framed the Languages of Education Strategic Framework to guide the effective teaching of languages in schools as subjects and for their appropriate use as the medium of instruction. SESP considers materials for ECED to be translated into different mother tongues or local languages to cater to children from households where the primary language spoken is not Nepali. The National Curriculum Framework 2019 also provisioned using mother tongues and/or local languages in a multilingual context to facilitate learning. Despite policy provisions, there is no proper implementation of mother-tongue-based basic education. Now, local governments are promoting local languages through local curricula.

SSDP emphasizes on strengthening the awareness of parents and communities to increase the capacity of SMCs and PTAs and through them the accountability of schools for providing quality education. SSDP, one of the equity strategies, includes increasing the engagement of parents and communities in ECED/PPE through the provision of parental education and packaged programmes, linking ECED/PPE with family literacy, income generation, health and hygiene awareness and skills training programmes. SESP key activities includes the formation and extension of the gender networks to local levels and mobilizing them for implementing awareness programmes on social issues like child marriage, gender violence, etc.

Access

Access to quality education is recognized as a fundamental aspect of the right to education, as mandated by the Constitution. It is also one of the top priority areas in educational sectoral policies.

NASA studies conducted among students in grades 8 and 10 in different years found wider gaps in achievement between provinces. Students in Bagmati, Lumbini, and Gandaki provinces performed above the national average in English, Mathematics, Science, and Nepali. In contrast, students in Koshi, Karnali, Madhesh, and Sudurpaschim provinces performed below the national average in all subjects (ERO, 2020, 2022). ECED NER in Madhesh province was found to be 54.6, low compared to NER of over 86 percent in Gandaki and Bagmati (MoEST, 2022). There was wider inequality in learning achievements among students in terms of location. Students from urban schools are seen performing better than those from rural schools.

NASA Recommendation

NASA studies recommended that to reduce the disparity in achievement, there should be a justifiable distribution of resources, targeted policy reforms, budget allocation, development of human resources, contextualization of the curriculum and monitoring and evaluation of educational programmes, specially targeting low performer provinces.

Policy

It is expected that after the implementation of SESP, achievement disparities based on province/ region will be reduced. SSDP identified that the poverty rate is higher in rural areas. Rural regions in Nepal face multiple challenges in education, including a lack of basic infrastructure and facilities in schools, a shortage of teachers, and students' limited access to schools due to remoteness, inadequate learning environments, and lower parental awareness. SSDP scaled up school health and nutrition activities, including the continuation and need-based expansion of school-based nutrition programmes, such as midday meals in the Karnali districts. For basic-level school education, SSDP initiatives involved identifying the most disadvantaged districts and implementing targeted interventions using the Equity Index, such as constructing classrooms, WASH facilities, providing scholarships for targeted groups, offering midday meals, and establishing multigrade schools. It has been found that SSRP, SSDP, and SESP have failed to adequately address the issue of continued learning disparities between students in rural and urban areas.

Access to Resources

NASA Findings

NASA studies have reported that the availability of textbooks has a significant impact on students' academic achievement. However, textbooks remain unavailable for 3.7% to 4.4% of students even by the end of the academic session, resulting in disparities in achievement between students who have access to textbooks and those who do not.

Recommendation

Ensuring the timely availability of textbooks to all students. One of the crucial factors regarding the use of textbooks is enhancing teachers' capacity to utilize multiple materials, including printed, electronic, and online resources, to deliver the curricular competencies effectively.

Policy

SESP includes textbooks and educational materials under the major area of investment. Budget is allocated for the updating and enhancement of textbooks, for expanding the availability and use of ICTS in schools. It is provisioned for the students to receive a complete set of textbooks within the first two weeks of school year at the basic level. SESP key activities related to infrastructure development and facilities include increasing access to and capacities of IT-based teaching, developing and implementing the standards for school education infrastructure. During the SESP period, it is expected to establish data centers and digital laboratories, expand the appropriate use of ICT in school administration, monitoring, and facilitate learning. ICT infrastructure and internet connectivity will be extended to all schools during the SESP. There will be development of interactive digital resources for different grades.

Bullying Impacts Learning Achievement among School Children

NASA Findings

A Grade 5 NASA study found that bullying is an impeding factor for learning achievement. It is reported that physical, emotional, and sexual forms of bullying are prevalent in schools in Nepal. Approximately half of children aged 13-17 experience some form of bullying,

Recommendation

Learning outcomes for many of the students encountering bullying, it is felt essential to root out it from our schooling to promote a learning-friendly atmosphere in school. NASA study recommended that one of the measures reducing bullying is making teachers aware of the issue and its possible consequences to the school children. Students themselves are to be

sensitized through mobilizing child clubs that are functioning at schools. Child right activists also would be supportive to lead the process. Similarly, a child friendly school framework being implemented under the initiative of the DOE would also need to incorporate possible indicators regarding the measures that discourage school bullying. Curricula and packages on teacher training also need to consider these issues seriously.

Policy

Regarding the impact of bullying and abuse, discrimination like issues on students' achievement and psycho-social impacts, SESP goal was to promote child- friendly schools in Nepal. SESP emphasizes raising awareness among school staff, stakeholders and students to recognize and address all types of intimidation, bullying, discrimination, exclusion and abuse. One of the key activities of SESP is to conduct training workshops, and awareness programmes to educate against all forms of discrimination, bullying and abuse in schools and set a complaint response mechanism in schools. The plan promoted equity and inclusiveness to keep the children safe from all forms of bullying and discriminatory behaviours. It emphasizes inclusive education, creating a child-friendly environment by making the learning activities participatory, and making school free of any forms of discrimination, abuse and bullying. SSDP equity strategies ensure that schools are safe spaces to learn. It focused on equipping teachers and school management with the skills to identify and address the bullying and harassment of and among students and staff of schools. The implementation of the Education for All programme and the SSDP saw the progression from the implementation of child friendly schools' programmes to agreement on a set of national minimum enabling conditions to provide a conducive learning environment in schools. Development of child friendly school framework provides an overall framework to ensure inclusive access to an enabling and safe learning environment.

Some of the recommendations in the NASA studies tend to be too broad or general. There is a notable overlap in the findings and recommendations of the Grade 10 NASA Study (2019) and the Grade 8 NASA Study (2020). Most of the findings and recommendations are similar. The Education Review Office (ERO) should adopt a more critical approach and apply greater analytical rigor when reporting on different studies and formulation recommendations.

Alignment of NARN Findings, and Recommendations with Nepal's Education Policies

In this part of the study alignment of NARN findings is examined against policy documents School Sector Reform Plan (SSRP), School Sector Development Plan (SSDP), and the Secondary Education Support Program (SESP). All the policy documents collectively focus on improving access, equity, quality, governance, and resilience within the education sector.

In this context NARN's insights are crucial for informing policy and practice, contributing to a data-driven system aimed at enhancing school education quality.

Regional Disparities and Equity

NARN findings show regional disparities in learning, with Gandaki Province outperform in Reading and Province 2 in Numeracy, while other provinces like Koshi, Karnali, Madhesh, and Sudurpaschim perform below the national average. There is also a significant inequality in learning outcomes between urban and rural schools, and early childhood education development (ECED) net enrolment rates in regions with lower enrolment in ECED in Madhesh province. NARN recommends addressing these disparities through a justifiable distribution of resources, targeted policy reforms, budget allocation, human resource development, curriculum contextualization, and robust monitoring. This can be done through specific targets to low-performing provinces and replication of best practices. These recommendations strongly echo SSRP's emphasis on reducing regional disparities through equitable resource allocation, decentralized planning, and localized solutions (SSRP: Equity and Inclusion). Similarly, SSDP prioritizes "Equity and Inclusion" (SSDP Program) with calls for "context-specific interventions" and uses an Equity Index for targeted support in disadvantaged districts. SESP further reinforces this by emphasizing "equitable access to quality education" (SESP Objective) across regions and actively updating its "Consolidated Equity Strategy" to address existing disparities.

Parental and Community Engagement

NARN findings strongly show a strong association parental support, including homework help, providing materials, and school visits, significantly boosting student achievement. Parental education, especially that of mothers, is identified as a key determinant of children's academic success. NARN recommends that the Ministry of Education, Science, and Technology (MoEST) collaborate with local governments to enhance parental engagement through family literacy programs, particularly mothers. These recommendations are well-aligned with the policy frameworks. SSRP stressed community and parental involvement as inevitable for quality education (SSRP Chapter 6: Community Participation) and advocated for "School Management Committees" (SMCs). SSDP further prioritizes "Community Participation and Accountability" advocating for strengthening SMCs and increasing parental engagement in ECED/PPE through parental education and integrated programs linking literacy with health, hygiene, and income generation. SESP also highlights "community mobilization" for school accountability and promotes "parent-teacher associations" to strengthen home-school linkage.

Medium of Instruction

NARN findings reveal that English-medium schools outperform Nepali-medium schools in Reading, and home language (L1) significantly. NARN recommends to have dedicated studies to resolve the debate between English and Nepali as mediums of instruction. It also suggests that teachers should adopt children's home languages and receive "basic-level language learning packages" and comprehensive language training for their professional development. The policy frameworks acknowledge this complex issue. SSRP highlighted multilingual education while urging research on language policies and advocating for mother-tongue-based instruction. SSDP supports "multilingual education" (SSDP Program 3) and recommends research on language policies, promoting "mother-tongue-based multilingual education." It also provisioned mandatory training for ECED/PPE facilitators in Nepali and mother tongue languages and framed a "Languages of Education Strategic Framework." SESP supports multilingual education and stresses improving English proficiency for "global competitiveness" (SESP Component 2), recommending "teacher training for English language delivery." It also supports mother-tongue-based instruction in early grades and the translation of ECED materials into local languages. Despite policy provisions and the National Curriculum Framework 2019, proper implementation of mother-tongue-based education remains a challenge, though local governments are now promoting local languages through local curricula.

Resources and Infrastructure

NARN findings show that the availability of sufficient classrooms improves reading performance, and the timely availability of textbooks significantly impacts student achievement. NARN found that a small percentage of students still lack textbooks even by the end of the academic session which creates disparities. NARN recommends ensuring adequate infrastructure that mirrors SSRP's goals of eliminating overcrowded classrooms and calls for the timely availability of textbooks to all students. It also emphasizes enhancing teachers' capacity to utilize a variety of learning materials, including printed, electronic, and online resources. Aligning with this, SSRP prioritized infrastructure development (SSRP: Physical Facilities), emphasizing "minimum standards" for schools. SSDP uses "School Improvement Grants" for infrastructure development emphasizing "child-friendly schools" with adequate facilities and targeted interventions for classrooms with WASH facilities. SESP prioritizes safe and inclusive school infrastructure by allocating funds for classroom construction and resource availability.

Leadership and Teacher Training

NARN findings show that trained headteachers positively impact student outcomes. NARN recommends periodic training for headteachers and advises educational managers and policymakers to find ways to encourage community school teachers to create caring environments and implement rigorous teaching and learning practices. It also suggests that the CDC define minimum learning standards, with CEHRD developing aligned teacher training guidelines and NEB creating evaluation guidelines. Additionally, NARN recommends performance-based incentives for schools and teachers to boost achievement. These are consistently emphasized in the policy frameworks. SSRP stressed leadership training for school heads (SSRP: Governance and Management) and called for capacity-building programs for headteachers. SSDP's "Leadership and Management" component also focuses on training for school heads and includes capacity-building programs. Recognizing the lack of effective performance management and career paths for teachers, SSDP strategies include developing teacher performance appraisal systems that link recognition and incentives to career development, and establishing mentor programs. Moreover, SESP's "Leadership Development Program" (SESP Component 5) also focuses on training school heads and emphasizes continuous professional development for teachers, including teacher training for English language delivery.

Foundational Literacy and Secondary Readiness

According to NARN data, basic literacy is unexpectedly low; 10% of Grade 3 students still cannot read a single word. Moreover, a lot of students in higher grades fail to achieve even basic proficiency levels across core subjects, suggesting an imbalance in learning across several curricula and an ongoing learning crisis. Investigating why education is not able to develop higher-order cognitive skills, NARN advocates curriculum and textbook changes to involve students in activities that require higher-order thinking and recommends focused reading-oriented interventions. These results and suggestions directly line up with the policy frameworks since SSRP gave fundamental numeracy and literacy top priority with its "Early Grade Reading Program." Through its "Early Grade Reading and Math Program," this policy document especially targets basic literacy and numeracy while clearly mentioning "remedial programs for struggling readers." Additionally noting "foundational literacy/numeracy is essential for secondary success," SESP suggests "remedial programs for lagging students, aligning with NARN's recommendation for early-grade reading interventions."

Socioeconomic and Demographic Factors

NARN results show that student performance is significantly affected by socioeconomic and demographic elements; age and home language (L1) have particular impact. It also exposes differences between ethnic groups, whereby students from *Dalit* and *Madheshi* communities routinely score lower than Brahmin and Chettri students. Female students also show notably lower marks than their male counterparts. The achievement of children is found to be much influenced by parental education level, especially that of their mothers. NARN advises creating interventions to lessen gender-based disparities, including teachers using student-friendly behaviour with an eye towards girls, applying remedial education, and offering affirmative actions including scholarships and other incentives for women. Encouragement of teachers to use children's home languages and inclusion of language learning packages into their professional development also help to address language problems. Targeting mothers especially through family literacy programs, raising parents' literacy levels is advised to help to improve children's academic performance and advance social equality. These results are in line with the inclusive and equitable policies included into national agendas. SSRP underscores Mother-tongue-based education and inclusive education for underprivileged groups. SSDP developed the "Consolidated Equity Strategy," which emphasized inclusive education for underprivileged groups, and advocated "mother-tongue-based multilingual education. "SESP continues to prioritize inclusive education with the high focus on "mother-tongue-based instruction in early grades alleviating transitions to higher grades, and providing scholarships for disadvantaged students.

The comprehensive results and recommendations of the NARN study offer vital, practical insights that directly support and operationalise Nepal's strategic priorities of key education sector plans SSRP, SSDP, and SESP. From correcting basic skill gaps and regional disparities to strengthening school leadership, increasing parental involvement, and removing socioeconomic barriers, NARN's data supports the general objectives of these policies. While SSRP developed the basic policy, NARN's data provides vital proof for improving present policies and guiding future initiatives including SESP 2022/23–2031/32. Along with a shared dedication to data-driven policies, the consistent emphasis on quality enhancement through teacher training, infrastructure, and community involvement highlights the cooperative approach needed to achieve fair and effective educational outcomes in Nepal

In Nepal, sector-wise school education plans were formulated and operationalized through the endorsement and implementation of various policies and programmes following the constitutional aspirations, mandates, and provisions. This study attempted to examine how

educational policies and provisions align with the policy recommendations made by the NASA studies conducted at various levels over different years. The NASA study is considered a key instrument for ensuring the effectiveness of education service delivery by promoting good governance across the system. As part of this effort, SESP's one of the core strategies involves strengthening national assessments of student achievement, alongside performance audits of schools and educational institutions. These assessments provide critical evidence to inform policy and practice, contributing to the development of a responsive system that aims to improve the quality of school education based on data-driven evidence.

Equity, quality, competence, good governance, management and resilience are main priority areas of SSDP. SSDP attempted to reduce existing inequalities and to contribute to socioeconomic development by enhancing the capacity of human resources.

The SESP mission is to ensure that all citizens have access to relevant, high-quality education through a capable, well-governed, and accountable public school system that is aligned with regional and international standards. The SESP has articulated a set of objectives along with corresponding strategies designed to achieve them effectively. SESP core values and guiding principles include diversity, inclusiveness, equity, integrity, student centeredness, good governance and innovation. The SESP aims to enhance the quality and relevance of overall school education by ensuring school readiness, foundational learning, and quality learning achievement for every child. To achieve this, it emphasizes the provision of essential physical infrastructure and educational resources to create a safe, inclusive, and diverse learning environment; the revision of curricula and textbooks to ensure they are standardized, relevant, inclusive, and aligned with current knowledge and skills; and the adoption of modern, practical pedagogical approaches to improve learning outcomes for all students.

Chapter V

Analysis of primary data: Status of implementation of NARN and NASA

Recommendations

The data obtained from the field study is presented in this chapter. Data was collected based on two themes NARN and NASA. NARN and NASA based result is presented in different sections.

The data obtained from the field study is presented in this chapter. Data was collected based on two themes NARN and NASA. NARN and NASA based result is presented in different sections. The survey includes 180 teachers from Grade 5, 8, and 10 whereas 65 teachers from Grade 3. The distribution of the respondents is presented in Figure 4 and 5. Out of total teachers from class 5, 8, and 10 around one-fourth are from each subject as Nepali (26.6%), English (23.3%), Mathematics (25%), and Science (26.1%). Similarly, more than one-third (37.8%) teachers are from Grade 10, one third from Grade 8 (33.3%), and less than one-third are from Grade 5 (28.9%).

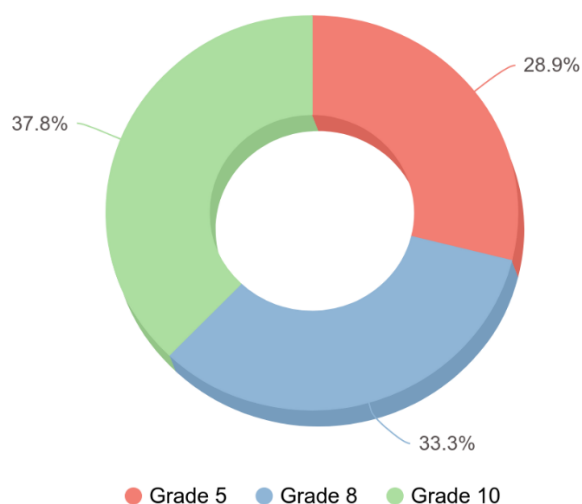


Figure 4 Distribution of teachers based on classes

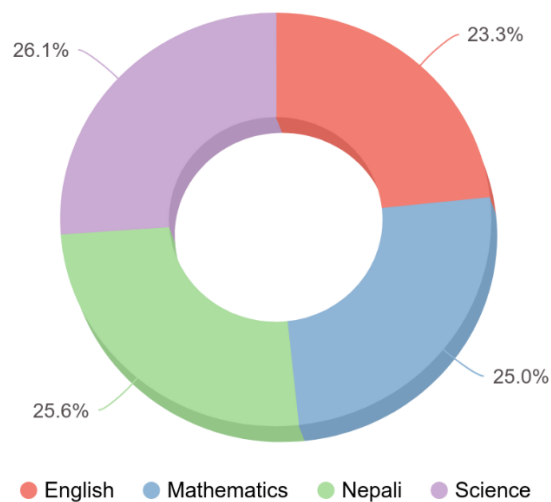


Figure 5 Distribution of teachers based on subjects

NARN Focused Results

Under NARN, eight themes awareness and communication of NARN Result, specific institutional action (early grade reading and numeracy), learning environment and resource management, professional development opportunities, instructional practices, assessment practices, use of technology and parental engagement are developed and data obtained in the respective theme is analysed and interpreted.

Awareness and Communication of NASA and NARN Results

Regarding awareness and communication of NASA and NARN results, interview with teachers, head teachers, local education officers and FGDs with teachers teaching at grade 3 (Mathematics and Nepali) were conducted. The perceptions of teachers towards awareness and understanding of NASA and NARN. The responses show a varied level of familiarity, ranging from limited knowledge to a clear understanding of their purpose and implications (See more detail in Figure 6).

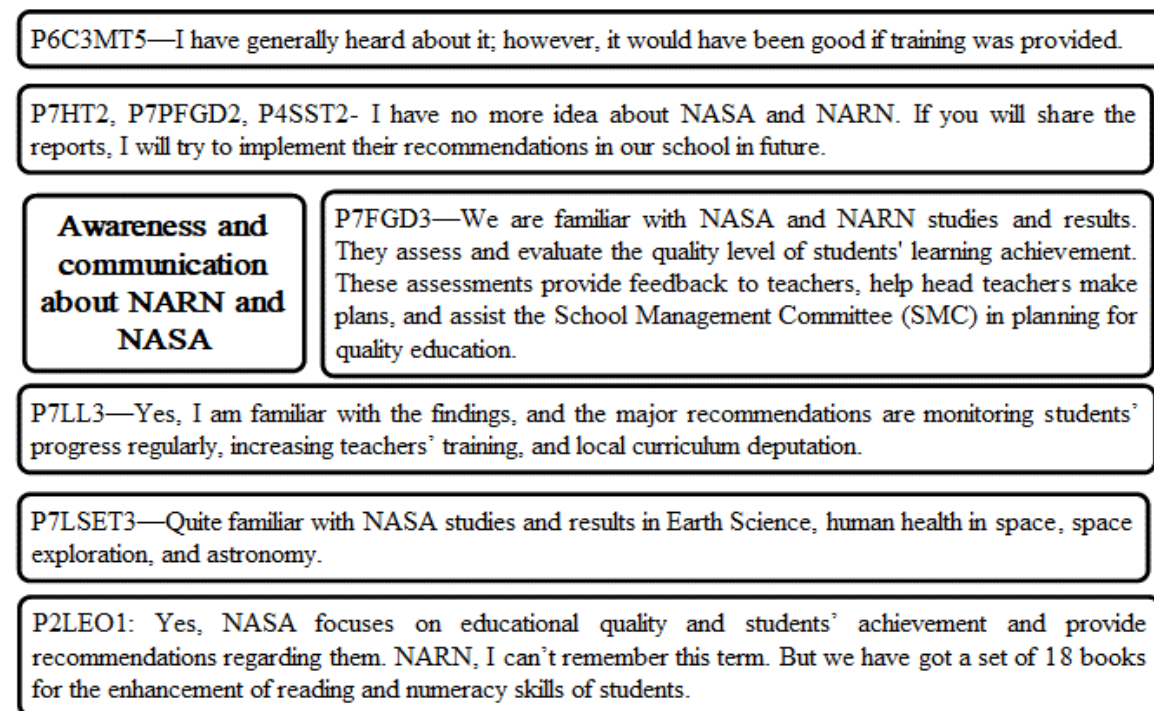


Figure 6 Awareness and Communication about NASA and NARN

Some respondents indicated minimal awareness, with some with a common view, that they do not have any idea about NASA and NARN. (P7ILE2, P7PFGD2, P4SST2). Another participant expresses a similar view, saying, *"I have generally heard about it; however, it would have been good if training was provided"* (P6C3MT5), pointing to a gap in dissemination and capacity building.

On the other hand, several respondents demonstrated a deeper understanding of these assessments. For instance, one of the respondents remarked, *"We are familiar with NASA and NARN studies and results. They assess and evaluate the quality level of students' learning achievement... help head teachers make plans, and assist the School Management Committee (SMC) in planning for quality education"* (P7FGD3). Moreover, the impact of NASA findings is acknowledged in terms of shaping educational strategies. As the respondent P7LL3 shared, *"Yes, I am familiar with the findings, and the major recommendations are monitoring students'*

progress regularly, increasing teachers' training, and local curriculum deputation." This implies that NASA findings are actionable and serve as a basis for continuous improvement. Some respondents connected NASA with subject-specific areas, as seen in the respondent P7LSE3 view: *"Quite familiar with NASA studies and results in Earth Science, human health in space, space exploration, and astronomy,"* although this might reflect a confusion with the U.S. space agency rather than the national educational assessment in Nepal.

Finally, the distinction between NASA and NARN was noted by a participant who mentioned, *"NASA focuses on educational quality and students' achievement and provides recommendations regarding them. NARN, I can't remember this term. But we have got a set of 18 books for the enhancement of reading and numeracy skills of students"* (P2LEO1), indicating that while NARN may be less widely understood, its associated resources are being used in schools.

Therefore, the qualitative findings show a range of knowledge from basic awareness to thorough understanding. Although some participants show a basic awareness, they feel the need of training to help them to understand and apply the results. For others, they know very little to nothing, but they are eager to study the report. Some Head teacher, most of the Local Education Office, and Provincial Officer show a more advanced knowledge, pointing out that evaluations of student learning outcomes by NASA and NARN help to direct teachers and guide school management planning. Among the particular suggestions given are changing local curricula, improving teacher preparation, and consistent student progress monitoring. Another participant also mentions getting instructional materials meant to raise literacy and numeracy. All things considered, the picture emphasizes the need of spreading assessment results and giving enough help to guarantee their successful application in the educational scene of Nepal.

Specific Institutional Action (early grade reading and numeracy)

This study also examines specific institutional actions targeting early grade reading and numeracy, combining quantitative measures of implementation with qualitative insights into teachers' instructional practices and challenges.

The Table 8 presents the status of teachers' perceptions towards specific institutional actions aimed at improving student learning outcomes. Overall, the mean scores for the statements range from 3.25 to 3.65, with a total average mean of 3.41 (SD = 1.05), indicating a moderate level of agreement among teachers. The highest perceived action was the regular conduct of numeracy improvement programs (M = 3.65, SD = 1.23), suggesting that teachers recognize consistent efforts in enhancing arithmetic and related skills. This is followed by oral assessments in numeracy (M = 3.48, SD = 1.19) and regular monitoring of students' reading

comprehension ($M = 3.40$, $SD = 1.33$), reflecting a fair level of institutional focus on formative assessment. Specific actions to improve reading fluency in early grades received slightly lower mean scores ($M = 3.29$ and 3.25), which may indicate either a perception of less consistent implementation or variability across different teachers' experiences. The relatively high standard deviations across items suggest varying perceptions among teachers regarding these institutional efforts.

Teachers assess institutional initiatives to enhance student learning as moderately implemented, with an average mean score of 3.41 ($SD = 1.05$). The major agreement among teachers is the consistent implementation of numeracy development programs, which indicates that they acknowledge their importance. Oral numeracy evaluations and reading comprehension monitoring are also recognised as formative assessment methods; however, given less priority. Inconsistent implementation or teacher experiences may have contributed to the lower mean results of actions that prioritised early grade reading fluency. The results suggest that there is a necessity for more consistent and effective reading fluency programs and institutional homogeneity, despite the recognition of efforts to improve student learning, particularly in numeracy.

Table 8 Status of Teachers' Perceptions towards Specific Institutional Action

Statements	Mean	SD
Our school has taken specific actions to improve reading fluency in early grades.	3.29	1.33
Numeracy improvement programs (e.g., arithmetic, currency counting) are regularly conducted.	3.65	1.23
Students' reading comprehension is monitored regularly.	3.40	1.33
Students are assessed orally in numeracy to gauge conceptual understanding.	3.48	1.19
Our school has taken specific actions to improve reading fluency in early grades.	3.25	1.26
Total	3.41	1.05

Figure 7 show that qualitative findings in terms of stakeholder's specific instructional plan. Teachers emphasize the importance of foundational learning and gradual progression. As P4C3MT5 explains, *"We have to teach them gradually. For instance, we say the Devanagari number is 1 (EK) and it is written 1 (one) in Hindu-Arabic. We have to teach them from the beginning."* This approach reflects that there is a need of bridging linguistic and symbolic

understanding of the students. Similarly, P6C3MT1 highlights the strategy of building prior knowledge of the students: *"Issues are addressed through feedback related to the specific lesson, moving from simple to complex concepts by discussing topics learned in previous grades."* According to PAC3MT5, *"First, we have to teach the knowledge of the digit in one or two classes. This will help them recognize the numbers later."* These responses show a shared commitment to scaffolding learning in a structured and accessible way.

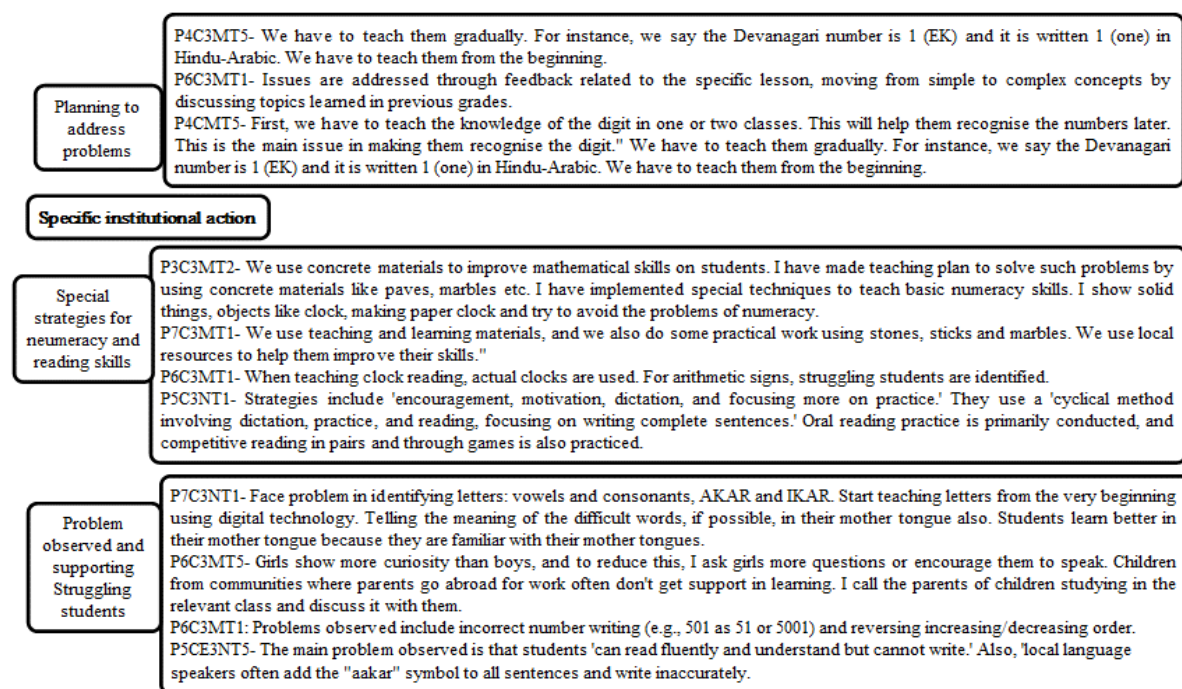


Figure 7 Teacher's Reflection on Specific Institutional Actions

Furthermore, P6C3MT2 shares his idea as, *"We use concrete materials to improve mathematical skills on students... like paves, marbles etc."* The approach adopted helps students to internalize abstract concepts in mathematics. P4C3MT1 notes, *"When teaching clock reading, actual clocks are used. For arithmetic signs, struggling students are identified."* This indicates a hands-on activity applied in the schools. Meanwhile, according to PSC3NT1: *"Strategies include encouragement, motivation, dictation, and focusing more on practice... a cyclical method applied for dictation teaching."* This action reflects a blend of material support and pedagogical techniques applied for students' needs.

Teachers observe varied challenges among students linked with socio-cultural contexts. P7C3NT1 identifies literacy issues of the students: *"Face problem in identifying letters; vowels and consonants... Start teaching letters from the very beginning using digital technology."* This suggests a tech-assisted remedial approach. P6C3MTS observes gender and socio-economic disparities: *"Girls show more curiosity than boys... Children from communities where parents go abroad for work often don't get support in learning."* On the other hand, According to

PSC3NT5 there is a disconnection between reading and writing: "*Students can read fluently and understand but cannot write... local language speakers often add the 'aakar' symbol.*" These insights underline the importance of contextualized and inclusive support strategies.

The findings from the response from several stakeholders show that teachers adopt a structured, scaffolded approach to foundational learning, emphasizing gradual progression and the bridging of linguistic and symbolic knowledge. By incorporating concrete materials, hands-on activities, feedback, and technological aids, teachers attempt to make abstract concepts accessible according to students' needs. They are familiar to the challenges faced by students, such as literacy difficulties, gender and socio-economic disparities, and disconnects between reading and writing, and address these through inclusive and contextually relevant strategies. Therefore, the instructional practices from the instructors reflect a commitment to support individual student development while remaining sensitive to the broader socio-cultural factors that influence learning.

While teachers show a strong qualitative commitment to structured, inclusive, and contextually responsive basic learning practices, quantitative data points to discrepancies in the implementation, particularly in terms of early grade reading fluency. This implies the need of more consistent and successful reading fluency programs along with institutional alignment to ensure better student outcomes.

The triangulated findings from both qualitative and quantitative data reveal a mixed level of awareness and communication regarding NASA and NARN results among educational stakeholders. Qualitative interviews and FGDs show that while some teachers and officials especially head teachers, Local Education Officers, and Provincial Education Officers demonstrate a clear understanding of NASA and NARN's objectives and relevance, many classroom teachers express limited or no familiarity. Some participants even confuse NASA with the U.S. space agency, indicating a need for better dissemination and clarification. The lack of structured training and communication mechanisms has contributed to this uneven awareness, despite the acknowledged potential of these assessments to inform educational planning and school-level strategies.

Quantitative findings complement this picture by highlighting moderate implementation of institutional actions targeting early grade learning. With an overall average mean of 3.41 (SD = 1.05), teachers recognize efforts such as numeracy improvement programs and formative assessments, although reading fluency interventions appear inconsistently applied. Qualitative data further emphasize structured, scaffolded, and inclusive instructional strategies used by teachers, including the use of local materials, feedback, and digital tools.

However, these efforts are challenged by contextual factors like language barriers, socio-economic disparities, and limited institutional coherence. Overall, the findings stress the need for systematic dissemination of assessment results and more consistent support for foundational learning initiatives across schools.

Learning Environment and Resource Management

Table 9 illustrates teachers' perceptions of the status of the learning environment in their schools. The overall mean score is 3.43 (SD = 1.12), indicating a moderate level of agreement among teachers regarding the presence of supportive learning conditions. The highest-rated item is the discouragement of bullying activities (M = 3.60, SD = 1.41), suggesting that teachers perceive strong institutional efforts to promote a safe and respectful environment. Encouragement for students to engage in homework and reading at home also received a relatively high mean score (M = 3.49, SD = 1.46), reflecting an emphasis on learning beyond the classroom. Equitable learning environments and the availability of reading materials both received identical mean scores (M = 3.37), with slightly higher variability in perceptions regarding equity (SD = 1.51). Involving parents to support reading and numeracy at home had the lowest mean score (M = 3.32, SD = 1.09), suggesting this area may need more consistent or structured engagement. Overall, while the data indicates moderate institutional efforts across various aspects of the learning environment, the relatively high standard deviations point to diverse experiences and perceptions among teachers.

Table 9 Status of Teachers' Perceptions towards Learning Environment

Statements	Mean	SD
Our school has equitable learning environment for students	3.37	1.51
There are accessible reading materials for students in classrooms.	3.37	1.31
We involve parents to support reading and numeracy at home.	3.32	1.09
Students are encouraged to do homework and read at home.	3.49	1.46
We discourage bullying activities inside and outside the school.	3.60	1.41
Total	3.43	1.12

Figure 8 detailly explored the teachers' reflection regarding gender, equity difference and practices of multilingual classroom. Teachers largely agreed that no notable differences exist in student learning performance based on gender and ethnicity. For instance, P1CEMT5 stated, *"No, there are no differences in learning performance based on gender and ethnicity. We focus on equal participation in classroom activities, and their seating arrangement is kept according to the learning capacity of the students."* Similarly, P6CEMPT1 echoed, *"No*

notable differences have been found in student learning performance based on gender and ethnicity.”

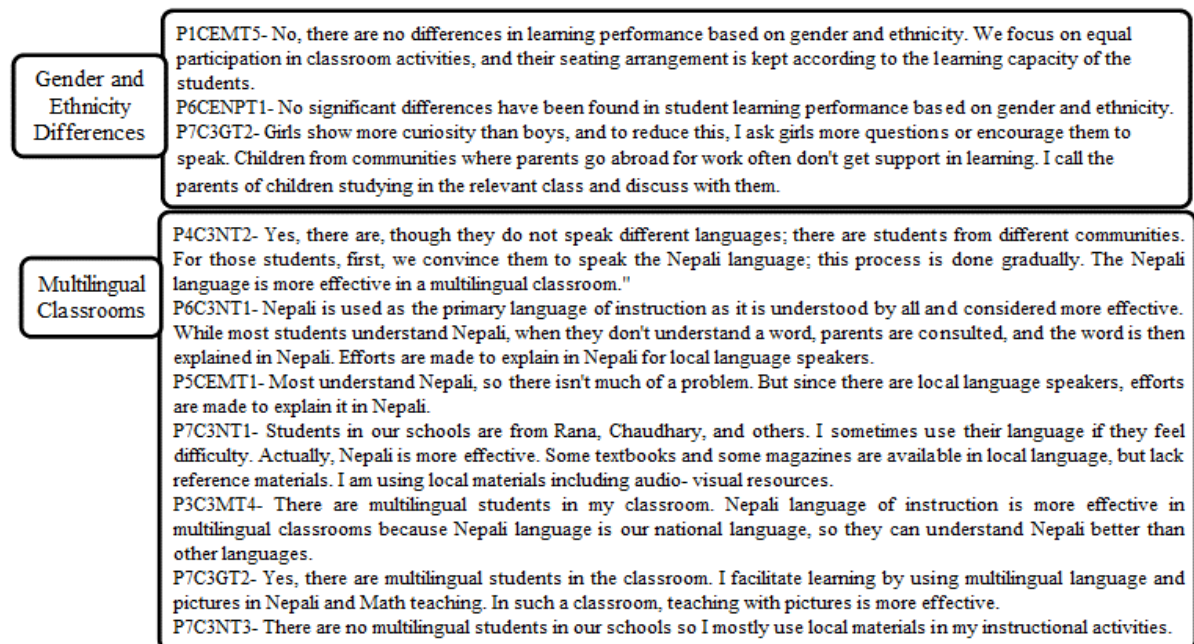


Figure 8 Equity Differences and Practices of Multilingual Classroom

Some nuanced gender-based classroom dynamics were noted. P7C3GT2 observed, *“Girls show more curiosity than boys, and to reduce this, I ask girls more questions or encourage them to speak.”* This indicates an active pedagogical strategy to balance participation. P7C3GT2 also mentioned consulting with parents of children from migrant worker families, emphasizing that *“Children from communities where parents go abroad for work often don't get support in learning.”*

There was broader diversity in views and experiences concerning multilingual classrooms. Most respondents emphasized that Nepali is used as the primary medium of instruction, as it is widely understood and institutionally preferred. P6C3NT1 noted, *“Nepali is used as the primary language of instruction as it is understood by all and considered more effective.”* Yet, challenges arise when students do not comprehend Nepali well. In such cases, *“words are explained in Nepali,”* and *“parents are consulted,”* indicating adaptive strategies (P6C3NT1).

Several teachers acknowledged linguistic diversity in their classrooms. For example, P4C3NT2 said, *“Yes, there are linguistic differences, though they do not speak different languages; there are students from different communities... the Nepali language is more effective in a multilingual classroom.”* P5CEMT1 and P3C3MT4 also emphasized efforts to *“explain in Nepali”* or use Nepali as the dominant language for instructional clarity.

Some teachers utilized local languages when needed. P7C3NT1 shared, *“Students in our schools are from Rana, Chaudhary, and others. I sometimes use their language if they feel difficulty. Actually, Nepali is more effective.”* Visual aids and local materials were also highlighted as supportive tools: *“I am using local materials including audio-visual resources.”* (P7C3NT1).

Interestingly, a few teachers reported no multilingual students in their schools. P7C3NT3 explained, *“There are no multilingual students in our schools so I mostly use local materials in my instructional activities.”*

P4C3MT2- *We use local resources and sometimes make materials by ourselves. In some cases, we also buy teaching materials; for this, we ask our HT to facilitate the purchase of materials. Other than this, we stay in school after our class is over and make teaching materials. We do have a digital board, but we are more focused on local resources or buying necessary equipment from the stationery store.*

P6C3NP3- *For reading, teachers mostly use self-made materials (sometimes colorful paper) and hang materials in the classroom. Teacher-made materials are more prevalent than purchased ones. Reference materials like story and poetry books are available. Smart TVs are used for teaching via YouTube. Textbooks are sufficient, and there is sufficient access to the library for engineering and other streams.*

P3C3NT1- *I use song, poems, audio-visuals, flashcards, charts, real and animated materials, and the abacus approach for teaching.*

Figure 9 Use of Instructional Materials

The findings highlight a strong inclination among teachers toward utilizing locally available and self-made teaching materials, emphasizing practicality and resourcefulness over dependency on commercial tools. One teacher remarked, *“We use local resources and sometimes make materials by ourselves... we are more focused on local resources or buying necessary equipment from the stationery store,”* reflecting a hands-on and budget-conscious approach. Across the cases, teacher-created content, including colorful charts, flashcards, and audio-visuals, dominates classroom instruction. While digital tools like smart TVs and digital boards are available, they are often secondary to physical and tactile materials. Access to libraries and supplementary reading materials such as storybooks and poetry supports this blended approach, combining traditional resources with occasional technological integration to enhance the learning experience.

Teachers agreed that there is no substantial difference in student learning performance by gender or ethnicity. Some of them observed that girl students exhibit a greater degree of curiosity. Nepali is the primary language used for instruction in multilingual classrooms due to its widespread comprehension. However, teachers also adapt by utilising local languages (Like Tharu, Tamang), visual aids along with discussing with parents. Teachers also found to practice

inclusive and responsive strategies to accommodate linguistic and socio-cultural diversity in their classrooms.

The findings from both qualitative and quantitative data indicate that teachers generally perceive their school environments as moderately supportive of student learning. Teachers emphasized that their classrooms promote safety, discourage bullying, and encourage students to engage in learning activities beyond the classroom, such as reading and homework. While there is a shared belief that student learning does not significantly differ by gender or ethnicity, some teachers noted that girls tend to show more curiosity, prompting them to adopt more interactive teaching strategies. In multilingual classrooms, Nepali is primarily used for instruction due to its widespread understanding, though teachers adapt by using local languages when necessary and consulting with parents to support learning. Many teachers use locally available and self-made teaching materials, including visual aids and audio-visual resources, valuing practicality over reliance on commercial or digital tools. Although some digital resources are available, they are used less frequently compared to physical teaching aids. A recurring concern is the limited involvement of parents in supporting reading and numeracy at home. Overall, the learning environment reflects a commitment to equity and inclusion, with teachers employing flexible and responsive strategies to address the diverse linguistic and socio-cultural backgrounds of their students.

Professional Development Opportunities

Table 10 presents teachers' perceptions regarding professional development opportunities within their schools. The overall mean score is 3.32 (SD = 1.04), indicating a moderate level of agreement among teachers about the availability and impact of professional development. The highest-rated item is the headteacher receiving leadership training in the past two years ($M = 3.51$, $SD = 1.24$), suggesting that such training is relatively common and recognized by teachers. This is closely followed by the repeated item on headteacher training ($M = 3.45$, $SD = 1.25$), reinforcing this perception. Teachers also moderately agree that the headteacher's leadership positively influences student performance ($M = 3.35$, $SD = 1.33$), highlighting the perceived importance of school leadership. However, the lowest-rated item concerns teacher training on early-grade reading and numeracy strategies ($M = 2.95$, $SD = 1.27$), indicating a perceived gap in ongoing professional development for teachers themselves.

Table 10 Status of Teachers' Perceptions towards Professional Development Opportunities

Statements	Mean	SD
The headteacher has received leadership training in the past two years	3.51	1.24

Teachers are trained on strategies for early-grade reading and numeracy	2.95	1.27
The headteacher's leadership positively impacts student performance	3.35	1.33
The headteacher has received leadership training in the past two years	3.45	1.25
Total	3.32	1.04

The Figure 10 represents the teachers responded on Professional Development Opportunities," which showed a variety of experiences of teachers with training programs and capacity-building efforts, which reveal the scope, duration, and content of professional development activities accessed by the teachers, along with their perceived impact.

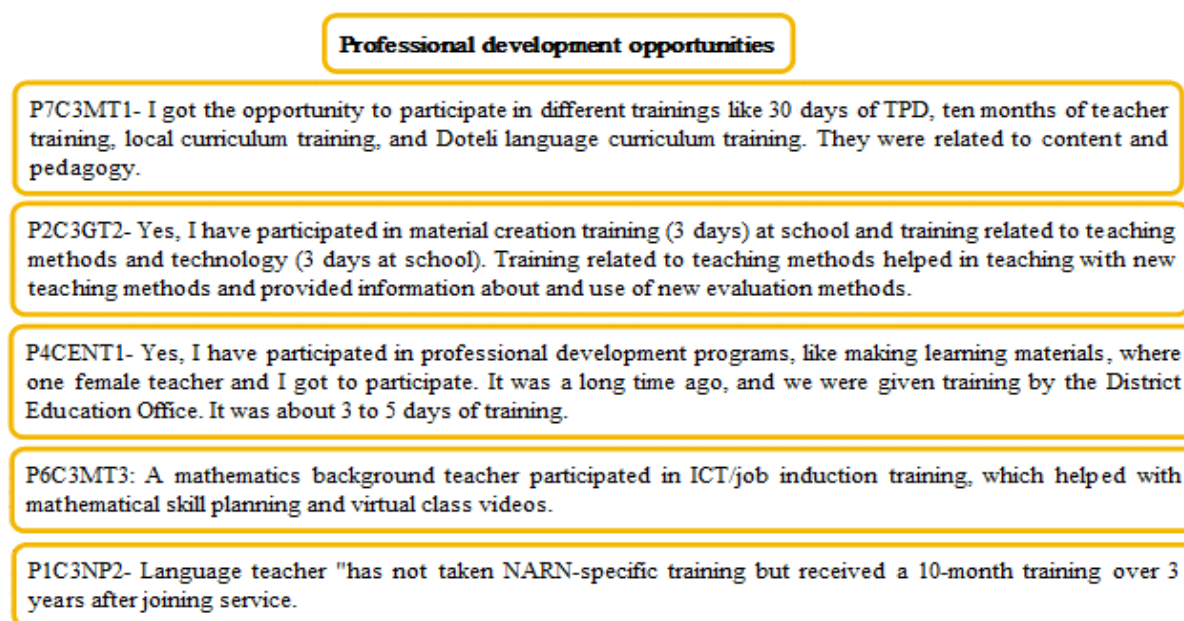


Figure 10 Stakeholder's Reflection on Professional Development Opportunities

Few teachers reported that they got opportunity to participate in various training programs. For instance, P7C3MT1 shared that he got the opportunity to participate in different trainings like 30 days of TPD, ten months of teacher training, local curriculum training, and Doteli language curriculum training, which were related to content and pedagogy. This indicates a significant investment of the government in both general and context-specific pedagogical development, including local language inclusion.

Similarly, P2C3GTP2 noted participation in material creation training (3 days) at school and training related to teaching methods and technology (3 days at school). This teacher emphasized the utility of training in enhancing teaching methods and evaluation practices, suggesting tangible classroom application. Moreover, P4CENT1 recalled a somewhat earlier training experience facilitated by the District Education Office, as training was received long time ago, for 3 to 5 days. The emphasis on learning material preparation hints at capacity-building in instructional resource creation. Similarly, P6C3MT3, a mathematics teacher,

participated in an ICT and job induction training which was related to “*mathematical skill planning and virtual class videos.*” This shows a move toward integrating technology into subject-specific pedagogy.

In contrast, P1C3NP2, a language teacher, pointed out a lack of targeted professional development, specifically in relation to NARN: “*has not taken NARN-specific training but received a 10-month training over 3 years after joining service.*” This reflects potential gaps in the alignment of professional development with national assessment systems. This shows NARN (Numeracy and Literacy skill development) targeted training is still lacking for the teachers teaching in Grade 3.

The qualitative information obtained from teachers’ response on opportunity of professional development activities revealed that teachers have received various professional development training, from short-term school-based training to extensive government-supported initiatives like TPD, refresher training, ICT training, and content specific trainings. These trainings have focused on pedagogy, curriculum development, technology integration, and local language instruction. This demonstrates efforts that have been made to enhance teaching quality and contextual applicability. However, gaps remain, particularly in targeted training for national assessment systems like NARN, indicating a need for more aligned and inclusive capacity-building efforts for foundational skill development in early grades.

Findings from both quantitative and qualitative data reveal that teachers generally perceive professional development opportunities as moderately available. Most agree that headteachers have received leadership training, which is viewed positively. Qualitative responses support this, with many teachers reporting participation in various training programs, including TPD, ICT, curriculum development, and local language instruction. These trainings have enhanced pedagogical skills and classroom practices. However, both data sources highlight a gap in professional development specifically focused on early-grade reading and numeracy, especially related to NARN. Teachers expressed a lack of targeted training aligned with national assessments. This indicates the need for more inclusive and assessment-aligned training programs, particularly in foundational skills for early grades.

Instructional Practices

The study examines instructional practice of the teachers using both quantitative and qualitative data. Table 11 summarizes teachers’ perceptions of instructional practices in their classrooms. The overall mean score is 3.36 (SD = 1.29), indicating a moderate level of agreement regarding the use of effective and engaging teaching strategies. Among the items, providing students with sufficient time to participate in reading activities received the highest

mean score ($M = 3.40$, $SD = 1.33$), suggesting that teachers generally feel students are given adequate opportunities to engage in literacy tasks. The use of student-centered teaching and learning approaches closely follows ($M = 3.37$, $SD = 1.47$), indicating a fair level of implementation of learner-focused methods. The lowest-rated item is the use of real-life examples to promote numeracy skills ($M = 3.32$, $SD = 1.32$), which may point to a need for more contextualized instruction in mathematics.

Table 11 Status of Teachers' Perceptions towards Instructional Practices

Statements	Mean	SD
We use student-centered teaching and learning approaches	3.37	1.47
Students can get enough time to participate in reading activities.	3.40	1.33
We use real-life examples to promote numeracy skills of students.	3.32	1.32
Total	3.36	1.29

The qualitative responses from teachers reflect a range of student-centered, context-based, and multilingual-inclusive approaches aimed at improving early-grade learning, particularly in numeracy and literacy (Figure 11).

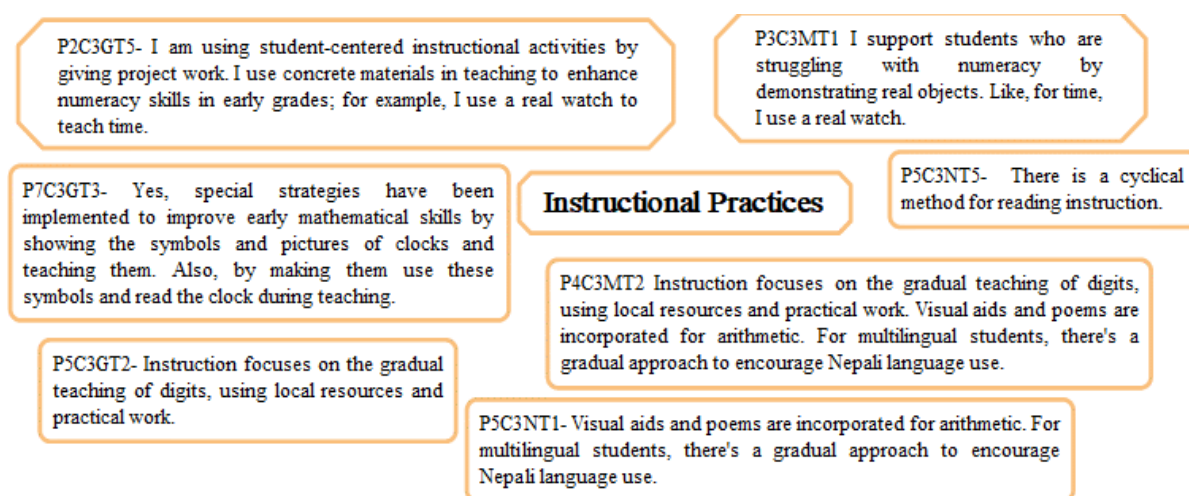


Figure 11 Teachers' Reflection of Instructional Practices

Several teachers emphasize the use of concrete materials and practical tools. P3C3MT1 added to above as, *"I support students who are struggling with numeracy by demonstrating real objects. Like, for time, I use a real watch."* These responses indicate a hands-on, activity-based approach that helps students visualize and grasp abstract mathematical concepts.

"I am using student-centered instructional activities by giving project work. I use concrete materials in teaching to enhance numeracy skills in early grades; for example, I use a real watch to teach time."(Female teacher from Gandaki province)

Teachers also found to be implementing visual and symbolic strategies to aid understanding as P7C3GT3 shared, *“Special strategies have been implemented to improve early mathematical skills by showing the symbols and pictures of clocks and teaching them... making them use these symbols and read the clock during teaching.”* Such practices promote both recognition and application of mathematical concepts.

Teachers instructional design often found to be incorporating local resources and a gradual approach to concept development. P5C3GT2 and P4C3MT2 both mentioned, *“Instruction focuses on the gradual teaching of digits, using local resources and practical work.”* These responses suggest an emphasis on foundational learning and contextual relevance.

The responses also demonstrate an awareness of multilingual way of instruction. P5C3NT1 and P4C3MT2 indicated that, *“Visual aids and poems are incorporated for arithmetic. For multilingual students, there’s a gradual approach to encourage Nepali language use.”* This reflects inclusive strategies that support language development alongside content mastery. In literacy instruction, P5C3NT5 briefly noted, *“There is a cyclical method for reading instruction,”* which implies a structured, repetitive approach to build reading fluency.

The qualitative findings show that teachers adopt hands-on, visual, and contextually relevant strategies, which includes use of real objects, symbols, and local resources to enhance foundational numeracy and literacy skills in early grades. Teachers approach also reflects reflect inclusivity, with gradual language support for multilingual learners and structured methods to build reading fluency.

Findings from both quantitative and qualitative data indicate that teachers are moderately implementing effective instructional practices. Survey results show an overall mean score of 3.36 (SD = 1.29), with the highest ratings for allowing student participation in reading and applying student-centered approaches. However, the use of real-life examples in numeracy was rated lowest. Qualitative data reinforce these findings, highlighting the use of hands-on materials, visual aids, and context-based strategies. Teachers also integrate local resources and support multilingual learners through gradual language development. These practices demonstrate a balanced, inclusive, and practical approach to enhancing early-grade literacy and numeracy skills.

Assessment Practices

The study also explored the perspectives of the teachers towards assessment and evaluation of students learning outcomes adopting both quantitative and qualitative approaches.

Table 12 presents teachers' perceptions of assessment practices, with an overall mean of 3.28 (SD = 1.36), indicating moderate agreement. The highest-rated items, both with a mean of 3.32, reflect the use of continuous assessment and provision of feedback. Slightly lower, at 3.20, is the practice of adapting teaching strategies based on student performance. These results suggest that while assessment practices are moderately implemented, there is variability among teachers, and more consistent application of formative assessment strategies could be beneficial.

Table 12 Status of Teachers' Perceptions towards Assessment Practices

Statements	Mean	SD
We use continuous assessment system to assess students.	3.32	1.54
We provide feedback on each task done by the students	3.32	1.43
We modify our teaching strategies based on students' performance.	3.20	1.43
Total	3.28	1.36

In qualitative part of the study (Figure 12), teachers highlighted the different methods of assessment practices in classroom. According to P5C3NT2, the major emphasis is on classroom assessments, in which students are graded based on their performance during activities. P4CEGT3 agreed and emphasised that performance-based grading in the classroom encourages pupils to achieve their best work. P7C3GT2 highlighted the disparity between students' desire to do homework and their participation in classwork. The teacher replies by congratulating students who complete their homework and encouraging others by having the entire class applause them. Feedback is delivered in a number of methods to help students learn, including written, oral, and symbolic forms. P6CEMT2 noted the Continuous Assessment System (CAS), which aggregates student work into a portfolio to track progress over time, as a numeracy skill-building tool, particularly in Grade 3. According to P5CEMT5, conventional assessments are still given on a regular basis, and instructors and parents are notified of the results to encourage growth. This educator did, however, emphasise the importance of enhancing the present evaluation structure.

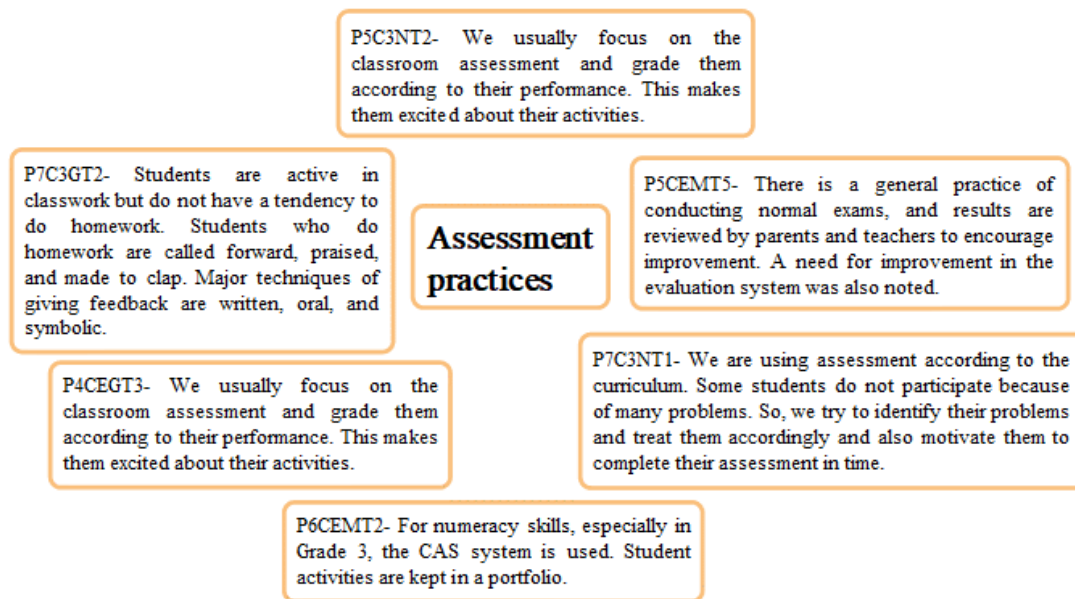


Figure 12 Teachers' Reflection on Assessment Practices of Grade 3

Moreover, P7C3NT1 highlighted that, while assessments are consistent with the curriculum, some students find it difficult to participate due to a number of reasons. To assist students, complete their tests on time, the teacher tries to identify these issues and provides encouragement and support. Finally, P7C3NT1 emphasises a compassionate approach, connecting assessments with the curriculum, and resolving specific student issues to ensure motivation and timely completion. When considered together, these quotes demonstrate how evaluation systems are always evolving to promote inclusion and student progress.

The qualitative findings reflect the adoption of a range of assessment methods, which includes grades allocation based on classroom performance of the students, continuous assessment systems, and conventional tests. These practices are bind with feedback and motivations. These approaches are inclusive and adaptive which incorporates feedback, motivation strategies, and support mechanisms to address individual student needs and align evaluations with curriculum goals.

The triangulated findings from both quantitative and qualitative data reveal that assessment practices are moderately implemented across classrooms. Quantitative results show an overall mean of 3.28, with teachers moderately agreeing on the use of continuous assessment, feedback, and adaptive teaching. Qualitative findings complement this, highlighting diverse assessment methods such as classroom-based grading, continuous assessment systems (CAS), and conventional tests. Teachers emphasized the importance of feedback as written, oral, and symbolic and motivation to support student learning. They also

noted the need to align assessments with the curriculum and provide individualized support to ensure inclusion, engagement, and academic progress.

Use of Technology

This study explored the technology adoption by teachers in their instruction using both quantitative and qualitative approaches. Table 13 shows teachers' perceptions of students' use of technology. The overall mean score is 3.03 (SD = 1.04), indicating a neutral to slightly positive perception. Teachers slightly agree that students frequently use mobile phones or tablets for non-learning purposes (M = 3.02, SD = 1.42), and that technology use is somewhat guided and monitored (M = 3.05, SD = 1.17). These results suggest limited but present efforts in managing technology use, with potential for stronger guidance and integration in learning.

Table 13 Status of Teachers' Perceptions Towards Use of Technology

Statements	Mean	SD
Students frequently use mobile phones/tablets for non-learning purposes.	3.02	1.42
Technology use among students is properly guided and monitored.	3.05	1.17
Total	3.03	1.04

Figure 13 shows the several opinions of the respondents on the use of technology. Teachers acknowledged a spectrum of points of view regarding including digital tools into their lessons. Every respondent offers a different point of view influenced by their background and educational surroundings:

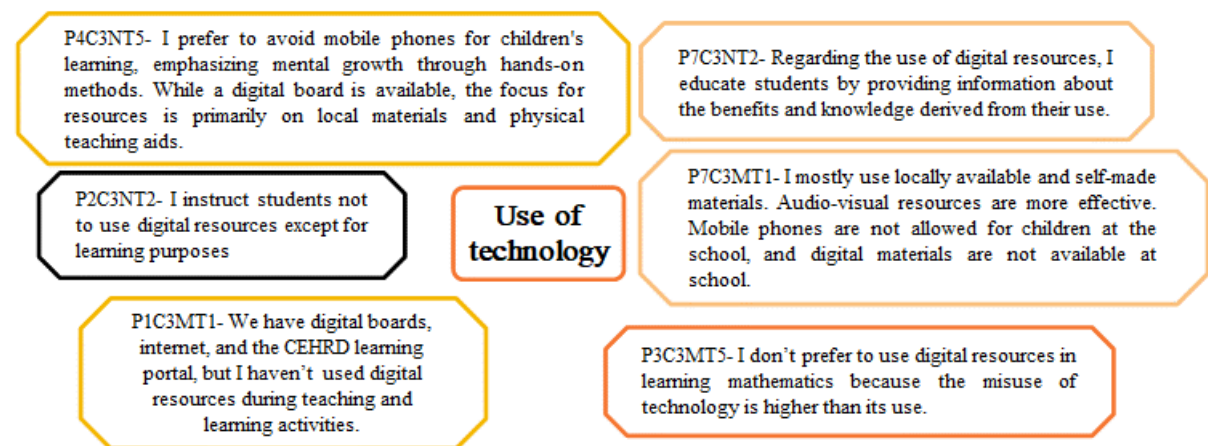


Figure 13 Teachers' Reflection on The Use of Technology in Grade 3

P4C3NT5 stresses a conventional approach and favours practical tools over cell phones to help student's mental growth. She depends more on physical and local teaching aids even though she has a digital board. Likewise, P2C3NT2 discovered that it should teach students to use digital tools only for learning. P1C3MT1 notes the availability of digital infrastructure including internet access and the CEHRD learning portal but admits not having practice of

including these tools into classroom activities. P7C3NT2, on the other hand, discovered to be more proactive in teaching students the advantages of digital resources to improve their knowledge. P7C3MT1 finds audio-visual aids useful, although noting on the ban on mobile phones in schools. She prefers locally produced and self-made materials. Finally, P3C3MT5 shows worry about the way technology is used, especially in mathematics education, which results in a taste for non-digital approaches. This qualitative finding reflected both the possibilities and the difficulties of digital integration in classrooms since it revealed a different participation of teachers with technology in education.

Triangulated findings from both qualitative and quantitative data reveal that teachers hold neutral to slightly positive perceptions of students' use of technology in the classroom. While survey results suggest some level of monitoring and guidance, qualitative insights show varied teacher experiences and attitudes. Some teachers prefer traditional or locally-made materials, while others actively promote digital tools for learning. Overall, technology use in classrooms exists but remains inconsistently integrated, highlighting both opportunities and challenges in digital adoption.

Parental Engagement

Table 14 shows teachers' perceptions of parental engagement, with an overall mean of 3.09 (SD=0.88), indicating moderate agreement. Teachers slightly agree that students benefit academically from family support ($M = 3.15$), and that parents regularly monitor reading and homework ($M = 3.11$). However, school visits by parents to discuss learning progress received the lowest rating ($M = 3.00$), suggesting limited direct involvement.

Table 14 Status of Teachers' Perceptions towards Parental Engagement

Statements	Mean	SD
Parents regularly check on their children's reading and homework	3.11	1.13
Parents visit school to discuss their child's learning progress.	3.00	1.20
Students who receive family support perform better in reading and numeracy.	3.15	1.36
Total	3.09	0.88

The view of several teachers are shown in the Figure 14. The results revealed difficulties and solutions concerning parental involvement in their children's education, particularly in settings characterised by low literacy rates and financial difficulty. Two of the P1C3NT1 and P3C3NT1 teachers agreed most parents are daily wage workers who battle to find time for school involvement, which leads to low parental engagement. Teachers

underline, nevertheless, that schools are trying to increase involvement by means of several initiatives. Among the P5C3NT2 teachers discovered to have proactive behaviours including monitoring homework, teacher-parent contacts, and encouragement of frequent school visits. P4C3MT4 adds that student progress is shared and planned improvements are discussed at frequent monthly meetings. P6C3MT3 notes, though, that some parents are either illiterate or overseas, thus they rely much on teachers for their children's education. P7C3GT2 notes planning group meetings to go over academic advancement and school policies with parents. At last, P2C3MT5 sees how parental ignorance of the value of education influences attendance and involvement of the students.

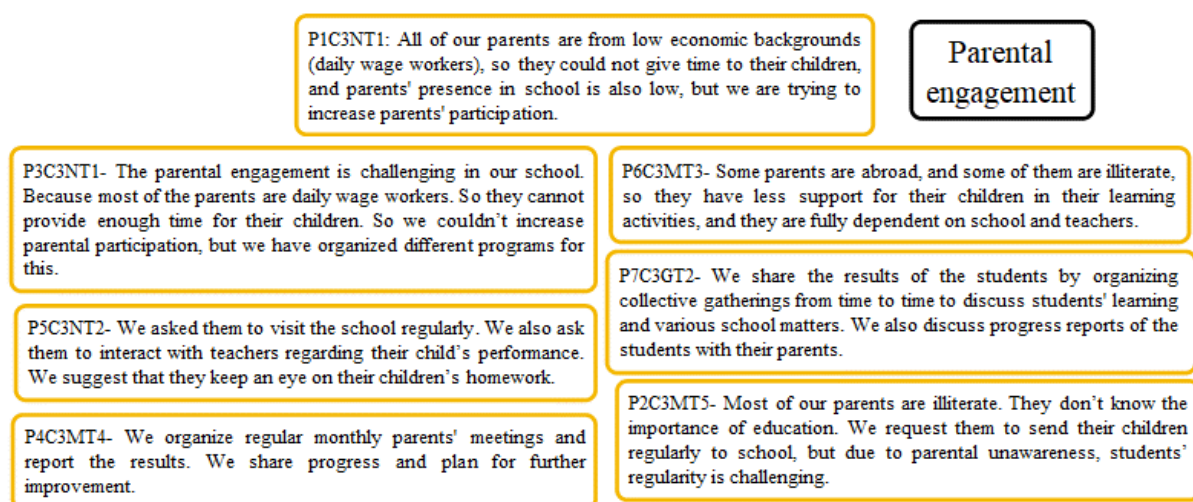


Figure 14 Parental Engagement Related to Grade 3

P3HT1: "To address low parental involvement, we conduct monthly parent meetings, organize home visits for hard-to-reach families, and use phone calls to share students' progress. We also involve community members to encourage parents to prioritize their children's education despite their busy work schedules."

P6HT2: "We tackle the challenge of parental illiteracy by organizing regular awareness sessions, displaying students' work during school events, and simplifying communication through visual aids and local language. We also invite parents to school activities and provide guidance on how they can support learning at home."

The responses from the stakeholders collectively indicate that socioeconomic hardship, illiteracy, and parental unawareness hinder active parental engagement. In this context, schools are taking deliberately bridging this gap through regular meetings, progress sharing, and parental interactions which demonstrates a strong institutional commitment to fostering parental involvement despite prevailing challenges.

Triangulated findings from both qualitative and quantitative data indicate that parental engagement in children's education is moderate. While teachers report some parental support in monitoring homework, direct involvement such as school visits remains limited. Qualitative data highlight key barriers to engagement, including parental illiteracy, financial hardship, and limited awareness of education's importance. Despite these challenges, schools are actively promoting involvement through regular meetings, awareness programs, and communication strategies, reflecting strong institutional efforts to strengthen parental participation.

NASA Focused Results

Planning and Execution

Table 15 presents the status of teachers' perceptions regarding planning and execution in their teaching practices. The mean scores for all three statements are relatively high, indicating a generally positive perception among teachers. The highest mean score ($M = 4.11$, $SD = 0.76$) corresponds to the statement about incorporating diverse learning needs into lesson planning, suggesting that teachers are particularly attentive to student diversity. The statement on adjusting lesson plans based on student progress and feedback also received a strong mean score ($M = 4.06$, $SD = 0.77$), indicating a responsive and reflective teaching approach. Preparing lesson plans in advance and aligning them with curriculum objectives had a slightly lower, yet still favorable, mean score ($M = 4.01$, $SD = 0.88$). Overall, the total mean score ($M = 4.06$, $SD = 0.63$) reflects a strong and consistent commitment among teachers toward thoughtful and adaptive planning and execution in their instructional practices.

Table 15 Status of Teachers' Perceptions towards Planning and Execution

Statements	Mean	SD
I prepare lesson plans in advance and align them with curriculum objectives	4.01	0.88
I incorporate diverse learning needs into lesson planning	4.11	0.76
I adjust lesson plans based on student progress and feedback	4.06	0.77
Total	4.06	0.63

The qualitative findings in Figure 15 show a variety of approaches to the planning and execution of lessons by teachers, highlighting both structured methods and challenges.

P7LSET3 and P5LSMT1 regularly "make daily lesson plans and incorporate diverse student needs by considering learning style, assessment style, dividing into groups, noting abilities and needs, respecting cultural norms, and varying activities." They develop lesson plans based on

context, student level, interest, topic type, and student's level, collecting materials and assigning tasks based on objectives, and reviewing the plan if necessary.

P7LSET3, P5LSMT1- I regularly make daily lesson plans and incorporate diverse student needs by considering learning style, assessment style, dividing into groups, noting abilities and needs, respecting cultural norms, and varying activities. I develop lesson plans based on context, student level, interest, topic type, and student's level. Collects materials as per objectives and assigns tasks/activities based on objectives and materials. Review the plan if it's not applicable.

P2SMT1- Plan is always in the teacher's mind; a written lesson plan is not always necessary to prepare. I think about the lesson to be taught and manage materials sometimes myself, and sometimes I tell the students to come with materials (local ones that are available in their home). If there is something to be shown digitally, then I already manage my mobile.

**Planning and
execution of
teachers**

P6PT(FGD)- They have a common agreement that due to the heavy load of taking all 7 classes from morning to evening, they do not have time to prepare lesson plans. They also find problems in ICT and lack proper knowledge about PowerPoint presentations in the classroom.

P3SET3- I do not prepare a formal lesson plan, but I have planned in my mind and am always focusing on content and pedagogy. Addressing diversity is my concern because it's my passion to work for social justice.

P4SMT1- I develop only an outline of the lesson plan, including objectives, activities, and assessment process.

P4LSST5- I make daily lesson plans to incorporate diverse student needs, utilizing both Nepali and English languages in science as needed. For my daily teaching activities, I prepare lesson plans primarily through e-learning and other effective methods. I integrate digital technologies by creating slides for my daily lesson plans, which I then use with a laptop and smart TV

Figure 15 Planning and Execution of Teachers of Grade 5, 8, and 10

P2SMT1 expresses a more flexible approach, stating, "Plan is always in the teacher's mind; a written lesson plan is not always necessary to prepare. I think about the lesson to be taught and manage materials sometimes myself, and sometimes I tell the students to come with materials (local ones that are available in their home). If there is something to be shown digitally; then I already manage my mobile."

P6PT(FGD) identifies a significant challenge, noting, "They have a common agreement that due to the heavy load of taking all 7 classes from morning to evening, they do not have time to prepare lesson plans. They also find problems in ICT and lack proper knowledge about PowerPoint presentations in the classroom."

P3SET3 shares a personal philosophy: "I do not prepare a formal lesson plan, but I have planned in my mind and am always focusing on content and pedagogy. Addressing diversity is my concern because it's my passion to work for social justice."

P4SMT1 provides a more concise approach: "I develop only an outline of the lesson plan, including objectives, activities, and assessment process."

Finally, P4LSST5 describes a detailed and technologically integrated method: "I make daily lesson plans to incorporate diverse student needs, utilizing both Nepali and English languages in science as needed. For my daily teaching activities, I prepare lesson plans primarily through e-learning and other effective methods. I integrate digital technologies by creating slides for my daily lesson plans, which I then use with a laptop and smart TV."

P7HT1- We get information from the local government regarding policy implementation. Our School Improvement Plan covers educational, physical, and quality education, and it is goal-based. Resources are allocated through project support like Quality Project, Skill Up (German support), and local government support. We plan the operational calendar considering education focus, teaching days, holidays, and school days. There is a code of conduct for both students and teachers. We also have an information officer.

Planning and execution of Headteacher and Local Education Officer

P4HT2- The School Improvement Plan (SIP) in my school includes areas such as academic achievement improvement, physical infrastructure development, and student and parent awareness. We manage the operational calendar by scheduling winter breaks in Poush and Magh (mid-December to mid-February) due to the Himalayan region's climate, which can make it difficult to complete the curriculum if the school remains open. They adjust the academic calendar and make alternative plans to cover the curriculum. A teacher code of conduct has been developed and is posted on the wall, and it is also implemented to increase teacher and student regularity. ICT Lab, Math Lab, Science Lab, Library, and extra- and co-curricular activities are managed with some support from the Nepal government, and these facilities are currently sufficient

P3HT3- We have to prepare SIP because it is mandatory. SIP includes an action plan to increase the learning level of students as a whole, but there is not any plan developed based on the recommendation of NASA.

P3LEO1- We prepare a yearly calendar, and all programs are developed based on the calendar. But, we don't incorporate the recommendation of NASA in our plan directly; it may be included in federal-level planning.

P7LL01- Local education policies are based on national and provincial policies. PhD scholars and stakeholders are involved. Monthly head teacher meetings, subject-wise teacher groups, and expert groups facilitate planning. Policies at the local level are aligned with federal and provincial frameworks.

Figure 16 Headteachers and Local Education Officers Reflection on Planning and Execution

The Figure 16 presents a series of quotes from various educational stakeholders, highlighting how school planning, policy implementation, and resource management are carried out at the local level. Here's an interpretive paragraph incorporating direct quotes with respondent identifiers:

Headteachers and local education officers play a pivotal role in translating educational policies into actionable school plans.

"We get information from the local government regarding policy implementation... Our School Improvement Plan covers educational, physical, and quality education, and it is goal-based." (P7HT1)

This structured approach includes resource allocation through projects like Quality Project and Skill Up, and the establishment of operational calendars and codes of conduct.

The School Improvement Plan (SIP) in my school includes areas such as academic achievement improvement, physical infrastructure development, and student and parent awareness. We manage the operational calendar by scheduling winter breaks in Poush and Magh (mid-December to mid-February) due to the Himalayan region's climate, which can make it difficult to complete the curriculum if the school remains open. A teacher code of conduct has been developed and is posted on the wall, and it is also implemented to increase teacher and student regularity. ICT Lab, Math Lab, Science Lab, Library, and extra- and co-curricular activities are managed with some support from the Nepal government, and these facilities are currently sufficient(A head teacher from Mustang)_

Similarly, P4HT2 shares that their SIP focuses on “academic achievement improvement, physical infrastructure development, and student and parent awareness,” with adjustments made for regional climates, such as winter breaks in the Himalayan region. They also emphasize the implementation of a teacher code of conduct and the availability of ICT, Math, and Science labs supported by the government.

However, P3HT3 notes a limitation, stating, “We have to prepare SIP because it is mandatory... but there is not any plan developed based on recommendation of NASA.” This sentiment is echoed by P3LEO1, who adds, “We prepare a yearly calendar... but we don’t incorporate recommendation of NASA in our plan directly.” These responses suggest a gap between national assessments and local planning. On a broader scale, P7LLO1 outlines the alignment of local policies with higher-level frameworks: “Local education policies are based on national and provincial policies... Monthly head teacher meetings, subject-wise teacher groups, and expert groups facilitate planning.”

Planning and Execution from Province

The results of these assessments have influenced provincial education policies and planning by supporting the formulation of policies and programs aimed at enhancing educational quality. To address learning gaps identified in these assessments, we have implemented teacher training, educational quality improvement programs in schools, and skill education campaigns in community schools.” (Provincial Officer of Bagmati province)

Triangulated findings from both qualitative and quantitative data indicate that teachers generally hold positive perceptions toward lesson planning and execution, with high mean scores across key indicators. Quantitative results suggest strong attention to student diversity and adaptability in planning. Qualitative data confirm these practices, with many teachers preparing context-based, inclusive, and flexible plans. However, challenges persist, including

time constraints, ICT limitations, and lack of formal integration of NASA recommendations into school-level planning and policy execution at the local level.

Students' Engagement Practices

Students' engagement practices were also explored in this study using both qualitative and quantitative strategies.

Table 16 presents the status of teachers' perceptions regarding their practices to engage students in the classroom, based on responses from 180 teachers. The overall mean score of 4.27 (SD = 0.64) indicates a generally high level of agreement among teachers that they employ various engagement strategies. Among the individual items, the highest mean ($M = 4.34$, $SD = 0.81$) was reported for the use of interactive teaching methods, suggesting that this is the most commonly perceived engagement practice. This is closely followed by encouraging students to ask questions and express opinions ($M = 4.28$, $SD = 0.90$) and promoting collaborative learning through group activities ($M = 4.25$, $SD = 0.74$). The lowest, though still high, mean score was observed for classroom discussions encouraging student participation ($M = 4.24$, $SD = 0.95$) and the use of real-life examples ($M = 4.24$, $SD = 0.88$).

Table 16 Status of Teachers' Perceptions on Students' Engagement Practices (n=180)

Statements	Mean	SD
I use interactive teaching methods to engage students	4.34	0.81
My classroom discussions encourage student participation	4.24	0.95
I promote collaborative learning through group activities	4.25	0.74
I use real-life examples to help students relate to the subject matter	4.24	0.88
I encourage students to ask questions and express opinions	4.28	0.90
Total	4.27	0.64

The Figure 17 and 18 presents a rich collection of educator insights on how to foster active participation and learning among students. The responses reflect a blend of pedagogical strategies, classroom practices, and inclusive approaches tailored to diverse student needs.

P7SNT3 succinctly captures the essence of effective engagement: "Methods that increase student engagement are effective because they are lasting and impactful." This sets the tone for a deeper exploration of strategies shared by others. Both P4LSNT3 and P4SNT3 emphasize a student-centered approach: "The most effective teaching methods for student engagement are to understand the students' interest and nature, use teaching materials that help in measuring and evaluating their progress, and create an environment where they can learn by doing things themselves."

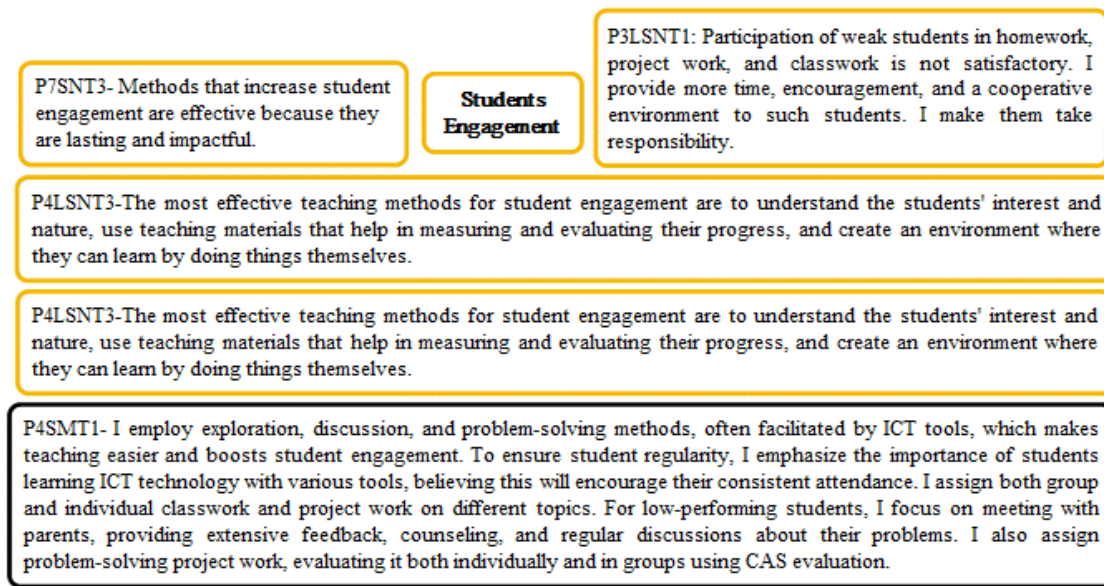


Figure 17 Students' Engagement Practice at Grade 5, 8, and 10 (a)

P4SNT1 elaborates on a multifaceted strategy: "I employ exploration, discussion, and problem-solving methods, often facilitated by ICT tools... I assign both group work and individual classwork and project work on different topics." This respondent also highlights targeted support for struggling students through "feedback, counseling, and regular discussions."

In the realm of science education, P5LSST2 shares a hands-on approach: "I ask questions frequently... ask them to prepare models, charts, assign project work in groups, collect samples, and make field trips." These activities aim to deepen engagement through experiential learning.

P2PET1 focuses on language development and inclusivity: "I assign project work and practice the discussion method... conduct practice sessions where I ensure participation of all students." Meanwhile, P3LSNT1 addresses the challenge of engaging weaker students: "Participation... is not satisfactory. I provide more time, encouragement, and a cooperative environment."

P5MST3 highlights the role of collaboration and democratic learning: "Culture of collaboration integrates democratic knowledge... encourages collaboration with additional techniques for students with limited abilities." Lastly, P7HT1 underscores the importance of a nurturing environment: "Teachers encouraged to identify student problems... child-friendly approaches used to motivate students."

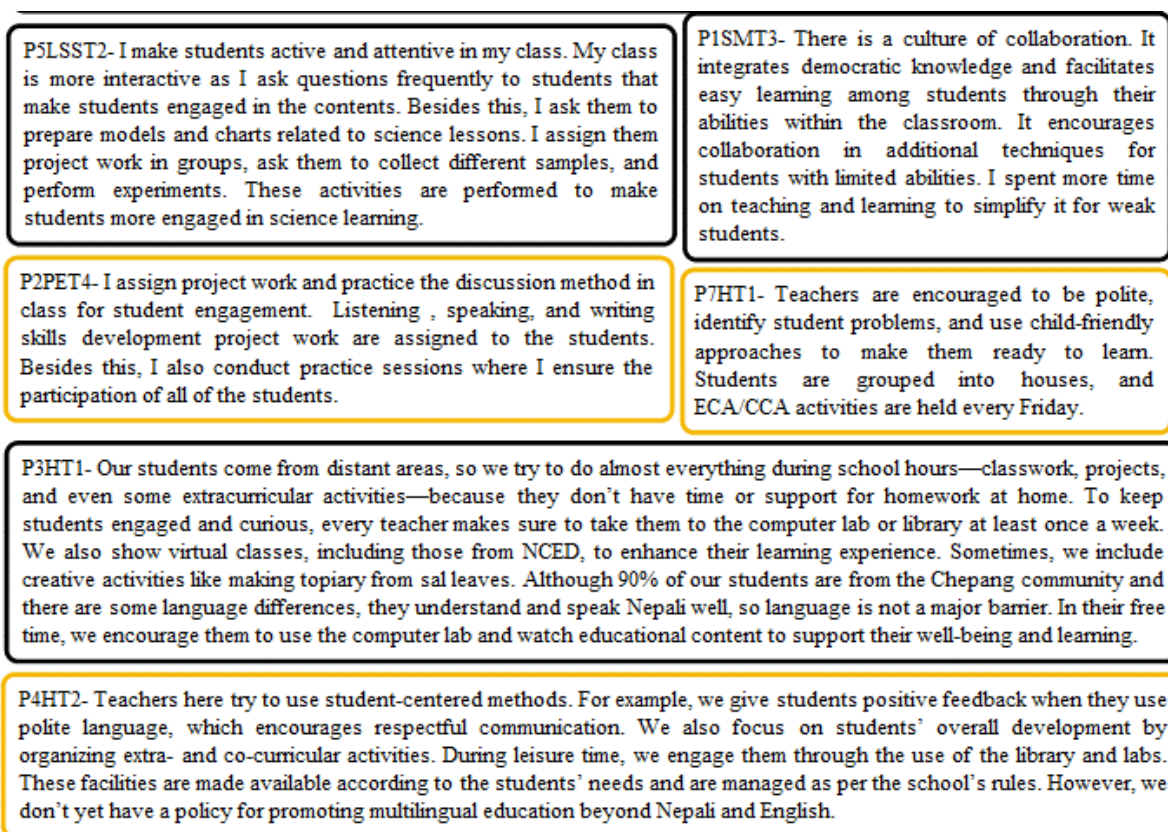


Figure 18 Students' Engagement Practice at Grade 5, 8, and 10 (b)

The triangulation of qualitative and quantitative findings shows that teachers actively use a variety of strategies to engage students in learning. Quantitative data reflect a high level of agreement among teachers on using interactive methods, encouraging student questions, and promoting group work. These align with qualitative insights, where educators describe using hands-on activities, discussions, ICT tools, and student-centered approaches. Teachers also emphasize inclusivity, emotional support, and adapting methods to student needs. Together, these findings highlight a strong commitment to fostering active and meaningful student participation.

Teaching Method

Table 17 illustrates teachers' perceptions of their teaching methods, based on data from 180 respondents. The overall mean score of 4.06 (SD = 0.57) reflects a generally positive perception of employing diverse and student-centered teaching strategies. Among the individual items, the highest mean score was for employing student-centered teaching approaches (M = 4.23, SD = 0.86), indicating strong agreement with this practice. This is followed by the use of varied instructional approaches, such as visual and auditory methods (M = 4.07, SD = 0.76), and adapting teaching methods to meet students' needs (M = 4.03, SD = 0.81). Slightly lower but still favorable mean scores were observed for incorporating inquiry-

based and problem-solving strategies ($M = 4.00$, $SD = 0.85$) and project-based strategies ($M = 3.97$, $SD = 0.73$). These results suggest that while teachers generally perceive themselves as using a range of effective teaching methods, there may be slightly less emphasis on inquiry-based and project-based approaches compared to more traditional student-centered strategies.

Table 17 Status of Teachers' Perceptions on Teaching Method (n=180)

Statements	Mean	SD
I employ student-centered teaching approaches	4.23	0.86
I incorporate inquiry-based and problem-solving strategies in lessons	4.00	0.85
I adapt my teaching methods to meet student needs	4.03	0.81
I use a variety of instructional approaches (visual, auditory)	4.07	0.76
I incorporate project-based strategies in lessons	3.97	0.73
Total	4.06	0.57

Figure 19 titled "Teaching Method" presents a diverse array of instructional strategies shared by educators, each tailored to enhance student understanding and engagement. The quotes reflect a blend of traditional, interactive, and technology-supported approaches.

P7SNT3 emphasizes collaborative learning: "Teaching is done through group work and discussions, especially for students who do not understand." This method fosters peer support and deeper comprehension. Similarly, P3PS1 advocates for hands-on learning: "Practical and discussion methods are appropriate... children's understanding should also be good." These approaches prioritize active participation and real-world relevance.

P7SNT3- Teaching is done through group work and discussions, especially for students who do not understand..	Teaching Method	P3PS1- Practical and discussion methods are appropriate. For now, this method is more appropriate compared to other methods; children's understanding should also be good
P7FGD1- I use flash cards and charts to support learning. Clapping or giving prizes works well for feedback. Locally available materials and smart boards are used. Classwork and homework help with assessment.		
P5LSST1: I apply exploration, discussion, and problem-solving methods, primarily using ICT tools, as these make teaching more accessible and effective.		
P4LSNT2- I provide special attention, support, and extra time to weak students. We try to involve them in activities and provide more affective feedback, like "Good job," "Thank you," etc.		
P1LNT4- Mostly, I use the discussion method because in this method, the student answers while questioning.		
P2HT2- Our teachers focus on student-centered methods like encouraging polite language, involving students in extra activities, and making good use of labs and libraries during leisure time, though we still follow only Nepali and English for instruction.		P7FGD1- I use flash cards and charts to support learning. Clapping or giving prizes works well for feedback. Locally available materials and smart boards are used. Classwork and homework help with assessment.

Figure 19 Teaching methods applied at Grade 5, 8, and 10

P7FGD1 highlights the use of visual aids and positive reinforcement: "I use flash cards and charts to support learning. Clapping or giving prizes works well for feedback... Classwork and homework help with assessment." This quote, repeated in the figure, underscores the value of locally available materials and smart boards in modern classrooms.

"To address regional disparities in Sudurpaschim, additional support is provided by the federal government, with special priority given to special equalization grants. Targeted programs for these regions include physical infrastructure development, operating model schools, providing additional support to schools, remedial classes, teacher incentives, and physical construction. Student achievement tests based on the 720 model and school performance tests are conducted, and additional services and facilities are provided based on the results, with performance agreements in place. **P7PO**"

Technology plays a central role in P5LSST1's teaching: "I apply exploration, discussion, and problem-solving methods, primarily using ICT tools, as these make teaching more accessible and effective." This reflects a shift toward digital integration in pedagogy. Supporting struggling students is a key concern for P4LSNT2, who shares: "I provide special attention, support, and extra time to weak students... provide more affective feedback, like 'Good job,' 'Thank you,' etc." This nurturing approach helps build student confidence and motivation.

P1LNT4 prefers the discussion method for its interactive nature: "Mostly, I use the discussion method because in this method, the student answers while questioning." This technique encourages critical thinking and dialogue. From a leadership perspective, P2HT2 describes a student-centered philosophy: "Our teachers focus on student-centered methods like encouraging polite language, involving students in extra activities, and making good use of labs and libraries during leisure time." Despite these efforts, instruction remains limited to Nepali and English.

The triangulated findings reveal that teachers generally have a positive perception of using diverse, student-centered teaching methods. Quantitative data show frequent use of varied strategies, especially student-centered and visual-auditory methods, with slightly less emphasis on inquiry- and project-based approaches. Qualitative data support this, highlighting collaborative learning, hands-on activities, visual aids, and technology integration. Teachers also emphasize personalized support and feedback for weaker students. Together, these findings show that while a variety of methods are used, there is room to strengthen inquiry-based and project-based learning practices.

Resources Allocation and Utilization

Table 18 presents teachers' perceptions regarding the allocation and utilization of teaching and learning resources, based on responses from 180 participants. The overall mean score of 3.67 (SD = 0.68) suggests a moderate level of agreement, indicating that while teachers generally use available resources, there may be limitations in their adequacy or accessibility. The highest mean scores were observed for the frequent use of teaching materials (M = 3.79, SD = 0.86) and the use of visual aids and manipulatives (M = 3.79, SD = 0.82), reflecting consistent efforts by teachers to enhance instruction through tangible resources. However, lower mean scores were reported for the integration of digital resources and technology (M = 3.61, SD = 0.93), access to relevant textbooks (M = 3.66, SD = 0.99), and especially for the adequacy of school-provided resources (M = 3.51, SD = 1.08), indicating concerns about the sufficiency and quality of available materials.

Table 18 Status of Teachers' Perceptions on Resource Allocation and Utilization (n=180)

Statements	Mean	SD
I frequently use teaching materials in my instruction	3.79	0.86
I integrate digital resources and technology in my teaching	3.61	0.93
I incorporate visual aids and manipulatives to support learning	3.79	0.82
Students have access to relevant textbooks and reference materials	3.66	0.99
My school provides adequate teaching-learning resources	3.51	1.08
Total	3.67	0.68

The Figure 20 presents a range of perspectives from educators on how they manage and make use of available resources in their schools. The responses reflect both the challenges of limited materials and the creative strategies employed to maximize student learning.

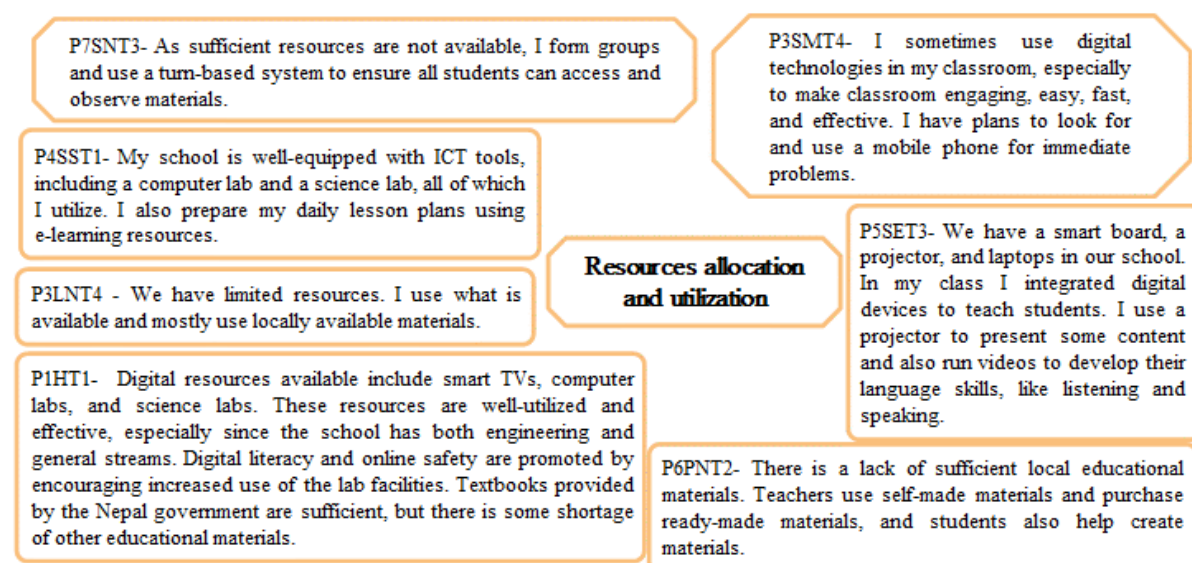


Figure 20 Practice of Resources Allocation and Utilization

P7SNT3 describes a practical workaround for resource scarcity: "As sufficient resources are not available, I form groups and use a turn-based system to ensure all students can access and observe materials." This method ensures equitable access despite limitations. In contrast, P4SST1 shares a more resource-rich environment: "My school is well-equipped with ICT tools, including a computer lab and a science lab... I prepare my daily lesson plans using e-learning resources."

P3LNT4 adapts to constraints by relying on local materials: "We have limited resources. I use what is available and mostly use locally available materials." Similarly, P6PNT2 notes, "There is lack of sufficient local educational materials. Teachers use self-made materials and purchase ready-made materials, and students also help create materials." These responses highlight the importance of resourcefulness and community involvement.

P1HT1 provides a broader institutional view: "Digital resources available include smart TVs, computer labs, and science labs... Digital literacy and online safety are promoted by encouraging increased use of the lab facilities." They also mention that while textbooks are sufficient, other materials are lacking.

P2LMT3 simply states, "Yes, school has few learning resources such as projectors," indicating minimal but functional support. P3SMT4 adds a personal touch: "I sometimes use digital technologies... I have plans to look for and use a mobile phone for immediate problems," showing initiative in enhancing classroom engagement.

Finally, P5SET3 integrates technology actively: "We have a smart board, a projector, and laptops... I use a projector to present some content and also run videos to develop their language skills like listening and speaking." This reflects a deliberate effort to use digital tools for targeted skill development.

"Key investment priorities for school education in the province include schools, higher education institutions, physical infrastructure development, and child

"Our key investment priorities for school education include educational quality improvement programs, teacher training, infrastructure development, and compulsory and free education programs. We make specific investments in teacher training, infrastructure, and digital learning. However, there are no specific criteria for budget allocation; it is determined based on government priorities, and currently, there are no specific measures in place to ensure equitable distribution of resources across different municipalities." -P3PO

development campuses. Budget allocations are determined based on the first five-year plan,

demand, and operational directives, which also include plans for school physical infrastructure. Furthermore, specific investments are made in teacher training, infrastructure, and digital learning. To ensure equitable distribution of resources across different municipalities, measures include allocation based on population, geography, and demand."(P7PO)

The qualitative findings show a various scene of resource accessibility and use in schools, ranging from well-equipped environments leveraging ICT tools and e-learning to those with limited resources where teachers adopt creative workarounds like group work and turn-based systems or rely on locally available and self-made materials. While provincial officers prioritize investments in educational quality, teacher training, infrastructure, and digital learning, a notable challenge remains the lack of specific criteria for equitable budget allocation and resource distribution across municipalities.

The triangulated findings reveal a mixed picture of resource allocation and utilization in schools. Quantitative data show moderate use of teaching resources, especially physical materials and visual aids, while digital tools and overall adequacy remain limited. Qualitative responses support this, highlighting disparities in access. Some schools are well-equipped with ICT facilities, while others depend on local or self-made materials. Teachers employ creative strategies like group work and student-made resources to cope with shortages. Provincial priorities target infrastructure and digital learning, yet equitable distribution remains a key challenge.

Assessment Practices

Table 19 summarizes teachers' perceptions of their assessment practices, based on responses from 180 participants. The overall mean score of 4.07 (SD = 0.56) indicates a generally positive perception, suggesting that teachers regularly engage in a range of assessment-related activities to support student learning. The highest-rated practice is checking homework and providing feedback (M = 4.26, SD = 0.83), followed closely by offering constructive feedback (M = 4.18, SD = 0.79) and giving individual attention to struggling students (M = 4.11, SD = 0.78). These findings reflect a strong emphasis on continuous monitoring and personalized support. Teachers also reported using a variety of assessment methods (M = 4.04, SD = 0.76) and aligning assessments with curriculum standards (M = 4.15, SD = 0.68), indicating an effort to maintain relevance and diversity in evaluation. However, relatively lower mean scores were observed for the use of alternative assessments such as projects and portfolios (M = 3.90, SD = 0.84) and for structured planning of tests and result

analysis ($M = 3.88$, $SD = 0.90$), suggesting areas where assessment practices could be strengthened.

Table 19 Status of Teachers' Perceptions on Assessment Practices (n=180)

Statements	Mean	SD
I check homework regularly and provide feedback	4.26	0.83
I provide constructive feedback that helps students improve	4.18	0.79
I give individual attention to students struggling with concepts	4.11	0.78
I use a variety of assessment methods (formative, summative, peer assessment).	4.04	0.76
My assessments align with learning objectives and curriculum standards	4.15	0.68
I use alternative assessments (projects, portfolios) to evaluate students	3.90	0.84
I modify my teaching strategies based on students' achievement	4.02	0.77
I have specific planning on Unit/lesson test, trimester test, annual test, and result analysis.	3.88	0.90
Total	4.07	0.56

Figure 21 titled "Assessment Practices" presents a comprehensive overview of how educators assess student learning, manage classroom challenges, and utilize feedback mechanisms. The quotes from various respondents reflect a blend of formative and summative evaluation strategies, tailored to diverse classroom contexts.

P7SNT3 emphasizes consistent monitoring and digital record-keeping: "I regularly assign homework, observe students in class, and evaluate their learning. I also maintain their academic records electronically." This approach integrates traditional assessment with modern tools for tracking progress.

P2SMT1 highlights the challenge of student irregularity in large classes: "We have 30–40 students per class... Most students do their work, but irregularity is a problem. We give feedback based on their family background and try to motivate them, though some remain unresponsive." This reflects a personalized approach to feedback, though not always effective. P5LNT1 focuses on formative evaluation: "Student's performance is low; however, I use formative evaluation and maintain the portfolio of the students." Portfolios serve as a tool for tracking individual growth over time.

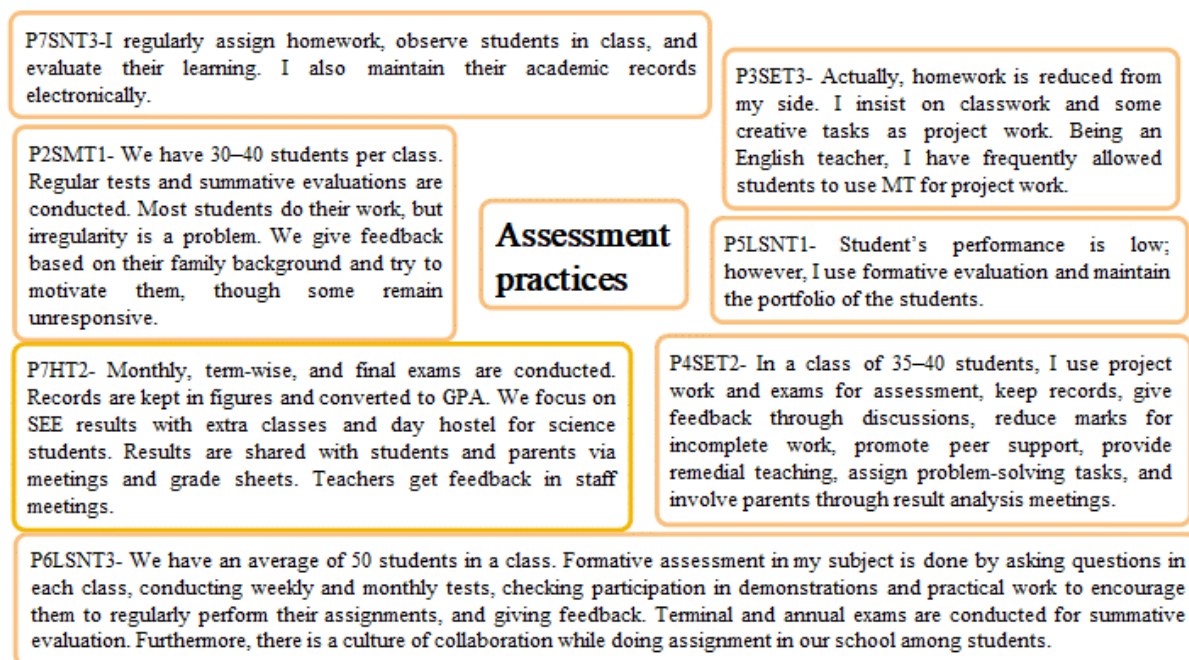


Figure 21 Details of Assessment Practices at Grade 5, 8, and 10

P4SET2 outlines a multifaceted strategy: "I use project work and exams for assessment, keep records, give feedback through discussions, reduce marks for incomplete work, promote peer support, provide remedial teaching, assign problem-solving tasks, and involve parents through result analysis meetings." This comprehensive method supports both academic and behavioral development.

P6LSNT3 describes a robust assessment culture in a large classroom setting: "Formative assessment... is done by asking questions in each class, conducting weekly and monthly tests, checking participation in demonstrations and practical work... Terminal and annual exams are conducted for summative evaluation." They also note a "culture of collaboration" among students.

P7HT2 provides an institutional perspective: "Monthly, term-wise, and final exams are conducted. Records are kept in figures converted to GPA... Results are shared with student parents via meetings and grade sheets. Teachers get feedback in staff meetings." This reflects a structured and data-driven approach to assessment.

Finally, P3SET3, an English teacher, shares a creative twist: "Homework is reduced from my side. I insist on classwork and some creative tasks as project work... I have frequently allowed students to use MT for project work." This encourages innovation and language development through project-based learning.

The assessment practices among teachers include regular homework, classroom observations, and digital record-keeping alongside formal exams and project work. While some

teachers use formative evaluation, portfolios, and personalized feedback to address low performance and irregularity, others creatively integrate technology and allow local language use for project-based learning to foster engagement and skill development.

The findings show that teachers generally hold positive views toward assessment practices, engaging in regular homework checks, feedback, and personalized support. Quantitative results highlight frequent use of traditional and formative assessments aligned with curriculum standards. Qualitative insights complement this, revealing diverse strategies like digital record-keeping, project work, peer support, and formative evaluation tailored to classroom challenges. However, both data types indicate gaps in the use of alternative assessments and structured planning, suggesting room for strengthening assessment diversity and systematic implementation.

Bullying and Mitigating Strategies

Table 10 presents teachers' perceptions regarding bullying prevention and mediation in schools, based on responses from 180 participants. The overall mean score of 3.72 (SD = 0.77) indicates a moderately positive perception, suggesting that while efforts to address bullying are in place, there are areas that require improvement. The highest mean score was for fostering positive and supportive peer relationships ($M = 4.03$, $SD = 0.93$), indicating that teachers actively promote a respectful classroom environment. Teachers also reported relatively high engagement in intervening during bullying incidents ($M = 3.99$, $SD = 1.08$), showing their willingness to act when issues arise. However, lower mean scores were observed for students' feelings of safety from bullying ($M = 3.68$, $SD = 1.04$), the presence of clear school policies ($M = 3.42$, $SD = 1.09$), and mechanisms for reporting bullying ($M = 3.46$, $SD = 1.07$). These findings suggest that while individual teachers may take proactive steps, institutional supports such as policies and reporting systems are perceived as less robust.

Table 20 Status of Teachers' Perceptions on Bullying and Mitigation (n=180)

Statements	Mean	SD
My students feel safe from bullying in school	3.68	1.04
I intervene when bullying incidents occur in my classroom or other time	3.99	1.08
My school has clear policies to prevent bullying	3.42	1.09
There are mechanisms for students to report bullying	3.46	1.07
I foster positive and supportive peer relationships among students	4.03	0.93
Total	3.72	0.77

The Figure 22 titled "Bullying and Mediation in Schools" presents a range of educator perspectives on how bullying both physical and digital is observed, addressed, and prevented in school environments. The responses reflect varying levels of awareness, intervention strategies, and institutional support.

P2LSNT3 shares a direct and personal approach to handling teasing: "I have noticed boys are teasing girls. I consult with them and suggest not to do this again." This reflects a low-level intervention aimed at immediate behavioural correction. In contrast, P7SET3 describes a more structured response: "Some students bully others; I give them moral instruction and explain the effects. If that doesn't work, they are punished sometimes positively, sometimes negatively." This shows a layered approach combining counselling and disciplinary action.

P7SMT3 reports no bullying incidents and notes a lack of awareness programs: "There is no bullying in the classroom or school, and no awareness programs on bullying or cyberbullying have been conducted." This may suggest either a genuinely safe environment or underreporting. On the other hand, P4S4 acknowledges minor bullying and proactive measures: "I have observed very few instances of bullying... My school has conducted awareness programs on bullying, including cyberbullying, with the support of the district police office and other stakeholders."

P6SET3 brings attention to digital bullying: "Sometimes I have heard it, especially about digital bullying on Facebook... We inform parents and sometimes involve the police. The district police come from time to time and conduct classes on cyberbullying." This highlights a collaborative approach involving school leadership and law enforcement.

P5SMT2 outlines a preventive and responsive strategy: "We consult parents and take necessary steps... We warn students who are involved in such bullying and motivate others to complain if any student is suffering." This encourages a culture of accountability and openness. P3LNT3 notes that while bullying hasn't been observed, policies are in place: "If teasing occurs, I control it by putting forward policies and rules. Schools conduct awareness programs on bullying, including cyberbullying from time to time." This reflects a preventive stance. Lastly, P4HT1 discusses broader student support: "While there are no specific bullying reports, student awareness programs are conducted... Student perceptions about the school environment are collected through direct feedback placed in a suggestion box." This shows an effort to maintain a responsive and inclusive school climate.

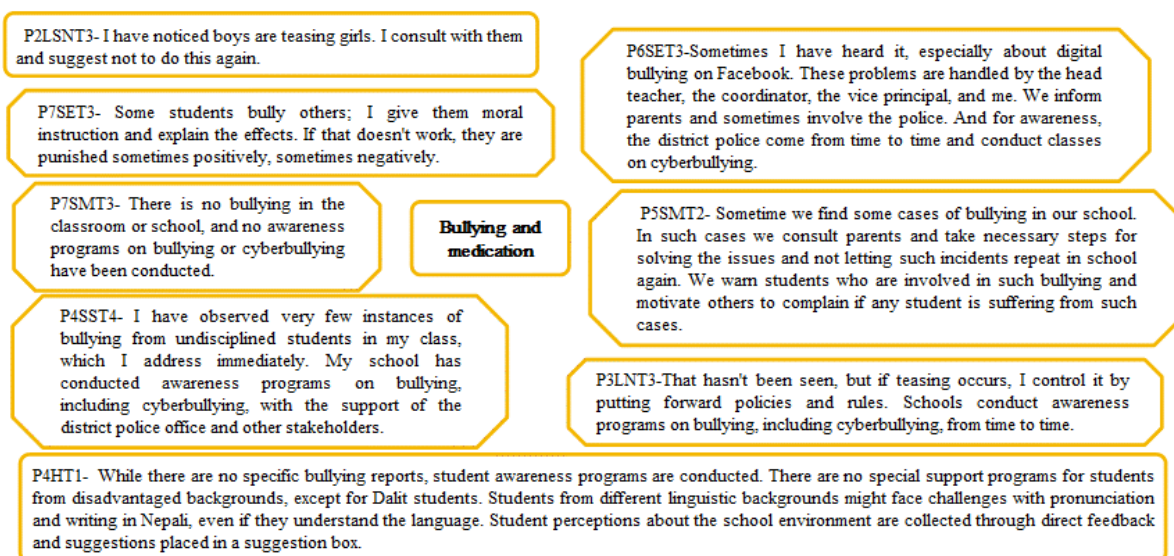


Figure 22 Bullying and Mitigating Practice at Basic and Secondary Level

The teachers showed awareness in response to bullying activities. The actions of teachers involve individual counselling, strict measures, and parental engagement. Moreover, school's experiences minimum bullying in their schools. Schools are emphasizing preventive measures handling both physical and digital bullying through collaborative efforts and student-centred feedback mechanisms.

The findings reveal that teachers are generally proactive in addressing bullying through counselling, discipline, and involving parents. They promote respectful peer relationships and often intervene during incidents. Qualitative responses show varying levels of awareness and strategies, from informal talks to structured programs involving police and feedback systems. However, gaps exist in institutional support such as clear policies, reporting mechanisms, and consistent awareness programs. Together, these findings suggest that while teacher efforts are strong, schools need more systemic support to effectively prevent and manage bullying.

Teacher Research Practice

Table 21 shows that the total mean score of 3.88 (SD = 0.62) reflects a generally positive perception, indicating that teachers recognize the value of research in enhancing their instructional practices. The highest mean score was reported for implementing research findings in instruction (M = 3.97, SD = 0.64), followed closely by using research to address learning gaps (M = 3.95, SD = 0.79) and engaging in research to improve teaching strategies (M = 3.92, SD = 0.79). These results suggest that teachers are actively applying research insights to refine their classroom practices. Collaboration with colleagues on research projects also received a relatively high mean (M = 3.84, SD = 0.92), indicating a fair level of professional cooperation. However, the lowest mean was for the perception that schools

encourage action research ($M = 3.72$, $SD = 0.90$), suggesting that institutional support for research may be limited.

Table 21 Status of Teachers' Perceptions on Research Practice ($n=180$)

Statements	Mean	SD
I engage in research to improve my teaching strategies	3.92	0.79
I implement research findings in my instructional practices	3.97	0.64
My school encourages teachers to conduct action research	3.72	0.90
I collaborate with other teachers on research projects	3.84	0.92
I use research to address learning gaps in my classroom	3.95	0.79
Total	3.88	0.62

Teachers research initiatives at school level are detailly presented in Figure 23. The information from teachers reflects the teachers' way of engaging in action research to identify and solve classroom challenges. Most of the respondents highlight the importance of observation, student feedback, and performance analysis tools for identifying action research issues. According to P7LSMT1, "Yes, I identify classroom problems through observation and conduct action research, like on student irregularity and difficulties in mathematics..." This highlights a proactive approach to improving teaching by involving stakeholders such as parents.

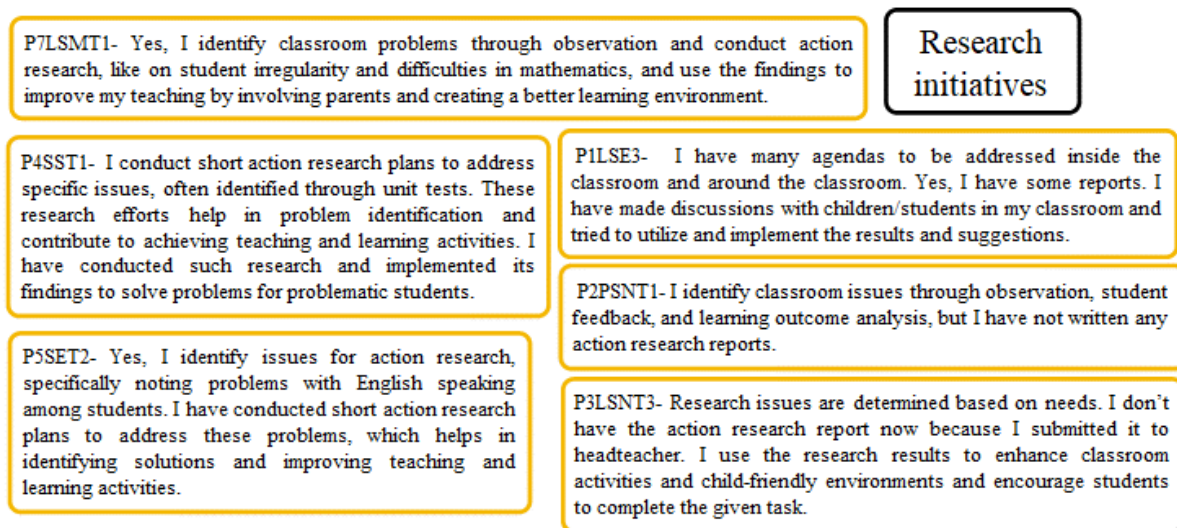


Figure 23 Research Initiatives at School Level

The other respondent P4SST1 added, "I conduct short action research plans to address specific issues, often identified through unit tests," indicating a structured method of problem-solving that is directly associated with reform in teaching strategies. Moreover, for the respondent P5SET2 problem is associated with language barriers and state, "I identify issues

for action research, specifically noting problems with English speaking among students," showing how subject-specific challenges are tackled through targeted research.

Some respondents also mention the implementation and utilization of research findings. For example, P1LSE3 remarks, "I have made discussions with children/students in my classroom and tried to utilize and implement the results and suggestions," suggesting a participatory and reflective approach. However, not all respondents have formal documentation of their research. P2PSNT1 admits, "I identify classroom issues... but I have not written any action research reports," while P3LSNT3 explains, "I don't have the action research report now because I submitted it to headteacher," indicating that while research is conducted, formal reporting may be inconsistent.

The teachers' reflections demonstrate their commitments on action research for addressing classroom challenges. For this they adopt methods such as observation, assessments, and student feedback to identify and to respond to specific issues. While many teachers actively implement and reflect on their findings to improve teaching practices, the inconsistency in formal documentation suggests a need for more structured reporting and institutional support.

The findings show that teachers highly value research for improving teaching practices and addressing learning gaps. They engage in action research using tools like observation, assessments, and student feedback to solve classroom problems. Teachers often implement research findings and collaborate with peers, reflecting a proactive and reflective approach. However, while qualitative data supports their involvement, the lack of consistent documentation and limited institutional encouragement reveal a gap. Strengthening school-level support and structured reporting could enhance the impact of these research initiatives.

Medium of Instruction

Table 22 shows that the total mean score of 3.69 (SD = 0.84) indicates a moderately positive perception, suggesting that while teachers make efforts to address linguistic diversity, there is room for improvement. The highest mean score was for providing language support to students who struggle with instruction (M = 3.80, SD = 0.97), indicating a strong commitment to helping learners overcome language-related challenges. This is closely followed by managing bilingual or multilingual instruction effectively (M = 3.77, SD = 0.96), reflecting teachers' adaptability in linguistically diverse classrooms. However, the lowest mean score was reported for the use of local language in instructional activities (M = 3.50, SD = 1.08), suggesting that while some teachers incorporate local languages, it is not yet a widely or consistently practiced strategy.

Table 22 Teachers' Perceptions regarding Medium of Instruction (n=180)

Statements	Mean	SD
I use local language in my instructional activities	3.50	1.08
I provide language support to students who struggle with instruction	3.80	0.97
I effectively manage bilingual/multilingual instruction	3.77	0.96
Total	3.69	0.84

The Figure 24 shows how teachers manage classrooms with students who speak different languages. Many teachers say they use the students' mother tongues or local languages to help them understand lessons better. For example, P7SNT3 says, "Students speak multiple languages, so I support them by teaching in their own languages." Similarly, P5LSMT1 explains that while Nepali is mainly used, they also teach in local languages when needed: "We are able to teach in local languages as needed... students are generally fluent in Nepali, so that helps." Some teachers mix languages depending on the subject. P4SST3 says, "I primarily use English... but also explain concepts in Nepali," especially for science. P6LSET1 uses both verbal and non-verbal methods: "I use their mother tongue and non-verbal communication... sometimes I use Nepali too." Others, like P2PSET2, try to use students' languages as much as possible: "Students generally speak Hindi, Maithili, and Nepali... I facilitate them using their mother tongue." However, some teachers stick to Nepali, like P3SM3, who says, "I have been using Nepali language for facilitation." In some cases, teachers teach in Maithili when needed, as P2HT mentions: "We teach them in Maithili if needed." Finally, P1EST3 uses English and Nepali but admits a limitation: "I don't understand the local language (Limbu)."

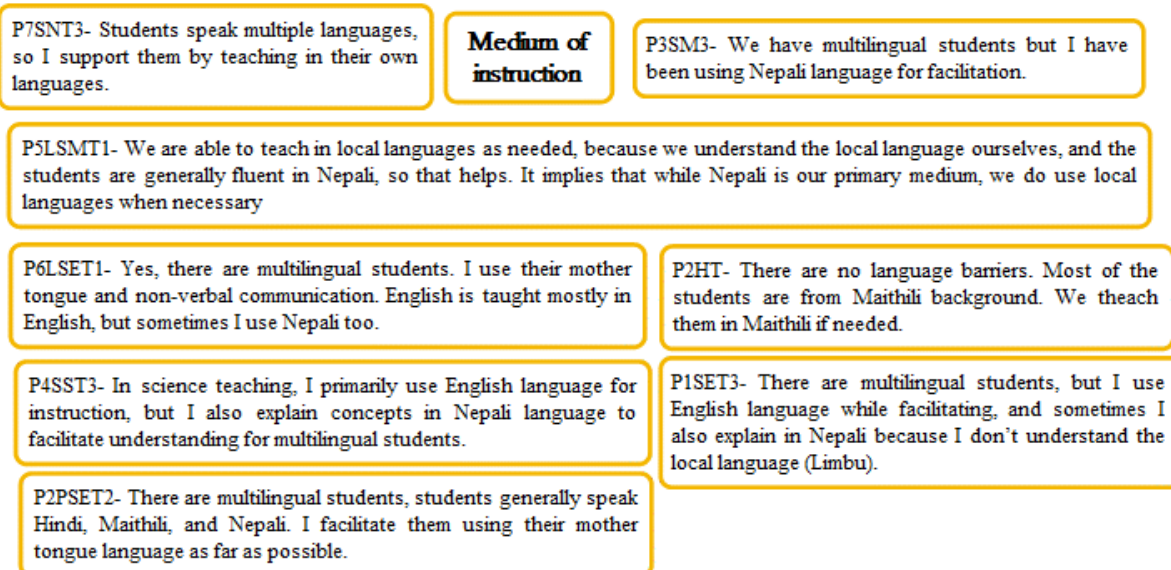


Figure 24 Medium of Instruction at Grade 5, 8, and 10

The responses reveal that teachers in multilingual classrooms adopt flexible language strategies, often incorporating students' mother tongues alongside Nepali to enhance comprehension and engagement. While many educators adapt their teaching to students' linguistic needs, some face limitations due to unfamiliarity with local languages, highlighting both the efforts and challenges in fostering inclusive learning environments.

The triangulation of qualitative and quantitative findings shows that teachers generally have a moderately positive perception of managing multilingual classrooms. Quantitative data suggest that while language support and bilingual instruction are well-practiced, the use of local languages remains limited. Qualitative responses support this by showing that many teachers flexibly use students' mother tongues or Nepali to aid understanding. However, some rely only on Nepali or face challenges with unfamiliar local languages, indicating a need for more consistent and inclusive language practices.

Result Analysis and Student Feedback

Table 23 shows that the overall mean score of 4.06 (SD = 0.70) indicates a strong emphasis on using assessment outcomes to support student learning. Teachers reported consistently high engagement in providing feedback based on test performance (M = 4.12, SD = 0.79) and discussing results with students to enhance their understanding (M = 4.11, SD = 0.83). While slightly lower, the mean score for school-level result analysis (M = 3.96, SD = 0.95) still reflects a positive trend, suggesting that schools moderately support systematic data-driven instructional improvement.

Table 23 Status of Teachers' Perceptions on Result Analysis and Student Feedback (n=180)

Statements	Mean	SD
I give feedback to the students based on their achievement in different tests	4.12	0.79
I discuss assessment results with students to support their learning	4.11	0.83
My school conducts result analysis at different levels (class, subject, school)	3.96	0.95
Total	4.06	0.70

The Figure 25 illustrates how different educators approach result analysis and student feedback in their schools. Many respondents emphasize the importance of analyzing student performance and sharing feedback with various stakeholders. For example, P4SST1 explains, "After checking tests, I provide immediate feedback, counseling, and interaction with students... I focus on helping them improve their scripts," showing a detailed and student-centered approach. Similarly, P7HT2 mentions, "Result analysis is focused on GPA

improvement... feedback is shared with students, teachers, and parents through meetings," indicating a structured strategy for academic enhancement. P4HT adds that results are used to improve teaching and adopt best practices: "We also adopt extra classes from model schools and collaborate with all government levels."

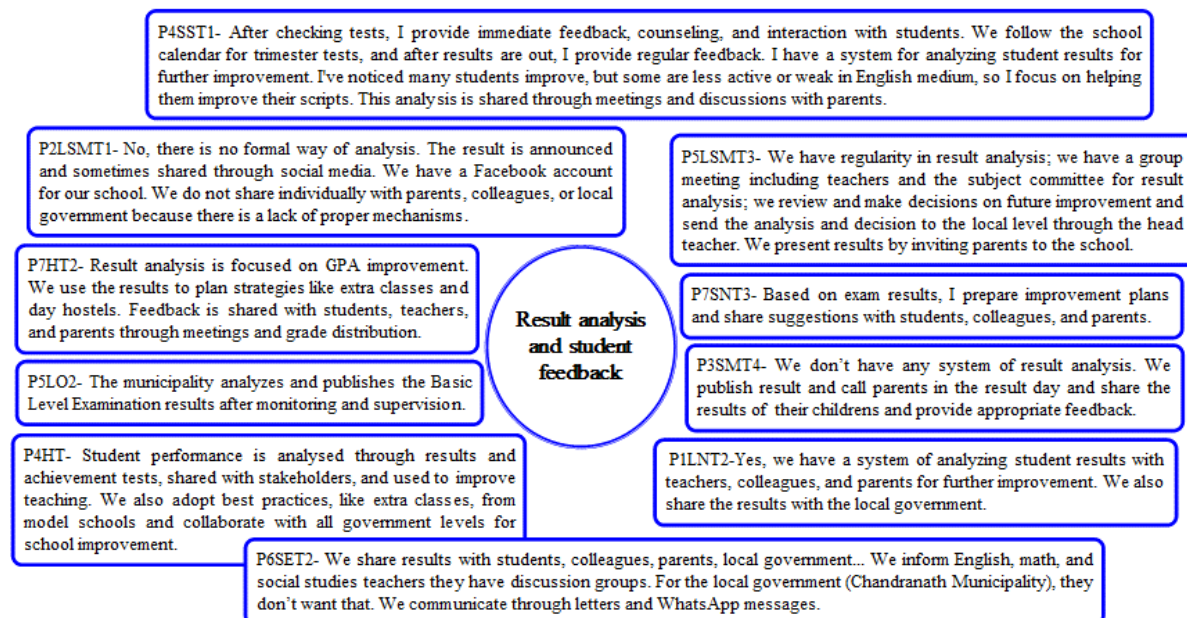


Figure 25 *Result Analysis and Students Feedback Practice at Grade 5, 8, and 10*

Some respondents highlight collaborative efforts. PSLMT3 says, "We have a group meeting including teachers and the subject committee... and send the analysis decision to the local level," while PILNT8 notes, "We have a system of analyzing student results with teachers, colleagues, and parents... and share the results with the local government." These responses show a multi-level engagement in result analysis.

Others focus on improvement planning. P7SNT3 shares, "Based on exam results, I prepare improvement plans and share suggestions with students, colleagues, and parents," showing a proactive approach. However, not all schools have formal systems. P2LSMT1 admits, "There is no formal way of analysis... we do not share individually with parents or colleagues," and P5SMT4 says, "We don't have any system of result analysis... we publish results and call parents on result day." These responses reflect gaps in structured feedback mechanisms.

Finally, P5LO2 points out that result analysis is sometimes handled externally: "The municipality analyzes and publishes the Basic Level Examination results after monitoring and supervision." P6SET2 briefly mentions, "We share results with students," indicating a basic level of feedback.

The qualitative findings reveal that teachers actively engage in student-centered and collaborative result analysis to enhance learning outcomes. However, there is variation in the structure and depth of feedback systems across schools. Some institutions demonstrate proactive and multi-stakeholder approaches, while others lack formal mechanisms, highlighting inconsistencies in assessment practices and the need for more consistent policies.

The triangulation of qualitative and quantitative findings shows that most schools and teachers actively use assessment outcomes to support student learning through feedback and result analysis. Teachers often engage in discussions with students and stakeholders to improve understanding and performance. Qualitative responses highlight collaborative practices and improvement planning in some schools. However, both data types reveal inconsistencies—while many schools follow structured approaches, others lack formal systems. This suggests a need for more consistent and institutionalized feedback and result analysis practices across schools.

Professional Development Opportunities

Table 24 presents teachers' perceptions of professional development opportunities, with an overall mean score of 3.50 (SD = 0.83), indicating a moderate level of agreement. Teachers perceive training as beneficial for improving teaching efficacy (M = 4.02, SD = 0.87), suggesting that when opportunities are available, they are effective. However, lower mean scores were reported for regular participation in professional development (M = 3.37), subject-related training (M = 3.34), and access to mentoring programs (M = 3.30), pointing to limited institutional support.

Table 24 Status of Teachers' Perceptions on Professional Development Opportunities
(n=180)

Statements	Mean	SD
I regularly participate in professional development programs	3.37	1.07
I receive training on innovative teaching strategies	3.49	1.05
My school provides mentoring programs to support my development	3.30	1.13
Training improves my teaching efficacy	4.02	0.87
I receive training to overcome subject-related teaching difficulties	3.34	1.05
Total	3.50	0.83

The Figure 26 highlights various teachers' perspectives on professional development opportunities, showing a shared concern about the insufficiency and outdated nature of current training programs. Many respondents acknowledge having participated in professional

development activities but feel they are not meeting current educational demands. For instance, P7SNT3 states, "Though I have participated in professional development programs, they are not sufficient. The content should be updated to reflect social and contemporary changes," pointing to a need for more relevant and timely training.

Similarly, P4SST3 reflects on the benefits and limitations of past programs: "I have participated in several professional development programs... which have positively changed my skills... However, I find these programs insufficient, as I require updated training in ICT skills, AI, teaching material preparation, and other skills." This sentiment is echoed by P6SNT3, who says, "Training helped me to improve my classroom performance... However, the recent program... is not enough for teachers; teachers need refresher training regularly." Some respondents emphasize the importance of teacher-driven and need-based training. P2SET3 shares, "Yes, I participated in TPD trainings and NELTA programs. The contents of the training were determined by the teacher," suggesting a more personalized approach. P3PET4 adds, "There should be TPD training frequently. Training should be based on our needs," reinforcing the call for regular and relevant professional development.

Others focus on the format and delivery of training. P5LSET2 recommends, "Training should be modified to ensure refreshment training from time to time and training on digital integration rather than long-term and traditional types," advocating for modern, flexible formats. Meanwhile, P1LSMT2, who has not received TPD training but attended item construction training, notes, "The training programs are not sufficient for professional development. It should be conducted in real time," highlighting the need for timely and practical sessions.

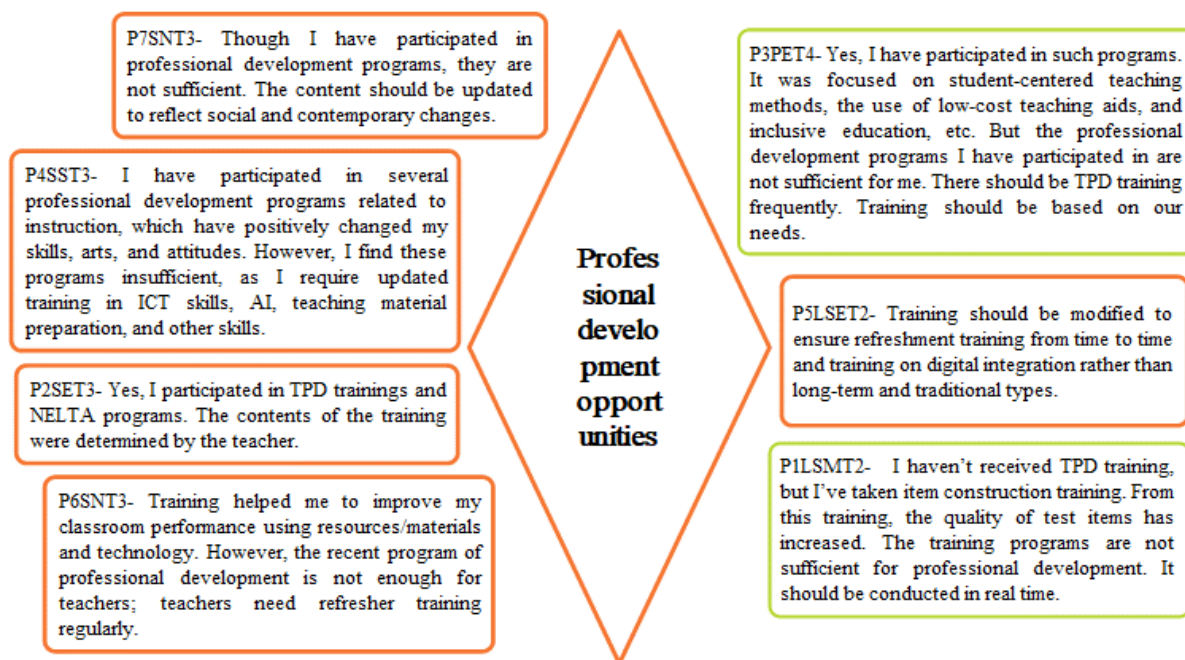


Figure 26 Professional Development Opportunities at Secondary Level

The qualitative findings reveal teachers' participation in professional development programs. However, they perceive as professional development training are insufficient and misaligned with changing educational needs, particularly in areas like ICT and digital pedagogy. There is a strong collective demand for need-based, regularly updated, and context-relevant training formats.

The triangulated findings show that while teachers acknowledge the benefits of professional development in improving teaching effectiveness, they report limited access to regular, relevant, and up-to-date training. Quantitative data reflect moderate participation, with low scores for subject-specific and mentoring support. Qualitative responses reinforce this, revealing dissatisfaction with outdated content and inflexible formats. Teachers call for more frequent, need-based, and digitally focused training. Together, the findings highlight a gap between existing opportunities and the evolving professional needs of teachers.

Parental Engagement

Teachers perceive a generally positive level of parental engagement (Table 25). While direct parental involvement in children's learning has the lowest mean ($M=3.14$), indicating moderate agreement, communication between school and parents is seen as quite strong. Specifically, "I regularly communicate with parents for their children's progress" scored highest ($M=3.78$), followed closely by the frequency of parent-teacher meetings ($M=3.61$) and school communication regarding student progress ($M=3.57$). The overall mean of 3.53 with a

relatively low standard deviation ($SD=0.82$) suggests a consistent, moderate-to-high perception of engagement among teachers.

Table 25 Status of Teachers' Perceptions on Parental Engagement

Statements	Mean	SD
Parents are actively involved in their children's learning	3.14	1.06
My school regularly communicates with parents regarding student progress	3.57	1.03
Parent-teacher meetings are held frequently	3.61	0.97
I regularly communicate with parents for their children's progress	3.78	0.91
Total	3.53	0.82

The Figure 27 explores the theme of parental engagement in schools, highlighting both efforts made by teachers and the challenges they face. Several respondents describe proactive communication strategies to involve parents in their children's education. For example, P4SST1 shares, "I regularly communicate with parents through phone calls and meetings to discuss student progress and offer suggestions," emphasizing the value of direct contact. Similarly, P7SMT3 notes, "I share student progress through regular meetings and messages and invite parents to participate in school activities," showing a consistent effort to keep parents informed and involved.

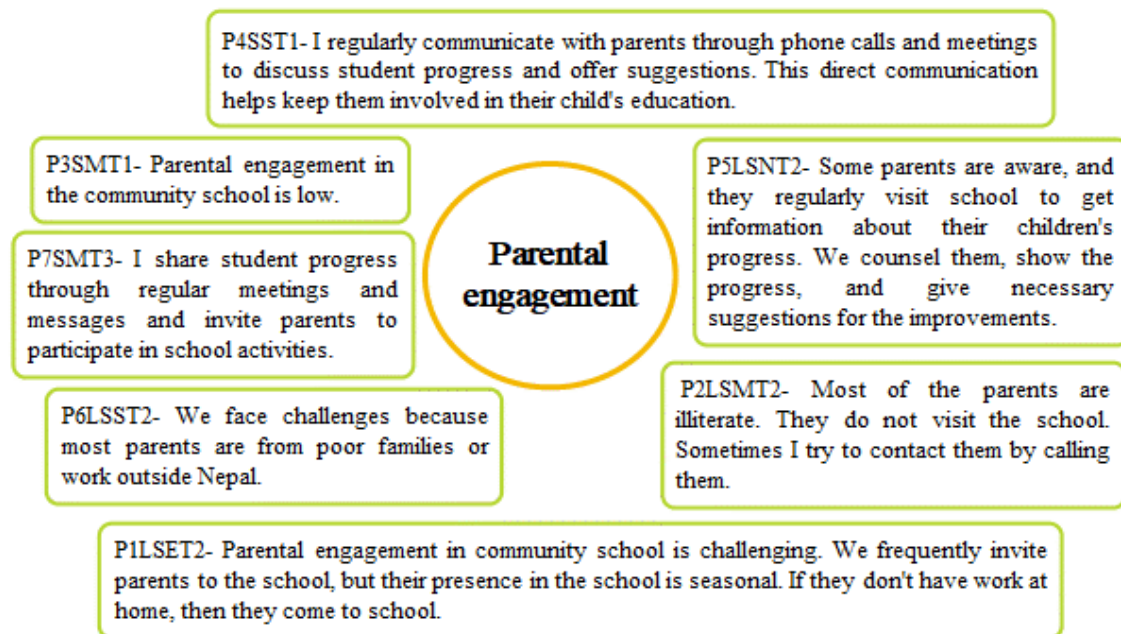


Figure 27 Parental Engagement Practice at School Education

However, many respondents also point out significant barriers to effective parental engagement. P3SMT1 plainly states, "Parental engagement in the community school is low," while P6LSST2 explains, "We face challenges because most parents are from poor families or work outside Nepal," indicating socioeconomic and geographic obstacles. P2LSMT2 adds,

"Most of the parents are illiterate. They do not visit the school. Sometimes I try to contact them by calling them," highlighting the difficulty of engaging parents who may lack formal education or confidence in school settings.

Despite these challenges, some parents are actively involved. P5LSNT2 observes, "Some parents are aware, and they regularly visit school to get information about their children's progress. We counsel them, show the progress, and give necessary suggestions," showing that engagement is possible with the right support. Yet, as P1LSET points out, "Parental engagement in community school is challenging... their presence in the school is seasonal," suggesting that even willing parents may be constrained by time and responsibilities.

The qualitative findings shows that teachers adopted that variety of strategies for parental engagement, including regular communication and invitations. However, sustained engagement is often obstructed by socioeconomic hardships, migration, and parental illiteracy. Schools provide support and counselling programs. However, selective parental engagement is a major challenge.

The findings reveal that teachers perceive parental engagement as generally positive, with strong communication practices in place. Quantitative data shows moderate-to-high agreement on regular parent-teacher interactions, while qualitative responses confirm teachers' proactive efforts, such as phone calls and meetings. However, both data types highlight key barriers, including poverty, migration, and parental illiteracy, which limit consistent involvement. Although some parents are engaged and responsive, overall participation remains irregular. These challenges make sustained, inclusive parental engagement difficult despite schools' support efforts.

Regularity of Teacher and Students

Table 26 highlights teachers' perceptions of the regularity and punctuality of both teachers and students, with an overall mean score of 3.98 (SD=0.66), indicating a generally positive perception. Teachers reported high personal attendance (M=4.33, SD=0.88), and acknowledged that punctuality is maintained by both teachers and students (M = 3.98) and that school policies support regular attendance (M = 4.00). However, student attendance was rated slightly lower (M = 3.88), and the effectiveness of measures to address absenteeism received the lowest mean (M = 3.70), suggesting room for improvement in managing and supporting student attendance.

Table 26 Status of Teachers' Perceptions on Regularity of Teacher and Students

Statements	Mean	SD
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I maintain regular attendance in school	4.33	0.88
My students attend classes regularly	3.88	0.91
My school has measures to address student absenteeism	3.70	1.00
Punctuality is maintained by both teachers and students	3.98	0.86
My school's policies promote regular attendance	4.00	0.78
Total	3.98	0.66

The Figure 28 centres on the theme of regularity of teachers and students, showcasing various strategies used by educators to promote consistent attendance and engagement. Many respondents emphasize the importance of tracking attendance, motivating students, and involving parents. For example, P7SET3 shares, "I track attendance, keep students engaged, and contact parents when needed to support regular attendance," highlighting a proactive and multi-pronged approach. Similarly, P7SMT3 states, "I maintain attendance records, communicate with parents, and keep lessons engaging," showing how consistent monitoring and engaging teaching methods contribute to regularity.

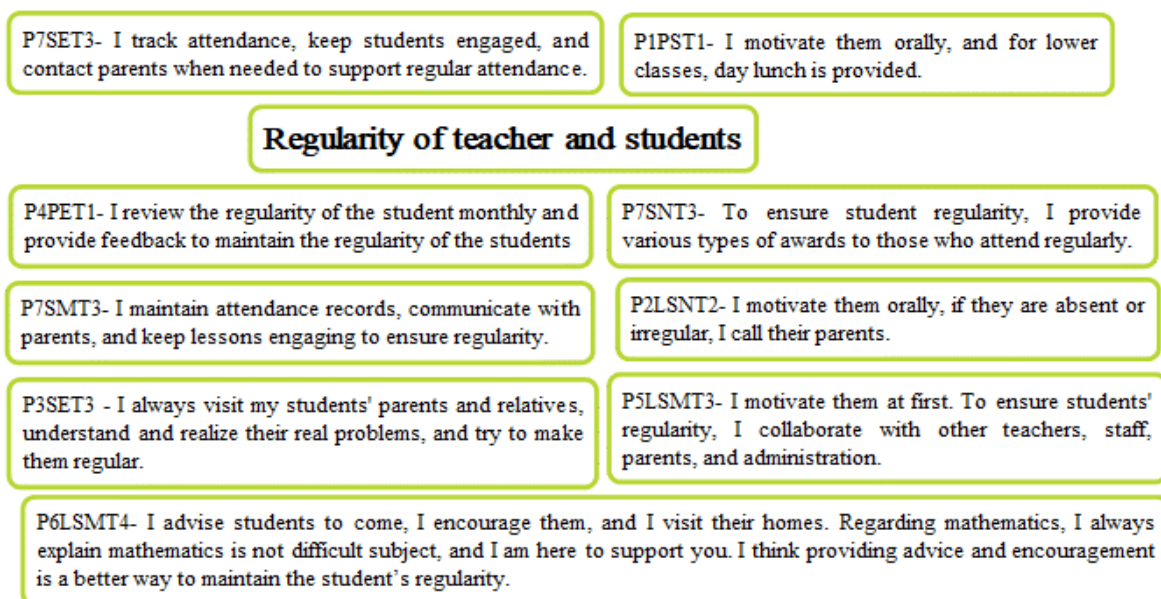


Figure 28 Regularity of Teacher and Student at Secondary Level

Motivation plays a key role in several responses. P1PST1 mentions, "I motivate them orally, and for lower classes, day lunch is provided," suggesting that incentives and care can improve attendance. P7SNT3 adds, "I provide various types of awards to those who attend regularly," reinforcing the value of recognition and rewards. P2LSNT2 and P5LSMT3 also focus on motivation and collaboration. P2LSNT2 says, "I motivate them orally; if they are absent or irregular, I call their parents," while P5LSMT3 explains, "I collaborate with other teachers, staff, parents, and administration," showing a team-based approach.

Some respondents go further by engaging directly with families. P3SEST3 shares, "I always visit my students' parents and relatives, understand and realize their real problems, and try to make them regular," emphasizing empathy and personal outreach. P6LSMT4 also takes a supportive stance, saying, "I advise students to come; I encourage them; I visit their homes... I always explain mathematics is not a difficult subject; I am here to support you," showing how reassurance and subject-specific encouragement can help maintain attendance. Finally, P4PET1 notes a structured approach: "I review the regularity of the student monthly and provide feedback," indicating that regular monitoring and feedback are key tools in promoting consistent attendance.

Monitoring attendance, motivating students through incentives, involving parents, and conducting home visits are the strategies adopted by the teachers according to the qualitative information of this study. This shows a strong commitment of teacher to student engagement. However, the level of effort and methods vary, with some teachers adopting deeply personalized and empathetic practices to address underlying attendance issues.

The findings reveal a generally positive perception of teacher and student regularity, with teachers reporting strong personal attendance and institutional support. However, student attendance remains a concern, with room to improve efforts addressing absenteeism. Qualitative insights support these findings, showing that teachers use varied strategies—such as tracking attendance, motivating students, involving parents, and making home visits—to improve regularity. While all teachers show commitment, the depth and approach differ, ranging from structured monitoring to empathetic outreach and personalized encouragement to ensure student engagement.

Access and Use of Digital Resources

Table 27 presents teachers' perceptions on access to and use of digital and subject-specific resources, with an overall mean score of 3.53 (SD = 0.70), reflecting a moderate level of access and integration. Teachers reported relatively high effectiveness in using subject-related tools (M = 3.98, SD = 0.74) and access to such tools (M = 3.76, SD = 1.03). However, lower mean scores were found for student training in tool usage (M = 3.12) and school investment in modern teaching tools (M = 3.37), indicating gaps in support and infrastructure. Use of AI tools and online portals also remained moderate, suggesting potential for further digital integration.

Table 27 Status of Teachers' Perceptions on Access and Use of Digital Resources (n=180)

Statements	Mean	SD
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My school provides subject-specific teaching resources (keep in below themes)	3.58	0.87
My school supports teachers in addressing subject-related challenges (keep in below themes)	3.66	0.91
I have access to subject-specific tools (calculators, lab equipment, educational software)	3.76	1.03
I effectively use subject-related tools in my teaching	3.98	0.74
My students are trained in using subject-related tools	3.12	1.10
My school invests in modern teaching tools	3.37	1.06
Technology is integrated into my subject teaching	3.44	0.95
I frequently use learning portals like CEHRD learning portal	3.47	1.00
I am habitual to use AI tools in my instructional activities	3.39	0.97
Total	3.53	0.70

The Figure 29 explores the theme of access and use of digital resources in classrooms, revealing a wide range of experiences among teachers. Some respondents actively integrate digital tools into their teaching. For example, P4SST2 shares, "My school has ICT tools readily available, and I actively use them... I utilize a laptop and smart TV in my classroom," showing a strong commitment to digital integration. Similarly, P7SNT3 mentions, "I use slides in the classroom as a digital teaching tool," and P3LSNT4 says, "I use technology while teaching poetry to show the sample," indicating subject-specific use of digital aids.

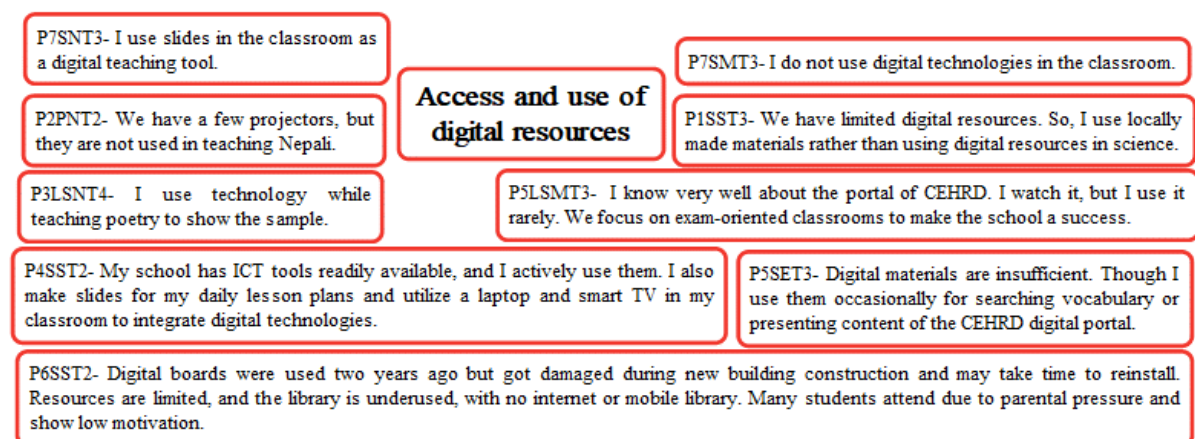


Figure 29 Access and Use of Digital Resources at Grade 5, 8, and 10

However, many respondents face limitations in access or usage. P2PNT2 notes, "We have a few projectors, but they are not used in teaching Nepali," suggesting that availability does not always translate into practical use. P6SST2 describes infrastructure challenges: "Digital boards were used two years ago but got damaged... resources are limited, and the

library is underused," highlighting how physical and logistical issues hinder digital learning. P1SST3 adds, "We have limited digital resources. So, I use locally made materials rather than using digital resources in science," showing a reliance on traditional methods due to resource constraints.

Some teachers are aware of digital platforms but use them sparingly. P5LSMT3 says, "I know very well about the portal of CEHRD... but I use it rarely," and P5SET3 notes, "Digital materials are insufficient... I use them occasionally for searching vocabulary or presenting content," reflecting limited but purposeful use. On the other hand, P7SMT3 plainly states, "I do not use digital technologies in the classroom," indicating a complete absence of digital integration.

The qualitative results show differences in classroom access to and use of digital resources: some teachers actively include technology into their lessons while others have subject-specific, infrastructure, or logistical limitations. Although some teachers show deliberate or subject-specific digital use, many depend on conventional approaches due to inadequate resources, unused infrastructure, or lack of training, so highlighting a digital divide in classroom practices.

The triangulated findings reveal that while many teachers have moderate access to digital and subject-specific resources, their actual use varies greatly. Quantitative data indicate relatively effective use of tools, but limitations in training and infrastructure. Qualitative responses confirm this gap: some teachers actively integrate digital tools into lessons, while others face challenges such as damaged equipment, lack of access, or insufficient support. These differences suggest a digital divide, where infrastructure, training, and resource availability significantly influence digital integration in classroom practices.

Comparative Analysis Overall

Table 28 and Figure 30 presents the overall results of teachers' perceptions across various domains, disaggregated by subject (English, Mathematics, Nepali, and Science). Mathematics teachers consistently reported the highest mean scores across most areas, particularly in teaching methods ($M = 4.28$), student engagement ($M = 4.36$), and research initiatives ($M = 4.01$), indicating strong confidence and practices in these domains. Nepali teachers also reported high engagement practices ($M = 4.36$) and effective use of result analysis and feedback ($M = 4.20$). In contrast, Science teachers showed relatively lower scores in professional development opportunities ($M = 3.30$) and parental engagement ($M = 3.27$), suggesting areas needing support. English teachers demonstrated balanced perceptions but scored lower in access and use of digital resources ($M = 3.47$). Across all subjects, the highest

overall score was in student engagement practices ($M = 4.27$), while the lowest was in access and use of digital resources ($M = 3.53$), indicating a general need to strengthen technological integration in teaching.

Table 28 Overall Results based on Different Subject Teachers

Subject	English		Mathematics		Nepali		Science		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Instructional Planning	3.96	0.82	4.16	0.55	4.08	0.61	4.04	0.53	4.06	0.63
Students' engagement practices	4.16	0.78	4.36	0.57	4.36	0.64	4.20	0.53	4.27	0.64
Teaching methods	3.93	0.71	4.28	0.44	4.13	0.61	3.90	0.43	4.06	0.57
Resource utilization in instruction	3.52	0.68	3.91	0.59	3.73	0.64	3.52	0.74	3.67	0.68
Assessment Practices	3.96	0.68	4.18	0.52	4.10	0.57	4.02	0.43	4.07	0.56
Bullying	3.74	0.90	3.66	0.78	3.77	0.70	3.69	0.72	3.72	0.77
Research initiatives	3.82	0.66	4.01	0.55	3.87	0.68	3.82	0.57	3.88	0.62
Medium of Instruction	3.52	1.04	3.78	0.85	3.78	0.75	3.67	0.71	3.69	0.84
Result Analysis and Student feedback	4.06	0.78	4.01	0.76	4.20	0.72	3.99	0.55	4.06	0.70
Professional development opportunities	3.42	0.81	3.62	0.79	3.67	0.81	3.30	0.88	3.50	0.83
Parents' Engagement	3.46	0.82	3.78	0.64	3.60	0.95	3.27	0.77	3.53	0.82
Regularity of Teachers and Students	3.97	0.69	4.10	0.66	3.93	0.76	3.91	0.52	3.98	0.66
Accesses and use of digital resources	3.47	0.70	3.59	0.76	3.58	0.65	3.48	0.69	3.53	0.70

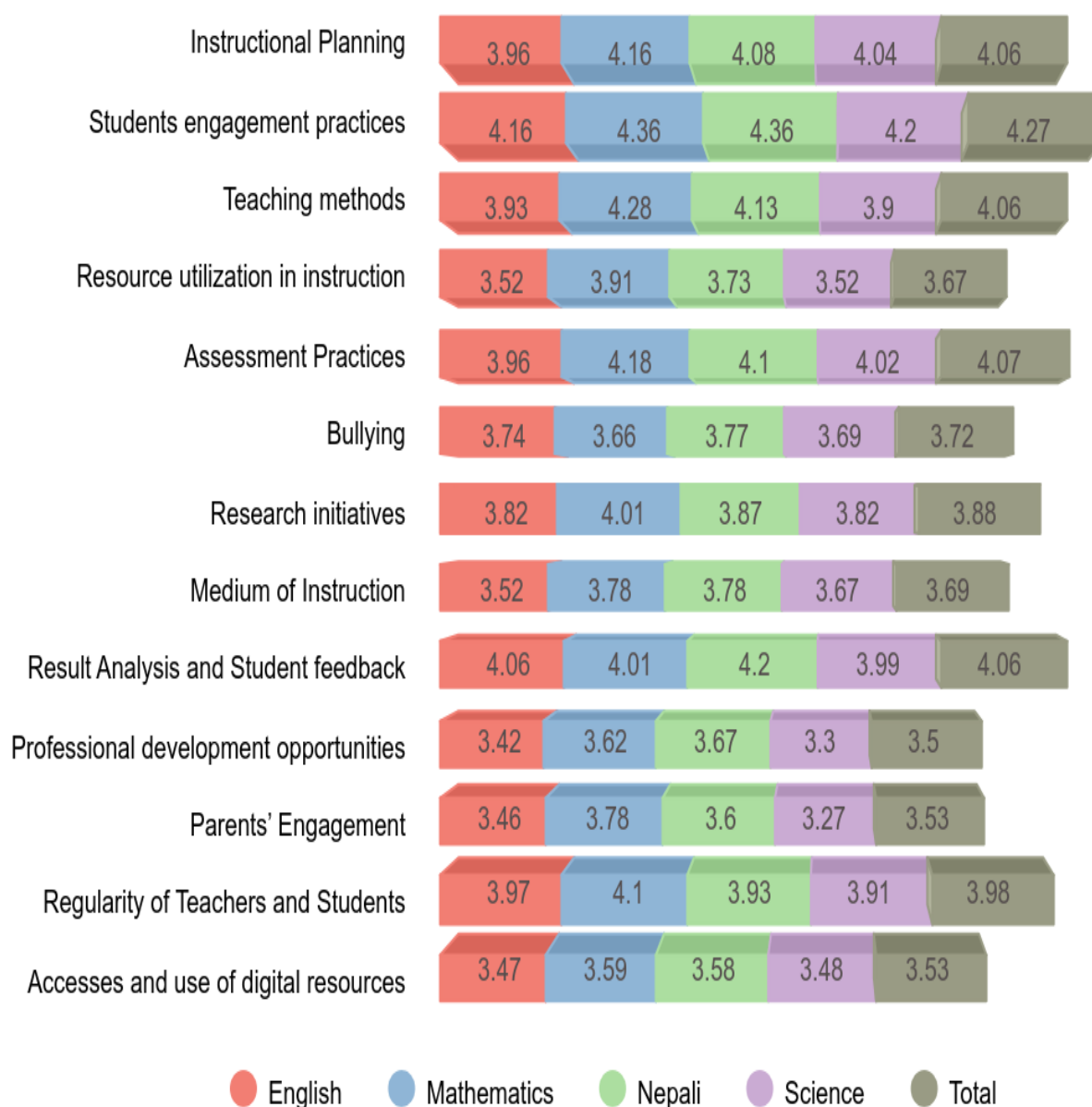


Figure 30 Visual Representations of Comparison based on Diverse Subjects

Figure 31 presents a comparative analysis of mean ratings across Classes 5, 8, and 10 on various themes related to the school learning environment and educational practices. Overall, Class 10 received consistently higher ratings across most themes, indicating relatively stronger implementation or perception of these factors. Notably, "Result Analysis and Student Feedback" and "Students' Engagement Practices" scored highest in Class 10, suggesting increased emphasis on feedback and student-centered learning at higher grades. In contrast, lower scores are observed for "Bullying" and "Research Initiatives" across all grades, reflecting these as weaker areas in school settings. While themes such as "Regularity of Teachers and Students," "Assessment Practices," and "Teaching Methods" show relatively uniform ratings across grades, slight variations suggest incremental improvements with grade level.

Interestingly, Class 5 rated slightly higher than Class 8 in some domains such as "Professional Development Opportunities" and "Access and Use of Digital Resources," indicating inconsistent perceptions or practices across grades.

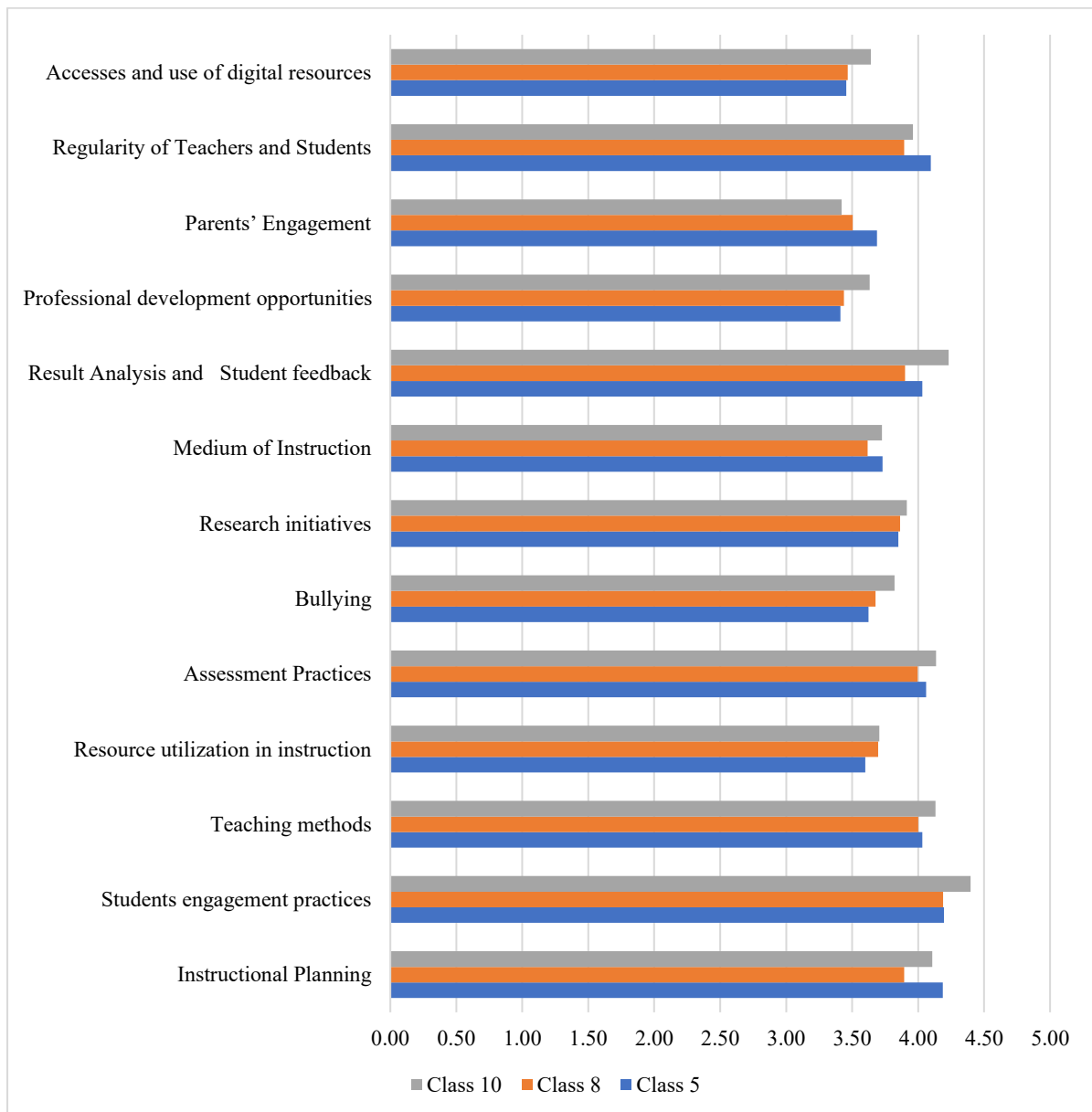


Figure 31 Visual Representations of Comparison of Mean Score based on Grades

Chapter VI

Discussion

This present study explored alignment between the NARN and NASA findings with that of education policies of the Government of Nepal and their communication across federal, provincial and local levels and implementation in schools for enhancing quality of education. This chapter briefly discusses the findings from the study in thematic terms drawing on the appropriate literature, theoretical bases and findings from policy and plans review and analysis of the empirical findings.

Policy Communication, Awareness and Planning

This study has reported that policy goals stated in the educational policies formed at the national and sub-national levels reflect and represent the findings of the studies conducted by ERO. For example, the SESP, stated, ‘The result of the assessment of learning achievement conducted in various levels in Nepal in recent years have shown that overall student achievements have stagnated’ (MoEST, 2022, p. viii). This statement shows that the SESP links with the findings shown by the assessments conducted by ERO. For example, the NASA results of grade 8 (2017, 2020) and grade 10 (2020, 2023) consistently mentioned that majority of the students have achieved or mastered less than 50% of the curriculum in all subjects (English, Nepali, Science and Mathematics). The empirical evidence obtained in the present study also echo these concerns as the key education stakeholders expressed their worry at the underachievement of students in several subjects. They further indicated the need for targeted professional development of teachers and management of resources for schools. One of the major concerns of the NASA report and its recommendation was that there were learning disparities across provinces needing province-specific intervention for supporting teachers to upskill their pedagogical practices, improved budgetary provisions and contextualization of the curriculum as per the context-specific learning needs across provinces. This concern has been, though loosely, captured by the SESP document that stated a need for a robust coordination and cooperation mechanism and accountability system between federal, provincial and local levels collective planning for the supply of quality human resources. This shows that study recommendations have been reflected across plans. However, the plans have missed to make specific targets for the improvement of scores across provinces. That means that policymakers at the federal level or those working in the central system have an awareness of the NASA findings.

However, when it comes to the local government level and school level stakeholders’ awareness of the results and recommendations, this study found that there is a gap in

communication of the study results to the lower level, thereby not making intended impacts. For example, as we have stated in the findings in the previous chapters, most of the teachers did not know what exactly was found by NASA study and what has been suggested for them to do to improve their instructional practices in schools. This showed that teachers' micro-level planning in the school was not affected by the findings and recommendations made by the NASA and NARN studies. However, the school leadership (e.g., head teachers) was mostly aware of the results. But their actions were limited due to the inefficient school systems, and human and material resource limitations they face in their respective institutional contexts. Even in the school level, communication of the results and recommendation by the school heads to school teachers was also not sufficient. In general, the school level planning initiatives were not directly connected with the NASA and NARN findings but have reached the school level through different indirect channels such as training conducted by governmental and non-governmental organizations. Federal stakeholders acknowledged that experience-based decision-making frequently dominates data-driven policy, despite projects such as the ReAL program demonstrating a certain alignment with NASA findings. NASA/NARN lacks significant influence over educational planning and initiatives, particularly in identifying schools in need of assistance at the provincial level. Nevertheless, inadequate communication channels and the absence of well-defined institutional mechanisms hinder schools to get assessment results on a consistently. Trainers occasionally use NASA/NARN data to organise teacher development workshops; however, there is no formal mandate for them to do so.

School Environment and Wellbeing

NARN and NASA studies of different years and grades have mentioned that a positive school environment significantly affects student engagement, performance, and emotional development. In the international context, PISA- 2022 also reported that students who reported feeling safe and were not exposed to bullying or risk at school have a stronger sense of belonging at school, feel more confident about their capacity for self-directed learning and are overall more satisfied with life (OECD, 2023). The study conducted by Thapa et al. (2013) found that the equitable classroom interaction is fostered in supportive environments where bullying is discouraged. Several other studies have also reported the role of school environment in students learning and teachers' instructional practices. In many schools, inclusive seating arrangements and peer collaboration practices are being used to create egalitarian learning spaces. Encouragingly, in some regions, teachers actively incorporate students' home languages and cultural experiences into the classroom. These strategies align with principles

of culturally responsive pedagogy and enhance learner self-esteem and participation (Fredricks et al., 2004).

Furthermore, the growing use of local teaching materials and participatory group work reflects an effort to contextualize learning key tenet of SSDP (MoEST, 2016). The SESP also made a strong commitment towards establishing a safe school environment for the promotion of students' learning. Recruitment of school nurses and provisioning school-level counselling for students' psychological well-being were also equally emphasized by SESP report. These provisions represent recent concerns made by education policies about creating a safe school environment and also the anti-bullying measures to be taken as suggested by NASA results.

The present study also explored the provisions and practices of anti-bullying strategies. It was found that some school developed school bullying controlling mechanisms while in other schools, teachers individually tried their best in controlling and minimizing school bullying activities. All teachers reported that they notice if there were any instances of bullying and adopt specific control mechanism such as talking to the students in person, providing them basic counselling and reporting to the school heads in case the things get serious. The teachers' responses also reflected the NASA findings that reported that more than 50 % students reported experiences of school bullying and faced some kind of bullying during their school life. Based on these findings, the NASA -2023 suggested for targeted measures for controlling school bullying by providing awareness programs and counselling sessions among staff. Although SSDP and SESP envision inclusive and supportive schools, the lack of guidelines and measurable standards hinders consistent application (MoEST, 2016).

Further to this, the school environment was also closely connected to the resource availability. This study found that there was unequal distribution of resources (digital and physical) across schools. Digital inequality also contributes to disparities in school environments. Urban schools are more likely to integrate digital learning tools, while rural schools often lack even the basic infrastructure. Similarly, the availability of books, libraries, and emotionally safe spaces varies widely. Schools are dependent on local leadership and community support to bridge these gaps, making system-wide improvement difficult without targeted investment. To build on the positive examples, schools need both material support and policy-driven mandates, which has strongly been uttered by SESP by intending to develop digital infrastructure and internet connectivity in all schools within the project duration.

Additional insights from field data suggest that while school-level anti-bullying strategies exist, these are mostly ad hoc. Trainers and headteachers confirmed reliance on individual teacher efforts, such as verbal counselling and observation. Some schools had

developed internal codes of conduct, while others lacked structured mechanisms. At the provincial level, officials acknowledged the absence of clear monitoring frameworks for emotional well-being, partly due to limited human resources at local levels. Teachers also reported that their ability to address bullying is often constrained by time, lack of training, and the absence of dedicated psychological support in schools

Instructional Activities and Student Engagement

The analysis of Nepal's policy documents and development plans shows that the policies have taken a progressive path that emphasized student-centered instructional practices and enhanced student engagement in school activities (CDC, 2019; MoEST, 2019). However, several studies indicate low level student engagement in regular problem-solving activities and continuation of traditional teacher-centred instructional practices in schools. The NASA report mentioned that instruction often fails to integrate problem-solving or contextualized examples that could make abstract concepts more accessible (ERO, 2022). Encouragingly, many teachers have started integrating real-life objects such as coins, clocks, and local stories to make lessons relatable. Some have established peer tutoring systems to support low-performing students, showing adaptability even within limited means. Additional support has been provided to students in some cases by running extended tutorial classes. These examples align with international pedagogical standards that advocate for experiential, learner-centered education (Fielding-Wells & Makar, 2008).

The study findings revealed that teachers report using discussion, inquiry-based activities, and visual aids where possible and also link them with the locally available low-cost materials while teaching subjects such as mathematics and sciences. Particularly in classrooms with headteachers engaged in NASA/NARN reviews, teaching practices are more responsive and tailored (ERO, 2018, 2022). However, the scope and depth of student-centered pedagogy remain limited affected by resource limitations, no or low training inputs received by teachers, class sizes and teachers' availability of time for preparation since they were largely overloaded. Curriculum documents as well as policies and plans aim and encourage to promote student engagement, but the implementation relies heavily on teacher capacity, which varies widely. For example, the SESP aimed at implementation of consolidated equity strategy in school systems to reduce disparity in access and enhance students' participation in learning. The report stated, "there are disparities in access, participation and learning achievement based on gender, region, sociocultural context and economic condition" (MoEST, 2022, p. 21).

The NASA reports also highlighted this concern of student participation and engagement in learning and recommended for empowering teachers to increase classroom

participation and their extended engagement in curricular and extra-curricular activities. Teachers in this study reported their awareness of the value of student participation, and their intention to do so but having faced constraints in resources management, low parental support for children's learning and heavy workloads, they could not develop activity-based instruction for improving students' learning engagement as expected by the policies and plans. The present study highlighted the need for enhanced engagement, systemic measures such as peer observation, and instructional coaching for improving students' engagement. Additionally, creating adaptable modules that allow for differentiated instruction would enable teachers to better meet the diverse needs of students.

Despite these efforts and coherent policy there exists a noticeable disjunction between national-level assessments such as NASA and NARN, and how these are operationalized at the school level. Yet, where leadership is robust, schools have started aligning their School Improvement Plans with national assessment findings, indicating hopeful practices. For instance, headteachers in several municipalities are using achievement data to advocate for targeted professional development and remedial programs. As the present study findings revealed gaps in communication of NASA and NARN results, to close this gap, more localized training on NASA/NARN findings, integrated into teacher professional development programs, is essential. Regular feedback loops should be institutionalized at the municipal level to ensure that national objectives are internalized by the actors most critical to their success. It is also important to note and recognize the role of head teachers and teachers in creating environment for promoting a child-friendly, resourceful and inclusive learning for quality of education in schools.

Provincial and federal-level responses repeat the implementation gap: although policies exist promoting learner-centered pedagogy, resource disparity and lack of subject-specific teachers, especially in science and mathematics, remain key challenges. Trainers reported that teaching aids and ICT materials were being promoted, but implementation varied by province. In several schools, real-life objects and peer learning methods are used innovatively, often initiated by motivated teachers rather than as a system-wide effort.

Assessment and Feedback

Formative assessment practices are gaining attraction but remain unevenly implemented. In some schools, teachers use portfolios, short quizzes, and observational

feedback to gauge learning. Verbal feedback and classroom praise are used to reinforce participation and effort, creating a supportive learning climate.

The National Curriculum Framework and continuous assessment policies advocate for inclusive, formative evaluation (CDC, 2019). Yet, implementation continues to favor summative, examination-driven practices. Teachers report time constraints and lack of tools as key barriers to conducting diagnostic assessments. Furthermore, the link between assessment outcomes and instructional adjustments is not consistently established (Earl, 2013). ERO's repeated findings emphasize the lack of depth in assessments, particularly in mathematics and science. Students often perform better on recall questions than on application-based tasks, suggesting that classroom assessments do not align with the competencies demanded by the curriculum (ERO, 2022).

In line with the findings and recommendations stated in the NASA results, the SESP document stated that the current assessment tools to be revised and linked with the learning process (MoEST, 2022). It has emphasized the assessment for learning (formative) over assessment of learning, that involves creation of a continuous feedback mechanism based on the assessment results. Despite these challenges, promising developments are emerging. Some schools are integrating project-based learning and presentation assessments, which promote critical thinking and communication. Where school leadership prioritizes assessment literacy, teachers are more likely to innovate and improve feedback practices (Earl & Katz, 2013). The present study identified that the assessment related recommendations have reached the classroom situation as teachers have provided regular homework and provided feedback based on homework, as well as feedback based on the formative assessment practices such as unit tests, mid-term exams and so on. Although this practice was not directly informed by or based on the NASA recommendations, these concepts travelled to the teachers and their classrooms through other means such as teachers' self-access to publications and reading of policy documents.

Federal officers emphasized that the national assessment recommendations had led to broad acknowledgment of the need for classroom-level reform, but without a mandatory feedback loop, such recommendations are not always implemented. Trainers pointed out that some formative techniques, like quizzes and diagnostic questions are gradually being adopted, especially after teacher training programs. However, most teachers lacked professional development in test analysis, limiting their ability to derive meaningful feedback from student assessments. Provincial education officials indicated that assessment results were seldom analyzed by municipalities or schools due to capacity gaps.

Stakeholder Engagement

The NASA findings and recommendations highlighted the parental involvement in school activities for supporting students learning (ERO, 2023). It strongly recommended the schools for organization of activities such as workshops, community programs, parental meetings and adult education programs. The SESP document reemphasized these ideas and aimed for strengthening the quality of education through collective actions of the three tiers of government. For example, the SESP mentioned “as per the 2018 compulsory and free education act (2075 BS), the three tiers of government are responsible for providing education at the basic level, along with the responsibility of parents/guardians to send their children to schools” (p.36). However, this study identified that stakeholder (parents, communities and local municipalities) involvement in schools remained an area of promise but challenge. In several municipalities, parents were found to be actively participating in school events, monitoring student attendance, and supporting homework practices. But this was a very limited scenario. Teachers also reported improved student behavior and academic outcomes when parents are regularly engaged in school systems (Christenson et al., 2012).

In most cases, parental engagement in school was affected by their socio-economic factors such as poverty, low parental motivation and low or no education. Some good practices were also observed in some schools that developed structured parent-teacher association and conducted meetings more frequently than before to inform them of their children’s progress and learning behaviours. Such kind of community and local government engagement was not a new phenomenon. For example, SSDP document mentioned that municipalities in provinces like Bagmati and Gandaki have piloted education units that monitor teacher attendance, supervise classroom instruction, and coordinate with NGOs for resource support (MoEST, 2016).

Despite these hopeful practices, systemic issues persist. Many parents, especially in rural or marginalized communities, are illiterate or unable to regularly engage due to work and migration. Moreover, SMCs often lack the training needed to influence school governance meaningfully. Provincial education offices, tasked with oversight, often have limited capacity to carry out monitoring functions effectively. The engagement of stakeholders also varies based on school type.

To strengthen stakeholder involvement, institutional mechanisms must be reinforced. Training for SMC members, formal stakeholder feedback systems, and transparent school reporting formats can bridge accountability gaps. Local governments must be empowered with dedicated education officers to coordinate monitoring and support functions.

The discussion across key thematic areas reveals a nuanced picture of Nepal's basic education system. While policy frameworks such as SSDP and SESP articulate comprehensive goals for equity, inclusion, and quality, implementation at the school level remains varied. However, amidst the challenges, there are emerging hopeful practices data-driven planning, inclusive environments, student-centered instruction, formative assessments, and community partnerships that demonstrate the system's potential.

Provincial officers shared that engagement of stakeholders varies by geography and socioeconomic condition. Community learning centers and Abhibhabak Sikchhya programs were mentioned as means to enhance parental awareness, particularly in Madhesh and Karnali. Trainers observed that in-service training often encourages schools to strengthen SMC/PTA mechanisms, yet without ongoing support, sustainability remains questionable. Moreover, some provinces like Sudurpaschim and Koshi lack consistent monitoring due to unclear legal authority of provincial bodies over local governments, as reported by officials. This affects alignment and accountability.

Trainers and provincial education officers reported increasing use of mentoring, lesson study, blended learning, and the "Teaching at the Right Level" approach. These are aligned with broader goals of improving teaching quality but still suffer from inconsistent funding and follow-up support. Provincial officers acknowledged budget distribution disparities, particularly in Karnali, Sudurpaschim, and Madhesh. While there are government scholarship programs targeting Dalits, Madhesis, and children with disabilities, specific remedial classes or teacher incentives for these regions are lacking or inconsistently implemented. Although the federal government claims budgets are allocated based on need, local authorities often lack capacity or guidelines for equitable use assessments, and community partnerships that demonstrate the system's potential.

Chapter V

Conclusions and Recommendations

This chapter presents conclusions and recommendation of the study as detailed out below.

Conclusions

This study explored the alignment of NASA and NARN findings with educational policies and plans of the Government of Nepal. The findings of this mixed methods study reveal a dynamic interplay of established strengths of the education system and persistent challenges occurring in implementation of policies for quality education in Nepal. While there are common agendas raised by both NASA study findings and the priorities set by the educational plans and policies, the effective implementation of the programs for achieving the policy goals and activities conducted in schools varied and different making the policy communication incoherent and incomplete. There is a positive understanding of the stakeholders towards improved instructional practices, utilization of concrete, local, and self-made teaching materials to enhance learning, key actions needed for realization of these perceptions into real practice were very limited affected by several factors that link to social, cultural, economic and educational issues. School level key stakeholders and policy actors such as head teachers and teachers had made several institutional efforts to discourage and minimize bullying within supportive learning environments, but such efforts were not sufficient.

There was a partial and varied awareness of national assessments like NASA and NARN among local education officers, head teachers and teachers so that the data-informed school planning for quality education was a rare practice. Although headteachers frequently received several training opportunities, a notable gap existed in professional development for teachers concerning early-grade reading and numeracy and understanding of the findings of national assessments, so support for teachers to make evidence-based course planning and design of instructional activities was limited. Furthermore, despite efforts to promote continuous assessment and feedback, the consistent adaptation of teaching strategies based on student performance remains an area for improvement. Parental engagement is notably hampered by socio-economic factors such as parents being daily wage workers, illiteracy, or being abroad, resulting in limited direct involvement in school visits and home learning support. This also indicates that more work is required to be done at the school level to engage parents more meaningfully in supporting students' learning. Lastly, technology integration in learning is one of the important concerns as it has been gradually replacing the traditional methods. However, the preparation at the school level is less and teachers' capabilities to make effective use of emerging technologies in education is very much insufficient.

The findings from the analysis of various stakeholders' perceptions and practices across various educational domains reveals an educational landscape characterized by a dedicated teaching force deeply committed to student-centered pedagogy and meticulous instructional planning, marked by high self-reported efficacy in engaging students through interactive methods, providing constructive assessment feedback, and maintaining professional regularity. However, this commitment is often exercised within a framework of significant systemic and resource limitations. Key challenges include a notable absence of NASA study result integration into local school planning and persistently low perceptions regarding access to and effective utilization of digital resources, hindering modern pedagogical advancements. Teachers also express a clear need for more frequent, updated, and needs-based professional development, particularly in ICT and AI, and report moderate school encouragement for action research. Furthermore, despite individual teacher efforts, institutional policies and mechanisms for bullying prevention and reporting are perceived as underdeveloped, affecting student safety perceptions. Persistent challenges in parental engagement, often linked to socioeconomic factors, and concerns about the adequacy of school-provided teaching materials underscore the necessity for broader structural enhancements. While subject-specific variations exist, with Mathematics teachers demonstrating consistently higher confidence and practices, the overarching findings point to an imperative for strengthened institutional support, targeted resource allocation, and policy reforms to fully empower educators and optimize educational outcomes.

Recommendations

The study reports the following recommendations.

- Disseminate NASA and NARN reports widely across provinces, municipalities and schools with targeted training on their interpretation and implementation for data-informed decision-making. This can be done through preparation of shorter summary reports in Nepali (and if possible, in other national languages) and sharing them through social and public media.
- Prioritize frequent, needs-based training in using early-grade reading and numeracy strategies, effective technology integration (including AI tools), and preparation of context-specific and simplified learning materials.
- Increase institutional support for teachers to conduct action research, regularly monitor them and reduce heavy workloads for teachers to provide them sufficient time for planning and professional learning.

- Implement comprehensive training for both teachers and students on effective digital resource use, while also supporting the creative use of local and self-made materials.
- Develop and clearly communicate comprehensive school-wide policies for bullying prevention and intervention, including robust reporting mechanisms about school progress to the upper level.
- Implement regular awareness programs on all forms of bullying for students, teachers, and parents.
- Mandate formal, systematic processes for result analysis at all levels to ensure data-driven instructional improvement.
- Promote the effective use of diverse and alternative assessment methods alongside traditional tests to ensure equitable learning for all children.
- Promote consistent incorporation of local languages in instructional activities to enhance comprehension and inclusion. This can be done by following the multilingual resources prepared by governmental and non-governmental organizations.
- Develop diverse and flexible strategies to enhance parental engagement, addressing socioeconomic factors, literacy levels and their motivation.
- Strengthen monitoring and evaluation systems and foster formal collaboration mechanisms with external stakeholders for resource mobilization and program implementation.

Actionable Recommendations

Based on the broader recommendations made above, we recommend the following specific actions point for the stakeholders to consider while designing their future actions.

For Headteachers

- Conduct school level NARN and NASA findings sharing events every year before the beginning of every academic year to communicate the national assessment findings to teachers and staff. This can be done while making annual plans.
- Refer NASA and NARN findings as references for developing annual plans in the school.
- Analyse school results in relation to NASA findings and aim for improving results every year.
- Support and encourage teachers to take any professional development opportunities available locally and nationally. Teachers are the key policy actors in implementing the findings and recommendations.

- Share the NASA and NARN findings and their recommendations to the SMC members during events and meetings, set targets and let them know.
- Guide all the teachers on classroom instruction to be adapted being more focused on reading fluency, numerical skills in early grades as well as subject specific gaps in grade 5, 8 and 10.
- Identify the learning gaps and design data-driven planning and set SMART (Specific, Measurable, Achievable, Relevant, Time-bound)) goals.
- Conduct parenting education programs to inform parents about students' learning and progress.
- Coordinate with local governments, NGOs and private sector to improve school environment, management of resources and communication of the good practices in the school.
- Promote inclusion in school activities by providing opportunities for all children irrespective of their caste, language background, gender and ethnicity.

For Teachers

- Read NARN and NASA findings and relate them with the curriculum. Consider these while making annual work plans and also daily lesson plans.
- Compare school results with that of NASA and NARN findings and make improvements.
- Develop locally available materials, use them and relate students' learning with their daily life experiences.
- Make plans to deliver the curricular contents.
- Use curriculum as a guiding instructional material and refer to curricular competencies in developing assessment plans/strategies.
- Understand the problems NASA studies have shown and set priorities for effective delivery of curricular contents.
- Conduct anti-bullying sessions to inform students of the expected good behaviour in schools.

For Training Centres

- Incorporate strategies to train teachers on hands on modules for enhancing early grade reading and numeracy and integration of digital skill in instructional practices.
- Design customized training packages for teachers according to their experience, competencies and needs.
- Prepare effective and relevant tools for performance appraisal of teachers.

- Design some training sessions referring to ELDS, NARN and NASA results and their recommendations.
- Contextualize training sessions to enable teachers to do their pedagogies as per the specific instructional requirements of their school contexts.
- Support teachers to conduct action research, provide them feedback and make the action research experiences of the teachers taking TPD training more realistic.
- Conduct regular monitoring of how effectively the training inputs have reached the classroom and how teachers have performed during post-training teaching in schools.
- Show best practices of teachers from the national and international context of in-service teacher education to encourage teachers.
- Prepare teaching manuals or activity banks for teachers to make their teaching more activity-based and handy.
- Evaluate and modify the current teacher training curricula to ensure that the recommendations made by ELDS, NASA and NARN studies are addressed and aligned. For example, including inferential reading activities, mental maths and scientific reasoning, etc. as the contents of teacher learning.

For Local level (Metropolitan and Municipalities)

- Inform the schools to integrate ELDS, NARN and NASA recommendations into local School Improvement Plans (SIPs) and annual operational calendars.
- Support schools to conduct training to teachers about ELDS, NARN and NASA results and their recommendations.
- Use ELDS, NASA and NARN reports and their recommendations as priority areas of reference in the local level education planning and program investment.
- Establish monitoring and evaluation system including classroom observations, data tracking tools, and quarterly sharing meetings at local and provincial level for the implementation of assessment implications in the classroom.
- Mobilize funds for the allocation of sufficient resources, digital technologies and subject-specific resources to schools
- Launch regular capacity-building workshops for headteachers, based assessment findings which leads to instructional leadership, and effective implementation of NARN/NASA recommendations.
- Support schools to strengthen school-community relationship by allocating funds for parent-teacher workshops, parental education seminars, collaborative works with local youth clubs and social groups.

For Provincial Government

- Allocate specific budgets and human resources to support development and implementation of capacity development trainings for teachers and head teachers as per the recommendations made by NASA and NARN studies.
- Monitor these training programs by collecting teacher feedback, analyzing classroom observation data, and tracking learning outcome indicators.
- Prepare an annual report for sharing the impact of training programs on learning outcomes.
- Make sure that the ETCs have smooth operation with adequate human and material resources for teacher training as per the recommendations made by NASA and NARN studies.
- Establish mandatory provisions for in-service teacher learning. Set criteria for teachers to submit their records of self-regulated teacher learning (e.g., take part in online courses, attend seminars, conferences, short-term face-to-face courses, etc.)
- Establish a reliable data portal covering province level educational indicators. Use the data for analysis of students' achievements and teacher performance, and use the findings for developing province-level educational policy and planning.
- Conduct virtual as well as face-to-face best practice sharing sessions across districts within the province. Use NASA and NARN results as references.

For Education Review Office

- Coordinate with Teacher Service Commission (TSC) to incorporate the assessments findings and recommendations in curricula for teaching licenses and teacher selection processes.
- Circulate NASA and NARN findings to line agencies, by preparing small-size informative brochures and/or leaflets to communicate key results and alarming concerns.
- Design digital highlights, flyers, media broadcasts, video clips, etc. incorporating the assessment findings and recommendations to disseminate them through CEHRD portal.
- Develop and provide schools with practical diagnostic tools and guidelines, based on NARN and NASA findings, to help teachers identify specific learning gaps (e.g., in early literacy and numeracy sub-tasks).
- Conduct follow-up performance audits of schools to assess the extent and effectiveness of NARN and NASA recommendation implementation, providing evidence-based feedback for continuous improvement.

- Conduct research on an annual basis starting the research work as early as possible, preferably starting within the first three months of the fiscal year so that the research will be robust and maintain rigour in data and presentation of the findings.
- Conduct further research on barriers to the effective implementation of assessment recommendations and propose solutions.

Federal Level

- Establish a comprehensive national policy framework that strictly mandates the integration of NARN and NASA findings into all aspects of school education, from curriculum development to teacher evaluation and school budgeting.
- Develop robust accountability mechanisms for all tiers of government and school management regarding the implementation of national assessment recommendations.
- Prioritize and significantly increase national investment in digital infrastructure and resources for schools, including reliable internet access and modern teaching tools, ensuring equitable access across all regions.
- Revise the national policy on teacher professional development to ensure it is demand-driven, continuous, technology-focused, and directly linked to the identified needs from NARN and NASA.
- Foster stronger coordination with other relevant ministries (e.g., Ministry of Finance, Ministry of Health) to address socio-economic factors impacting learning outcomes, such as parental illiteracy and child labour.

We present the summary of the key recommendations, action points, responsible agencies and the timeframe for these actions in a tabular form below.

Recommendation	Actions	Responsible Agencies	Timeframe
1. Use assessment data for planning	Conduct annual NASA/NARN findings sharing before academic year; integrate findings in SIPs	Headteachers, Local Governments	Annually (Before Academic Year Start)
2. Improve classroom instruction	Guide teachers to address gaps in early literacy, numeracy, and subject-specific areas	Headteachers, Teachers	Continuous
3. Set SMART learning goals	Use data to identify gaps and set SMART goals	Headteachers, Teachers	Annual Planning Cycle

4. Professional development	Encourage and facilitate teacher participation in TPD aligned with assessment findings	Headteachers, Training Centres, Local Governments	Continuous (Biannual Reviews)
5. Engage parents and community	Conduct parenting education programs; share assessment goals with SMC	Headteachers, Local Governments	Quarterly
6. Inclusive school environment	Promote participation regardless of caste, gender, language, etc.	Headteachers, Teachers, SMCs	Ongoing
7. Align teaching with curriculum	Integrate assessment data in annual work and daily lesson planning	Teachers	Continuous
8. Develop context-based materials	Use locally available resources and real-life applications in teaching	Teachers	Ongoing
9. Conduct anti-bullying programs	Organize sessions to promote respectful student behavior	Teachers, Headteachers	Each Term
10. Tailored teacher training	Design training as per teacher experience and needs	Training Centres, Provincial Government	Semi-annually
11. Action research & feedback	Support teacher-led action research and follow-up feedback	Training Centres	Annually
12. Evaluate and revise TPD curriculum	Include inferential reading, mental math, scientific reasoning in TPD	Training Centres, Education Review Office	Every 2 years
13. Monitor training implementation	Observe post-training performance and collect feedback	Training Centres, Provincial Government	After each TPD Cycle
14. Integrate assessment in SIPs	Make NASA/NARN recommendations part of SIP and budgeting	Local Governments	Annual Planning
15. Establish M&E systems	Classroom observation, data tracking, sharing forums	Local Governments	Quarterly
16. Mobilize resources for schools	Allocate funds for digital tools, subject resources, infrastructure	Local Governments	Annual Budget Cycle
17. Leadership development	Organize leadership workshops for headteachers	Local & Provincial Governments	Biannually
18. Strengthen school-community ties	Fund and support joint activities with parents and youth clubs	Local Governments	Annually
19. Budget for training programs	Allocate budgets for training as per assessment priorities	Provincial Government	Annual Budgeting

20. Enforce in-service learning	Make in-service learning mandatory; track teacher development	Provincial Government	Immediate and Ongoing
21. Use data for planning	Develop provincial data portal; link data with policy planning	Provincial Government	Within 1 Year
22. Share best practices	Host provincial-level virtual/in-person sharing based on findings	Provincial Government	Every 6 Months
23. Communicate assessment results	Disseminate brochures, videos, digital flyers on findings	Education Review Office	Within 3 Months of Report Release
24. Develop diagnostic tools	Create tools for identifying learning gaps in literacy/numeracy	Education Review Office	Annually
25. Performance audit	Audit schools for implementation of recommendations	Education Review Office	Annually
26. Research on implementation barriers	Investigate challenges and propose solutions	Education Review Office	Initiate within 1st Quarter of Fiscal Year
27. Align teacher selection & licensing	Include NASA/NARN insights in teacher exam frameworks	Education Review Office, TSC	Within 1 Year
28. National policy reform	Mandate integration of assessment results into all policies	MoEST, CEHRD	Within 2 Years
29. Accountability mechanisms	Develop M&E frameworks for all stakeholders	MoEST, CEHRD	Within 1 Year
30. Invest in digital infrastructure	Increase investment in ICT for teaching/learning access	MoEST, Ministry of Finance	Annual Development Plan
31. Revise TPD policy	Link TPD with assessment needs and teacher gaps	MoEST, CEHRD	Within 1 Year
32. Inter-ministerial coordination	Work with health, finance, labor sectors on learning barriers	MoEST, MoF, MoH	Ongoing

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Annex I

Matrix 1: Analysis of NASA/NARN Subject-Wise Results Against Recommendations

This matrix focuses on the first objective: Analyzing NASA/NARN subject-wise results with recommendations for grades 3, 5, 8, and 10 across different years.

Grade & Year	Subject	NASA/NARN Result Summary	Recommendation ID (or Summary)	Recommendation Text (Full)	Actions/Suggestions
	Reading				
	Numeracy				
	Math				
	Nepali				
	Science				
	English				

Grade & Year	Subject	NASA/NARN Result Summary	Recommendation ID (or Summary)	Recommendation Text (Full)	Actions/Suggestions
Grade 3 (Year X)	Math				
Grade 3 (Year X)	Language				
Grade 5 (Year Y)	Science				
Grade 8 (Year Z)	Social Studies				
Grade 10 (Year A)	English				

Matrix 2: Assessment of Education Policies and Programs Against NASA Results and Recommendations

This matrix addresses the second objective: reviewing education policies and programs of the Government of Nepal (SSDP, SESP) and assessing them against NASA results and recommendations across federal, provincial, and municipal tiers.

NASA /NARN	SSRP/SESP/SSDP/
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recommendations (year)
Grade
1.
2.

Annex II

Interview Questions for Teachers

Background Information:

Subject:

Teaching Grade:

Awareness of NASA and NARN results

- How familiar are you with NASA and NARN study and results?
- Have you ever received orientation (participate in dissemination event) on NASA, NARN findings and Dissemination?
- How do you incorporate findings from NASA and NARN into your teaching and learning process?
- What changes have you made in your classroom based on NASA/NARN reports to improve student learning outcomes?

Teaching & Planning:

- How do you incorporate diverse student needs (gender, language, etc.) into your lesson planning?
- What teaching methods do you find most effective for student engagement, and why?
- How do you integrate digital technologies into your classroom?
- What strategies do you use to actively engage and motivate students?

Assessment & Feedback:

- How do you assess student learning (both formative and summative)?
- How do you provide constructive feedback to students?
- How do you use student performance data to adjust your teaching?
- What strategies do you employ to support low-performing students?

Classroom & School Environment:

- How do you address language barriers for students?
- What measures do you take to prevent bullying in your classroom/school?
- How do you ensure all students have access to necessary learning materials?

Professional Development & Collaboration:

- How far you get opportunity to participate in Professional Development Training workshop?
- How do you integrate knowledge from professional development into your teaching?

- How do you communicate student progress with parents, and encourage their involvement?

Research & Improvement:

- Have you conducted any action research, and how did you implement the findings?
- What are the key gaps you see between community and institutional schools, and how can they be minimized?

Annex III

Head Teacher Interview Guideline

Background Information (To be filled by Interviewer):

Awareness of NASA and NARN results

- How familiar are you with NASA and NARN study and results?
- Have you ever received orientation (participate in dissemination event) on NASA, NARN findings and Dissemination?
- How do your teachers incorporate findings from NASA and NARN into your teaching and learning process?
- What changes have you made from NASA/NARN reports to improve student learning outcomes?

School Planning & Management:

- How do you align school plans with national/regional education goals, and monitor their implementation?
- How do you allocate resources to support academic planning?
- How do you manage the operational calendar, considering local ecological factors?

Stakeholder Engagement:

- How do you ensure collaboration among teachers, parents, and the SMC/PTA?
- What challenges do you face in engaging parents, and how are they addressed?

Teacher Monitoring & Development:

- What indicators do you use to evaluate teacher performance, including attendance and punctuality?
- How do you support underperforming teachers?
- How do you encourage and facilitate teacher participation in professional development?

Student Support & Well-being

- What anti-bullying policies are in place, and how are they enforced?
- What special support programs are provided for students from disadvantaged backgrounds?
- How do you address language barriers for students, including the medium of instruction?
- How do you incorporate Extra-Curricular Activities (ECA) to enhance student development?

- How do you collect and respond to students' perceptions about the school environment?

Technology & Resources

- What technology tools are available, and how are they effectively used by teachers and students?
- How do you promote digital literacy and online safety among students and teachers?
- Are textbooks and learning materials sufficient; how do you address shortages?

Assessment & Improvement

- How do you analyze student performance data and use it to improve teaching?
- How do you share result analysis findings with teachers and parents?
- How do you collaborate with local and provincial governments for school improvement?
- Have you visited model schools to observe best practices, and how are these shared?

Annex IV

Local Education Officer Interview Guideline

Background Information (To be filled by interviewer):

Assessment & Policy

- How familiar are you with the findings of NASA and NARN assessments?
- How have NASA/NARN results influenced local education policies and planning?
- What specific measures are taken to address gaps identified in these reports?
- How are local education policies developed, and who is involved? How are they aligned with NASA/NARN recommendations?

Planning & Coordination

- How does the local government facilitate academic planning in schools?
- What mechanisms ensure alignment with national and provincial education policies?
- How do you facilitate coordination among schools, parents, teachers, SMC/PTAs, and students?

Monitoring & Evaluation

- How do you monitor and supervise school activities to ensure quality education?
- What indicators are used to evaluate teacher performance, and how is feedback utilized?

Equity & Inclusion

- What policies/programs improve enrolment and retention of marginalized children?
- How do you address barriers like low parental education and economic constraints?
- What strategies reduce disparities between community and institutional schools?
- How does the local government ensure equitable access to quality education for all?

Resource Management & Development

- What are the key investment priorities for school education in your locality?
- How does the local government support school resource development and management?
- What training and capacity-building programs are provided for teachers and headteachers?

Specific Interventions: (For Karnali, Sudurpachim and Madesh Province Only)

- Are there special interventions to improve performance in Mathematics and English, particularly in regions like Karnali, Sudurpaschim, and Madhesh?

Annex V

Province Level Officers Interview Guideline

1. How familiar are you with the findings of NASA and NARN assessments in your province?
2. How have this assessment results influenced provincial education policies and planning?
3. What specific interventions have been implemented to address the learning gaps identified in these assessments?
4. What mechanisms are in place to monitor and supervise the implementation of education programs at the local level?
5. How do you ensure that local governments conform with provincial and national education standards?
6. What challenges have you faced in monitoring local-level education activities, and how are they addressed?
7. How do you coordinate with local governments (municipalities/rural municipalities) to ensure alignment in education policies and programs?
8. What strategies are in place for effective coordination with the federal Ministry of Education?
9. Are there any inter-provincial collaboration mechanisms to share best practices in education?
10. What policies or programs exist to improve access and quality of education for children from marginalized communities (Dalit, Janajati, Madhesi, Muslim, economically disadvantaged)?
11. Are there special scholarships, incentives, or community engagement programs for these groups?
12. What are the key investment priorities for school education in your province?
13. How are budget allocations determined, and what criteria are used to prioritize certain programs?
14. Are there specific investments in teacher training, infrastructure, or digital learning?
15. What measures are taken to ensure equitable distribution of resources across different municipalities?
16. What additional support is provided to schools in Karnali, Sudurpaschim, and Madhesh to address regional disparities?
17. Are there targeted programs (e.g., remedial classes, teacher incentives, infrastructure development) for these regions?

Annex VI

Federal Education Officers Interview Guideline

1. How are the findings of NASA and NARN assessments utilized in federal education policy formulation? Could you mention any recent policy changes based on these results?
2. How does the federal government address regional disparities in education quality? Does there any special budget allocations for the Karnali, Sudurpaschim, and Madhesh provinces?
3. What policies and programs ensure equitable access for children from low socio-economic backgrounds and low educated parents?
4. Are there nationwide parent awareness programs to improve home-based learning environment?
5. What strategies are used to increase enrollment and reduce dropout rates, especially in marginalized, ethnic and geographically back warded communities?
6. Is there any reform in the policy on teacher recruitment based on the results of NASA and NARN? (subject teachers for basic levels, availability of mathematics teachers...)
7. Is there any reform in the national policy regarding professional development teachers and headteachers?

Annex VII
FGD Guideline for Teachers
Background Information

Name of school: Date: Teaching Level:

<i>Teacher</i>	<i>Gender</i>	<i>Age</i>	<i>Experience</i>	<i>Teaching subject</i>	<i>Qualification</i>
<i>A</i>					
<i>B</i>					
<i>C</i>					
<i>D</i>					
<i>E</i>					
<i>F</i>					
<i>G</i>					

Theme 1: Awareness of NASA and NARN studies

- Discuss how familiar teachers are with NASA and NARN studies and results.
- How do these assessments influence their teaching strategies?

Theme 2: Planning and Implementation

- Share experiences on effective learning design (including instructional strategies, instructional materials, assessment and feedback)
- What challenges do teachers face in implementing plan into classroom instruction?
- Use of differentiated instruction (gender, language minorities, cognitive level and marginalized community)
- Medium of instruction (monolingual or multilingual classroom?)

Theme 3: Communication and Collaboration

- Communication with parents regarding their children's learning performance.
- Methods to increase roles, responsibility and accountability of parents in child's learning.
- Collaboration with the colleagues, head teachers and SMC/PTA members regarding the teaching and learning process.

Theme 4: Resource Management and Remedial Strategies

- Accessibility of textbooks and reference materials, special provision for disadvantaged group, and remedial strategies for targeted students.

Theme 5: Professional Development

- Participation in the professional development activities (training, workshop and conferences)
- Involvement in the research and publication
- Transformation of skills into classroom (observation and challenges).

Annex VIII

Survey Questionnaire for Teachers (NASA Focused)

Group A Personal Information

Name... Gender: Male () Female () Qualification: B. Ed. of less () Master and above ()

Name of School:

Location of school (Province): Geographical location: Hill () Mountain () Terai ()

Teaching experience (in years): Teaching level: class 1-5 () class 6-8 () class 9-10 ()

Teaching Subject: English () math () Nepali () Science () or (Others :mention).....

Group B Instructional activities related information

Based on the statements in the table, please tick (√) on appropriate option which is appropriate for you (SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree)

SN	Statements	SD	D	N	A	SA
	Planning					
1.	I prepare lesson plans in advance and align them with curriculum objectives					
2.	I incorporate diverse learning needs into lesson planning					
3.	I adjust lesson plans based on student progress and feedback					
	Student Engagement					
4.	I use interactive teaching methods to engage students					
5.	My classroom discussions encourage student participation					
6.	I promote collaborative learning through group activities					
7.	I use real-life examples to help students relate to the subject matter					
8.	I encourage students to ask questions and express opinions					
	Teaching Methods					
9.	I employ student-centered teaching approaches					
10.	I incorporate inquiry-based and problem-solving strategies in lessons					
11.	I adapt my teaching methods to meet student needs					
12.	I use a variety of instructional approaches (visual, auditory)					
13.	I incorporate project-based strategies in lessons					
	Use of Materials					
14.	I frequently use teaching materials in my instruction					
15.	I integrate digital resources and technology in my teaching					
16.	I incorporate visual aids and manipulatives to support learning					
17.	Students have access to relevant textbooks and reference materials					
18.	My school provides adequate teaching-learning resources					

	<i>Assessment and Feedback</i>					
19.	I check homework regularly and provide feedback					
20.	I provide constructive feedback that helps students improve					
21.	I give individual attention to students struggling with concepts					
22.	I use a variety of assessment methods (formative, summative, peer assessment).					
23.	My assessments align with learning objectives and curriculum standards					
24.	I use alternative assessments (projects, portfolios) to evaluate students					
25.	I modify my teaching strategies based on students achievement					
	Bullying					
26.	My students feel safe from bullying in school					
27.	I intervene when bullying incidents occur in my classroom or other time					
28.	My school has clear policies to prevent bullying					
29.	There are mechanisms for students to report bullying					
30.	I foster positive and supportive peer relationships among students					
	Action Research					
31.	I engage in research to improve my teaching strategies					
32.	I implement research findings in my instructional practices					
33.	My school encourages teachers to conduct action research					
34.	I collaborate with other teachers on research projects					
35.	I use research to address learning gaps in my classroom					
	Instructional Language					
36.	Guardians advise me to use English as instructional language					
37.	I use local language in my instructional activities					
38.	I provide language support to students who struggle with instruction					
39.	I effectively manage bilingual/multilingual instruction					
	Result Analysis					
40.	I give feedback to the students based on their achievement in different tests					
41.	I discuss assessment results with students to support their learning					
42.	My school conducts result analysis at different levels (class, subject, school)					
	Professional development					
43.	I regularly participate in professional development programs					
44.	I receive training on innovative teaching strategies					
45.	My school provides mentoring programs to support my development					
46.	Training improves my teaching efficacy					

47.	I receive training to overcome subject-related teaching difficulties					
	Parents' Involvement					
48.	Parents are actively involved in their children's learning					
49.	My school regularly communicates with parents regarding student progress					
50.	Parent-teacher meetings are held frequently					
51.	I regularly communicate with parents for their children's progress					
	Regularity of Teachers and Students					
52.	I maintain regular attendance in school					
53.	My students attend classes regularly					
54.	My school has measures to address student absenteeism					
55.	Punctuality is maintained by both teachers and students					
56.	My school's policies promote regular attendance					
	Major Issues in Teaching Subjects					
57.	I face challenges in teaching my subject effectively					
58.	My school provides subject-specific teaching resources					
59.	My students struggle with key concepts in my subject					
60.	My school supports teachers in addressing subject-related challenges					
	Subject-Related Tools					
61.	I have access to subject-specific tools (calculators, lab equipment, educational software)					
62.	I effectively use subject-related tools in my teaching					
63.	My students are trained in using subject-related tools					
64.	My school invests in modern teaching tools					
65.	Technology is integrated into my subject teaching					
66.	I frequently use learning portals like CEHRD learning portal					
67.	I am habitual to use AI tools in my instructional activities					

Annex IX

Survey on Implementation Practices of NARN

[All maths and Nepali Teachers from Grade 3]

Group A Personal Information

Name (Optional): **Gender:** () Male () Female

Qualification: () B. Ed. of less () Master and above **Name of School:**

Location of school (Province): **Geographical location:** () Hill () Mountain () Terai

Teaching experience (in years):

Teaching Subject: () math () Nepali

Group B Instructional activities related information

Based on the statements in the table, please tick (√) on appropriate option which is appropriate for you

SN	Statements	Strongly Agree	Disagree	Neutral	Agree	Strongly agree
A	Early Grade Reading and Numeracy					
1.	Our school has taken specific actions to improve reading fluency in early grades.					
2.	Numeracy improvement programs (e.g., arithmetic, currency counting) are regularly conducted.					
3.	Students' reading comprehension is monitored regularly.					
4.	Students are assessed orally in numeracy to gauge conceptual understanding.					
5.	Our school has taken specific actions to improve reading fluency in early grades.					
B	Learning Environment					
6.	Our school has equitable learning environment for students					
7.	There are accessible reading materials for students in classrooms.					
8.	We involve parents to support reading and numeracy at home.					
9.	Students are encouraged to do homework and read at home.					
10.	We discourage bullying activities inside and outside the school.					

C	Leadership and Teacher Development					
11.	The headteacher has received leadership training in the past two years					
12.	Teachers are trained on strategies for early-grade reading and numeracy					
13.	The headteacher's leadership positively impacts student performance					
14.	The headteacher has received leadership training in the past two years					
D	Instruction and Assessment Practices					
15.	We use student-centered teaching and learning approaches					
16.	Students can get enough time to participate in reading activities.					
17.	We use real-life examples to promote numeracy skills of students.					
18.	We use continuous assessment system to assess students.					
19.	We provide feedback on each task done by the students					
20.	We modify our teaching strategies based on students' performance.					
E	Technology and Student Habits					
21.	Students frequently use mobile phones/tablets for non-learning purposes.					
22.	Technology use among students is properly guided and monitored.					
F	Parental Engagement					
23.	Parents regularly check on their children's reading and homework					
24.	Parents visit school to discuss their child's learning progress.					
25.	Students who receive family support perform better in reading and numeracy.					