National Education Assessment 2024 - Grades III and VI Report

bcsea

Bhutan Council for School Examinations and Assessment
Ministry of Education and Skills Development
Royal Government of Bhutan, 2025

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This report is a testament to Bhutan's commitment to educational excellence through evidence-based practices and collaborative partnerships.

Foreword

The Royal Government of Bhutan remains deeply committed to strengthening the quality and equity of education in the country. As part of this effort, the National Education Assessment (NEA) serves as a critical tool to monitor student learning outcomes, understand the experiences of students and teachers, and inform data-driven policy decisions.

The first NEA cycle in 2021 marked an important milestone in Bhutan's education system, introducing large-scale, competency-based assessments at grade III in Dzongkha Reading, English Reading, and Mathematical Literacy. For the first time, student performance was reported using scale scores and proficiency levels based on Item Response Theory (IRT), enabling more accurate and meaningful tracking of student progress. The findings from the NEA 2021 led to key reforms across the education sector, including enhanced teacher training, targeted support for disadvantaged learners, improved infrastructure, and greater school-community engagement.

The second NEA cycle, conducted in 2024, builds on these foundations by extending the assessment to both grades III and VI. It provides valuable insights into the progress made since the first cycle, establishes new baselines for upper primary learners, and highlights areas requiring continued attention to ensure inclusive and equitable learning for all.

I commend BCSEA for its leadership in implementing the NEA, and thank all educators, students, and partners for their contributions. This report is a vital resource for guiding future strategies to improve student learning and strengthen our education system.

Minister
Ministry of Education and Skills Development

Foreword

The Bhutan Council for School Examinations and Assessment (BCSEA) is pleased to present the National Education Assessment (NEA) 2024 report, marking a significant milestone in our collective journey to advance the quality and equity of education in Bhutan. This competency-based assessment, first undertaken in 2021, represents a paradigm shift in how we measure learning outcomes, moving beyond traditional knowledge recall to evaluate students' higher-order thinking skills and real-world application abilities in Dzongkha, English, Mathematics, and Science.

As the second national assessment of its kind, the NEA 2024 builds on this foundation by extending coverage to both grades III and VI, providing essential baseline data across two key stages of learning. The findings offer valuable insights into student performance and highlight differences across regions, school types, socio-economic backgrounds, gender, and teaching practices.

The rigorous methodology was developed in close collaboration with international experts, particularly Cambridge University Press & Assessment (CUP&A), and thoughtfully adapted to reflect Bhutan's unique educational values rooted in Gross National Happiness (GNH). Its implementation has not only generated high-quality data but also strengthened national capacity in large-scale assessment, laying a strong foundation for ongoing improvement.

This achievement reflects the collective efforts of the Ministry of Education and Skills Development (MoESD), Dzongkhag/Thromde Education Offices, school leaders, teachers, and our international partners. Their support has ensured that the NEA is both technically robust and contextually relevant.

The NEA 2024 report serves four key purposes: (1) to inform education policy and planning through data-driven insights; (2) to identify areas needing targeted support and intervention; (3) to establish benchmarks for monitoring learning outcomes; and (4) to guide curriculum reforms and teacher professional development.

We are confident that the findings and recommendations in this report will contribute meaningfully to Bhutan's ongoing journey toward a more inclusive, equitable, and high-quality education system. The NEA represents more than an assessment; it embodies our shared commitment to nurturing capable, compassionate learners prepared for the challenges and opportunities of the 21st century.

Controller of Examinations
Bhutan Council for School Examinations and Assessment

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List of abbreviations

ACER	Australian Council for Educational Research
ASP	Annual School Plan
BCSEA	Bhutan Council for School Examinations and Assessment
CDEO	Chief District Education Officer
CRT	Constructed Response Task
CTEO	Chief Thromde Education Officer
CTT	Classical Test Theory
CUP&A	Cambridge University Press & Assessment
CWD	Children With Disabilities
DEO	District Education Officer
ECCD	Early Childhood Care and Development
EMIS	Education Management Information System
ESPIG	Education Sector Programme Implementation Grant
GNH	Gross National Happiness
GPE	Global Partnership for Education
HOD	Head of Department
ICT	Information and Communications Technology
IRT	Item Response Theory
IWP	Individual Work Plan
MCQ	Multiple-Choice Question
MoESD	Ministry of Education and Skills Development
NEA	National Education Assessment
NEAF	National Education Assessment Framework
NEP	National Education Policy
OECD	Organisation for Economic Cooperation and Development
PD	Professional Development
PISA	Programme for International Student Assessment
PPS	Probability Proportional to Size
RGoB	Royal Government of Bhutan
SD	Standard Deviation
SDG	Sustainable Development Goal

SEN	Special Educational Needs
SES	Socio-economic Status
SRS	Simple Random Sampling
STEM	Science, Technology, Engineering, and Mathematics
TEO	Thromde Education Officer
TIMSS	Trends in International Mathematics and Science Study
TLM	Teaching and Learning Materials
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation, and Hygiene
WLE	Weighted Likelihood Estimation

Chapter 1. Executive Summary

1.1. National Education Assessment

The National Education Assessment (NEA) is a triennial large-scale, competency-based assessment programme conducted in Bhutan by the Bhutan Council for School Examinations and Assessment (BCSEA) at grades III, VI, and IX in core school subjects. The NEA serves as a vital system-level diagnostic tool. It aims to monitor student learning outcomes, student wellbeing, and teacher experiences, to gather data evidence to inform policy, and to promote educational equality in Bhutan. Anchored in the National Education Assessment Framework (NEAF) (BCSEA, 2020) and aligned with Sustainable Development Goal 4 (SDG 4), the NEA reflects Bhutan's enduring commitment to quality, and to inclusive and contextually relevant education.

1.2. The purpose of the NEA

The first cycle of the NEA was conducted in 2021 on grade III students, assessing their literacy levels in three domains: Dzongkha Reading Literacy, English Reading Literacy, and Mathematical Literacy. This also marked the introduction of the first NEA cycle, in which student performance was reported based on scale scores generated using the Item Response Theory (IRT) and a set of proficiency levels for each domain was established. Both initiatives enable the main purpose of the NEA: to meaningfully track students' progression in each of these domains over time. Following the NEA 2021, BCSEA's recommendations led to system-wide improvements: such as enhanced support for disadvantaged learners; expanded Science, Technology, Engineering, and Mathematics (STEM) teacher training; better Water, Sanitation, and Hygiene (WASH) infrastructure; and stronger school-parent engagement. A 2024 feedback study supported by UNICEF confirmed widespread implementation of these measures, especially in literacy promotion and early learner support, but also highlighted ongoing challenges such as limited Dzongkha resources and unreliable rural connectivity.

The second NEA cycle, conducted in 2024, builds on the technical foundations and policy momentum of the NEA 2021. Furthermore, the scope was extended to include students and other related educational stakeholders from grades III and VI, with an increased sample of children with disabilities. Its objectives include continued tracking of progress in grade III performance, evaluating the impact of reforms and teacher development, and establishing baseline performance data and proficiency levels for grade VI, as well as examining educational equity across different student groups.

1.3. Data from the NEA 2024

The NEA 2024 collected two sets of data for grade III and for grade VI:

1. **Cognitive data:** Student performance data for Dzongkha Reading Literacy, English Reading Literacy, and Mathematical Literacy for grade III students, as well as

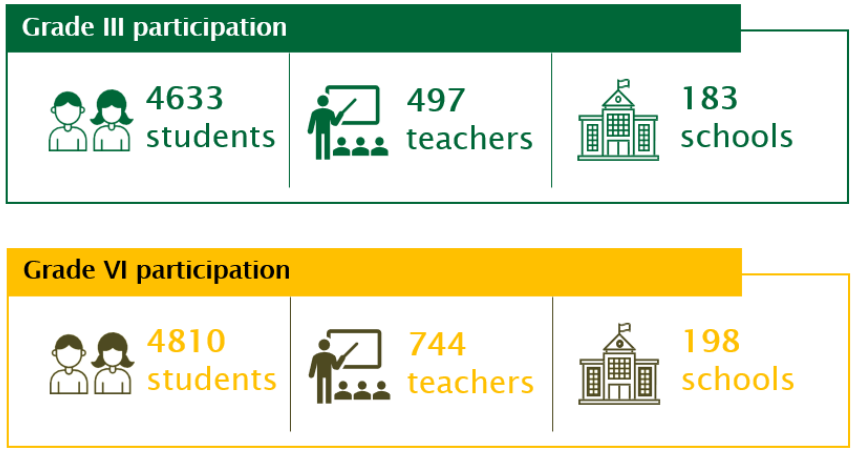
performance data for grade VI students for Dzongkha Reading and Writing Literacy, English Reading and Writing Literacy, Mathematical Literacy and Scientific Literacy.

2. **Contextual questionnaire data:** Response data from grades III and VI students relating to their school experience, physical and subjective wellbeing, home environment, time spent outside of school, and values. Additionally, data were also collected from teachers, principals, and Chief Thromde/District Education officers (CDEO, CTEO) on their job experiences in schools and their views on the school environment.

1.4. Participants of the NEA 2024

Overall, a total of 4633 (36.3%) grade III students from 183 schools, and 4810 (34.4%) grade VI students from 198 schools participated in the NEA 2024. This included 63 grade III Children with Disabilities[1] (CWDs), and 44 grade VI CWDs. Nearly all students participated in the cognitive tests. In each grade, participation covered 20 Dzongkhags and 4 Thromdes. The sample data was weighted appropriately in the analyses, taking their representation in the population into account for analysis and reporting, in order to accurately describe student performances and characteristics nationally.

Figure 1.1: Number of students, teachers, and schools who participated in the NEA 2024



For the contextual questionnaires, a total of 4582 students from grade III and 4717 students from grade VI completed the background questionnaire. Furthermore, a total of 4573 students from grade III and 4793 students from grade VI completed the value questionnaire (for more detail, see Table 1.1).

[1] In this context, CWDs refer to students with mild physical, sensory, intellectual, or developmental impairments who are enrolled in mainstream schools and provided with individualized assessment accommodations.

Table 1.1: Contextual questionnaire participation in the NEA 2024

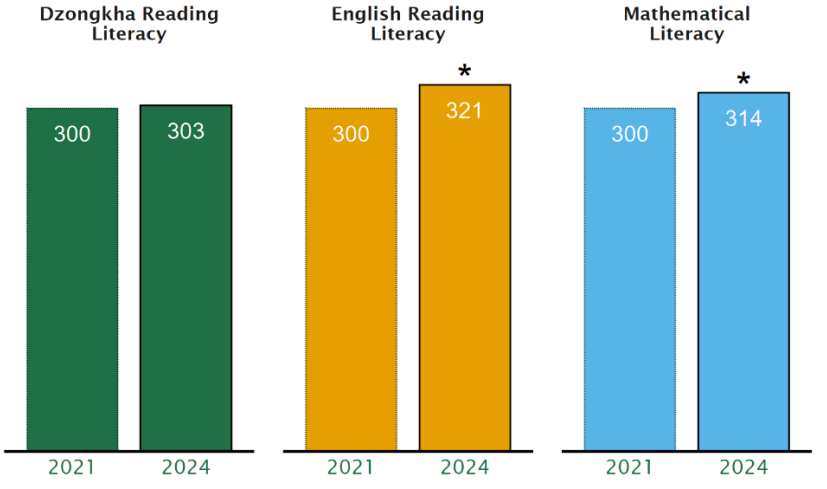
Questionnaire	No. of participants (grade III)	No. of participants (grade VI)
Student background questionnaire	4582	4717
Value questionnaire (Student)	4573	4793
Value questionnaire (Teacher)	4519 entries by teachers	4754 entries by teachers
Teacher background questionnaire	497	744
Principal questionnaire	222	
CDEO / CTEO questionnaire	24	

1.5 Grade III students' performance

1.4.1. Overall performance

Student performance in grade III **English Reading Literacy** and **Mathematical Literacy** significantly improved in the NEA 2024 compared to the NEA 2021 (see Figure 1.2). This suggests that the recent cohort of grade III students in Bhutan demonstrated higher levels of skills and knowledge in these domains than the grade III cohort of students three years ago. The largest improvement observed was in English Reading Literacy, where the percentage of students who achieved the minimum proficiency level rose to 96% (from 93% in the NEA 2021, see Figure 1.3). This was followed by Mathematical Literacy, where 95% of grade III students met the minimum proficiency level (an increase from 93% in the NEA 2021).

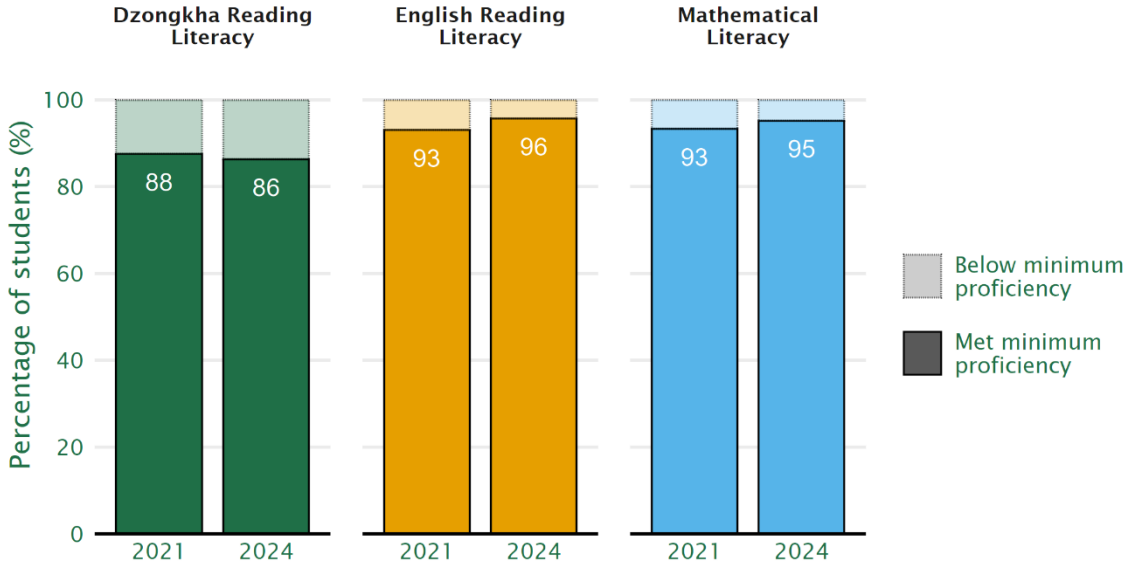
Figure 1.2: Mean scale score in grade III domains by NEA cycle



* Statistically different from the NEA 2021

In contrast, there is no evidence to suggest that grade III student performance in **Dzongkha Reading Literacy** saw similar improvement. The mean scale score for Dzongkha Reading Literacy in the NEA 2024 was statistically similar to that in the NEA 2021. The findings also suggest that proportionally fewer students met the minimum proficiency level set for grade III Dzongkha Reading Literacy in the NEA 2024 compared to the NEA 2021. In particular, 88% of students were found to perform above the minimum proficiency level in the NEA 2021, whereas only 86% did in the NEA 2024.

Figure 1.3: Percentage of students who met the minimum proficiency level in each grade III domain by NEA cycle



1.4.2. Variation across districts

Student performance across grade III domains showed notable variations between districts (see Table 1.2). Four districts – Dagana, Samdrup Jongkhar, Samtse, and Tsirang – consistently performed lower than others across all of the grade III domains. In contrast, Gelephu Thromde and Phuntsholing Thromde consistently outperformed all other districts in every domain. However, it is important to note that only one school from Gelephu Thromde participated in the NEA 2024, and the results should therefore be interpreted with caution.

The findings also reveal a contrasting pattern between the strengths and weaknesses across districts. Districts such as Lhuentse, Trashiyangtse, and Zhemgang performed strongly in Dzongkha Reading Literacy, but less well in English Reading Literacy and Mathematical Literacy. Conversely, Samdrup Jongkhar Thromde and Thimphu Thromde excelled in English Reading Literacy and Mathematical Literacy, but showed weaker performance in Dzongkha Reading Literacy.

Table 1.2: Mean scale score in grade III domains by district (within each domain, the five best-performing districts are highlighted in green, and the five lowest-performing districts are highlighted in orange)

District	Dzongkha Reading Literacy	English Reading Literacy	Mathematical Literacy
Bumthang	321	335	327
Chukha	292	324	320
Dagana	275	298	292
Gasa	285	315	306
Gelephu Thromde	351	425	411
Haa	302	322	312
Lhuentse	354	309	309
Mongar	306	286	291
Paro	298	321	311
Pemagatshel	281	317	312
Phuntsholing Thromde	329	350	334
Punakha	317	324	319
Samdrup Jongkhar	280	284	286
S.Jongkhar Thromde	326	352	329
Samtse	269	296	290
Sarpang	305	315	315
Thimphu	284	331	316
Thimphu Thromde	306	361	342
Trashigang	328	304	306
Trashiyangtse	331	305	302
Trongsa	322	323	318
Tsirang	274	295	293
Wangdue Phodrang	306	301	301
Zhemgang	333	320	315

1.4.3. Variation across subgroups

Across all of the grade III domains, student performance in English Reading Literacy tended to vary more between different subgroups of students, followed closely by Mathematical Literacy. Performance gaps do exist in Dzongkha Reading Literacy, but to a much smaller extent compared to the other domains (see Figure 1.4).

In the NEA 2024, we analysed performance gaps between genders, children with disabilities (CWD) and children without disabilities, students with and without ECCD participation, students with different family income levels, students with different levels of parental education, the language spoken at home, and students who had different school accommodation arrangements, school types, and school locations.

A large performance gap – specifically in English Reading Literacy and Mathematical Literacy

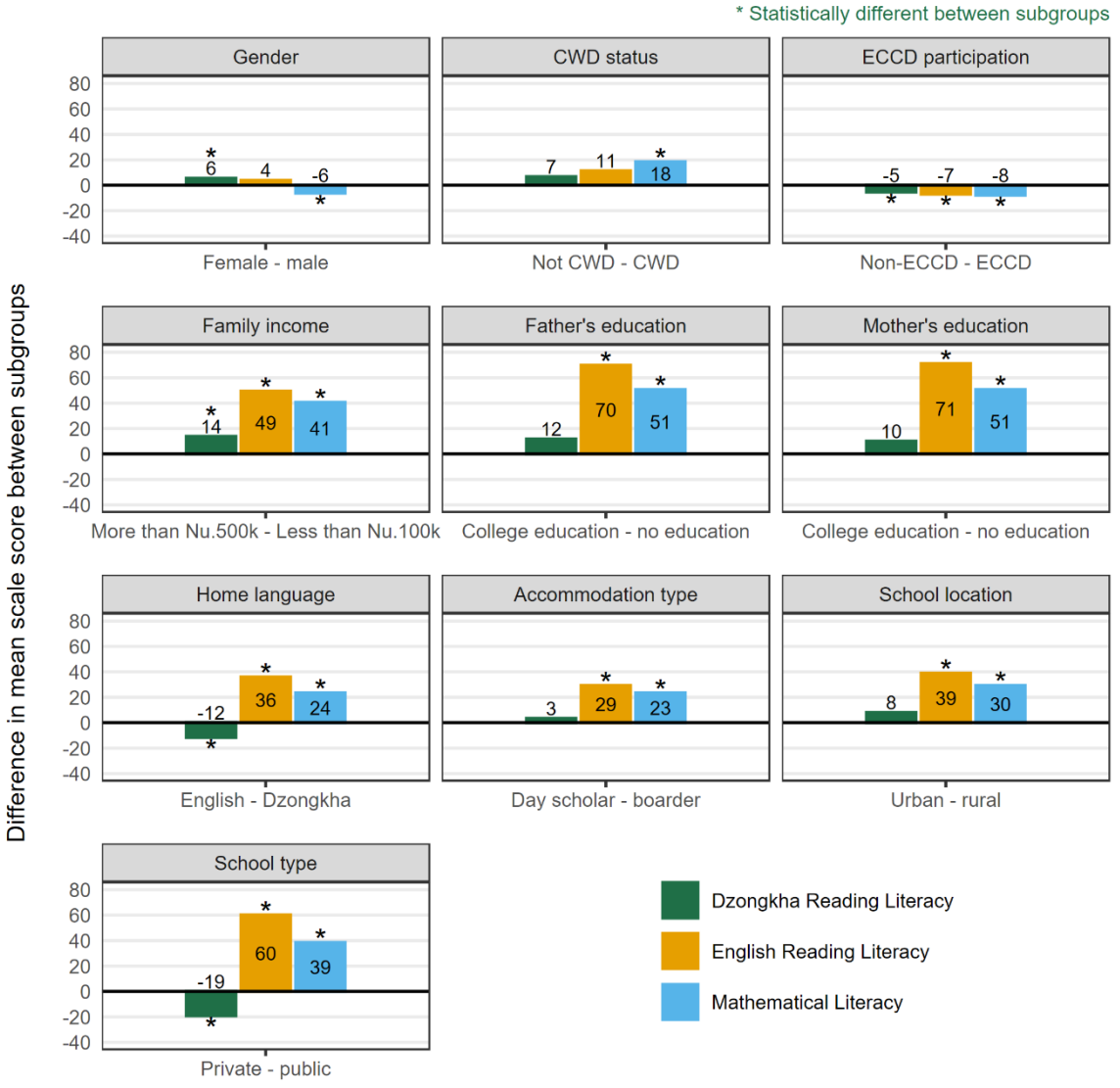
– was found between students with different family backgrounds, with students from higher-income families tending to outperform students from lower-income families, and students with college-educated parents tending to outperform students whose parents received a lower level of education or had no education.

Specifically for English Reading Literacy and Mathematical Literacy, moderate performance gaps were also observed between students who spoke different home languages and between those attending different types of schools. In particular, students who spoke English tended to perform better in English Reading Literacy and Mathematical Literacy than students who spoke Dzongkha and other languages at home. Furthermore, day scholars tended to outperform boarders, and students from urban and private schools tended to outperform students from rural and public schools, respectively.

In contrast, the reverse gap was evident in Dzongkha Reading Literacy, with private school students tending to underperform compared to public school students, and those who spoke English at home tending to perform less well relative to students who spoke languages other than English at home.

A comparatively smaller performance gap was observed between girls and boys, between students with and without disabilities, and between students with and without ECCD participation. Gender gaps were found mostly in Dzongkha Reading Literacy, where girls tended to outperform boys, and in Mathematical Literacy, where girls tended to underperform relative to boys. The performance gaps between students with and without disabilities were more consistent, in that the mean scores of students without disabilities were higher than students with disabilities across all domains. It was only in Mathematical Literacy that these differences were statistically significant. However, considering the sample sizes of children with disabilities were much smaller, statistical significance is harder to detect, even if such differences exist in practice. Lastly, students with ECCD participation tended to outperform students without ECCD participation across all three domains.

Figure 1.4: Differences in mean scores between subgroups of students in grade III domains



1.5. Grade VI students' performance

1.5.1. Overall performance

Given that this was the first NEA cycle for grade VI, mean scores for all of the domains were set at the national mean of 300. Mean scores from future NEA cycles can be compared with this baseline mean in order to track the progression of grade VI students in each domain. Another new development for this NEA cycle is that a set of proficiency levels were collaboratively developed for each grade VI domain by the various educational stakeholders in Bhutan. A set minimum level of proficiency, which grade VI students are expected to be able to demonstrate given their grade level, was also determined for each domain.

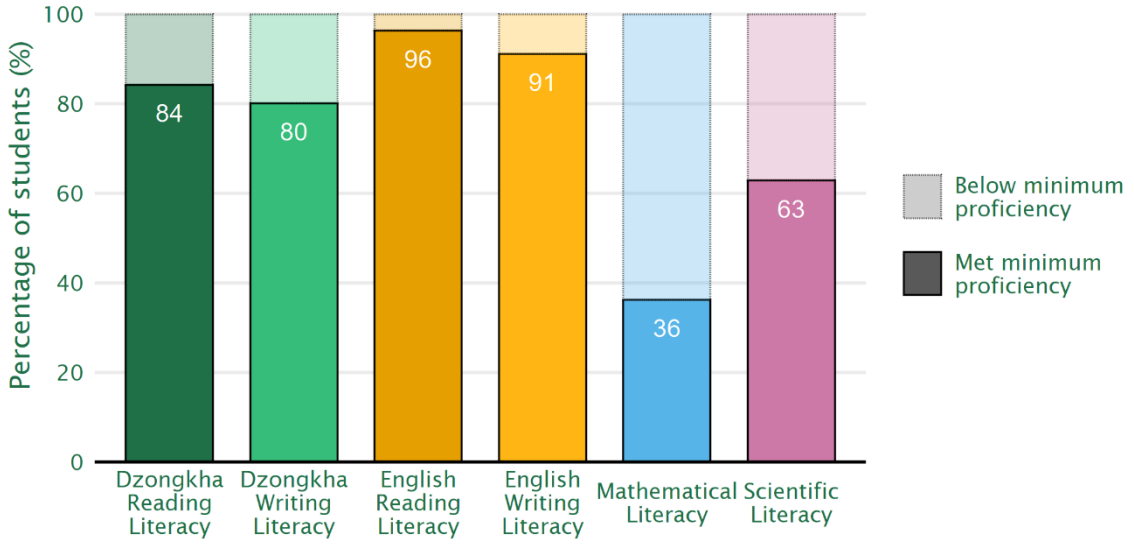
The results show that the percentage of grade VI students meeting these minimum

proficiency standards varied by domain (see Figure 1.5). Among these domains, English Reading Literacy had the highest proportion of students meeting the standard (96%), followed closely by English Writing Literacy (91%). In other words, the percentage of grade VI students not meeting the minimum proficiency level was 4% and 9% for English Reading Literacy and English Writing Literacy, respectively.

The percentage of students meeting the minimum proficiency level was slightly lower for the Dzongkha domains, at 84% for Dzongkha Reading Literacy and 80% for Dzongkha Writing Literacy.

In contrast, the percentages of students who demonstrated minimum proficiency in Mathematical Literacy and Scientific Literacy in the NEA 2024 were noticeably lower. For Scientific Literacy, 63% of the students met or exceeded the minimum proficiency level, but only 36% of students did for Mathematical Literacy. However, this does not necessarily imply that grade VI students performed worst in Mathematical Literacy. Rather, it indicates that this domain had the largest share of students whose performance fell below the expected standard set by educational experts in Bhutan for that domain.

Figure 1.5: Percentage of students who met the minimum proficiency level in each grade VI domain by NEA cycle



1.5.2. Variation across districts

Similar to the findings for grade III, student performance across grade VI domains showed notable variations between districts. In particular, the best-performing districts in Dzongkha Reading and Writing Literacy tended to be different to the districts who performed best in the

remaining domains (see

Table 1.3). For instance, Phuntsholing Thromde was among the five best-performing districts for English Reading and Writing Literacy, and Scientific Literacy, but was one of the five lowest-performing districts in Dzongkha Reading and Writing Literacy.

The opposite pattern – low performance in English, Mathematical and Scientific Literacy, but high performance in Dzongkha Literacy – was observed in districts such as Lhuentse and Mongar. This finding highlights the importance of tailoring educational policies to the specific strengths and weaknesses of each district.

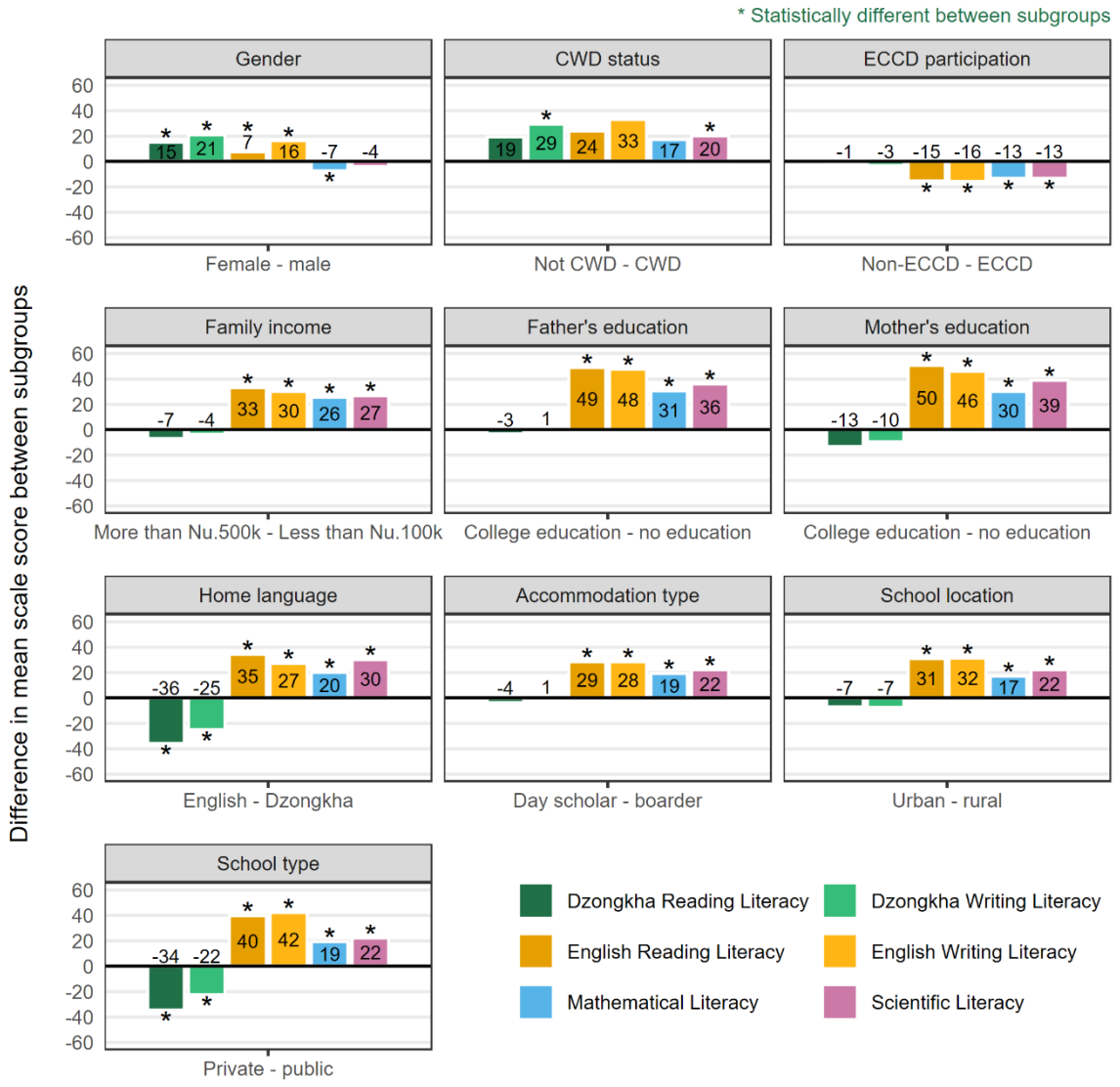
Table 1.3: Mean scale score in grade VI domains by district (within each domain, the five best-performing districts are highlighted in green, and the five lowest-performing districts are highlighted in orange)

District	Dzongkha		English		Mathematical Literacy	Scientific Literacy
	Reading Literacy	Writing Literacy	Reading Literacy	Writing Literacy		
Bumthang	320	313	303	301	302	300
Chukha	291	292	304	308	302	296
Dagana	296	289	291	292	307	304
Gasa	333	309	298	313	303	302
Gelephu Thromde	277	278	309	312	299	296
Haa	305	307	291	292	296	292
Lhuentse	340	344	280	295	292	291
Mongar	324	323	284	282	297	289
Paro	302	298	317	316	307	308
Pemagatshel	310	316	309	299	299	306
Phuntsholing Thromde	285	284	319	317	307	315
Punakha	317	307	302	309	312	303
Samdrup Jongkhar	297	297	274	271	276	279
S.Jongkhar Thromde	302	307	319	315	320	330
Samtse	273	277	286	282	291	292
Sarpang	296	303	297	299	305	301
Thimphu	300	294	298	285	279	292
Thimphu Thromde	291	293	324	325	309	314
Trashigang	327	333	294	299	300	299
Trashiyangtse	328	320	291	295	290	300
Trongsa	329	312	306	304	315	312
Tsirang	276	281	284	281	288	288
Wangdue Phodrang	320	320	289	295	309	296
Zhemgang	306	313	285	287	285	281

1.5.3. Variation across subgroups

Similar to the performance gaps observed in grade III domains, the performance gaps between different subgroups of grade VI students varied depending on the domains and background characteristics considered (see Figure 1.6).

Figure 1.6: Differences in mean scale scores between subgroups of students in grade VI domains



As with grade III, the largest performance gaps were generally observed in English Literacy (both reading and writing), particularly when comparing students with different family backgrounds (such as income levels, parental education, and home language) and school characteristics (including accommodation type, urban versus rural location, and public versus private schools). Specifically, students from higher-income families, with college-educated parents, who spoke English at home, attended urban or private schools, and were day scholars consistently outperformed their peers. Similar patterns of inequality were also evident in Mathematical and Scientific Literacy, though mostly to a lesser extent.

In contrast, the performance gaps for Dzongkha Literacy (both reading and writing) were very different. Students tended to, on average, perform similarly in Dzongkha Literacy regardless of their family backgrounds and the school they attended. The only two exceptions were as follows:

1. Students who spoke English at home tended to perform worse than those who spoke a language other than English at home.
2. Students who attended private schools underperformed compared to those who went to public schools.

Compared to grade III, the performance gaps among grade VI students were more pronounced between those with and without disabilities, and between those with and without ECCD participation. However, the patterns remained consistent: students who participated in ECCD outperformed their peers across all domains, while students with disabilities underperformed compared to those without disabilities. With regard to gender differences, girls tended to outperform boys in language domains (Dzongkha and English), while slightly underperforming in Mathematical Literacy. No statistically significant difference was found between girls and boys in Scientific Literacy.

1.6. Factors linked to strong student performance

Chapter 12 presents the findings of the regression analysis, which explores factors associated with the achievement of grade III and grade VI students. The key findings are summarised below.

1.6.1. Student factors

Teachers' evaluation of student values was associated with better student performance in all cognitive domains in both grades III and VI, after controlling for other student, family, and school factors.

Students who had repeated a grade showed lower performance in all grade VI cognitive domains and in English Reading Literacy and Mathematical Literacy in grade III, compared to students who had never repeated a grade. In addition, student gender was significantly associated with better performance in six out of the nine cognitive domains. Male students outperformed female students in Mathematical Literacy in both grades III and VI, and in Scientific Literacy in grade VI. In contrast, female students outperformed male students in Dzongkha Reading and Writing Literacy, as well as in English Writing Literacy.

Missing classes due to sickness was negatively associated with student performance in Dzongkha Reading and Writing Literacy in grade VI. Students who reported having missed classes due to sickness scored lower in the two Dzongkha domains, compared to students who did not miss classes due to sickness.

1.6.2. Family factors

Higher levels of father's education and the family's socio-economic status (SES) were associated with better performance in most cognitive domains, after controlling for other variables: students whose fathers had higher levels of education performed better in most cognitive domains, compared to students whose fathers had lower levels of education; similarly, students from families with higher SES outperformed students from lower-SES backgrounds.

Family engagement time was significantly associated with student performance in grade VI, specifically in English Reading and Writing Literacy, Dzongkha Reading Literacy, and Scientific Literacy: students who spent more time doing activities with their families outperformed students who spent less time with their families.

1.6.3. School factors

Students who attend public schools outperformed students who attend private schools in Dzongkha Reading Literacy in both grade III and VI, whereas students who attend private schools outperformed students who attend public schools in English Reading Literacy in grade III. Lastly, students who attend urban schools performed significantly better in English Reading Literacy and Mathematical Literacy in grade III, and in English Writing Literacy in grade VI, compared to students who attend rural schools.

1.7. Students' experience in and outside of school

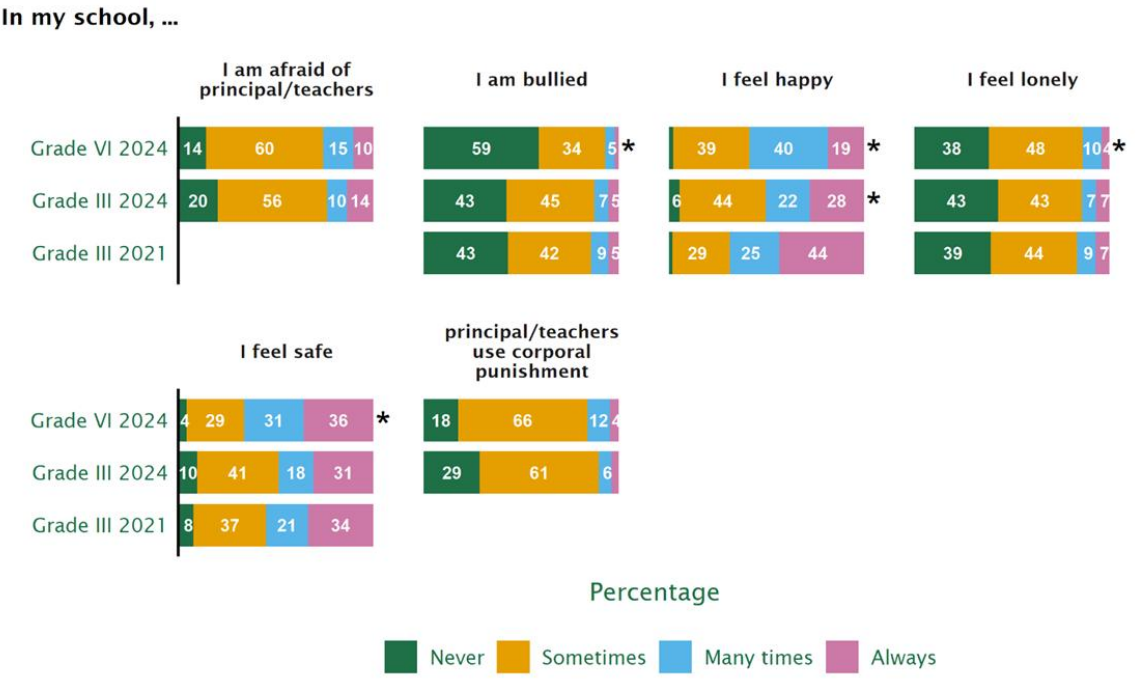
Chapter 14 to Chapter 16 present the findings collected from student questionnaires administered in the NEA 2024. These questionnaires relate to various aspects of the students' life and experiences inside and outside of school. The key findings for each aspect analysed are summarised below.

School physical and social environment: Most teachers, principals, and students reported that they had the equipment they needed in school and classes, with the exception of heating and cooling systems – only 60% of the students in both grades reported having access to these items. Grade III students in the NEA 2024 were somewhat less positive about some aspects of the physical environment in their school (such as access to clean drinking water) than was the case in the NEA 2021. More than half of the principals reported that they did not have health rooms or inclusive infrastructural facilities in the school. In addition, 46% of principals reported that teaching and learning materials (TLM) for students with disabilities were not available or in poor condition whilst a further 41% said the question was not applicable to them. Around 27–37% of principals reported that TLMs for the main subjects (i.e., Dzongkha, English, Mathematics, and Science) were not available or in poor condition in the school.

Student wellbeing: Students gave mixed responses regarding their wellbeing, for example to questions about whether they felt happy and whether they were ever lonely. Of particular

concern was the fact that both grade III and grade VI students were significantly less likely to say they were happy in 2024 than grade III students in 2021 (see Figure 1.7).

Figure 1.7: Student responses regarding their wellbeing at school



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Subject preference: No subject was overwhelmingly more likely to be chosen as a favourite or least favourite subject compared to others. The most common reason for a subject being selected as a student's favourite was that they find it interesting. The most common reason for a subject being selected as a student's least favourite was that they find it difficult to understand.

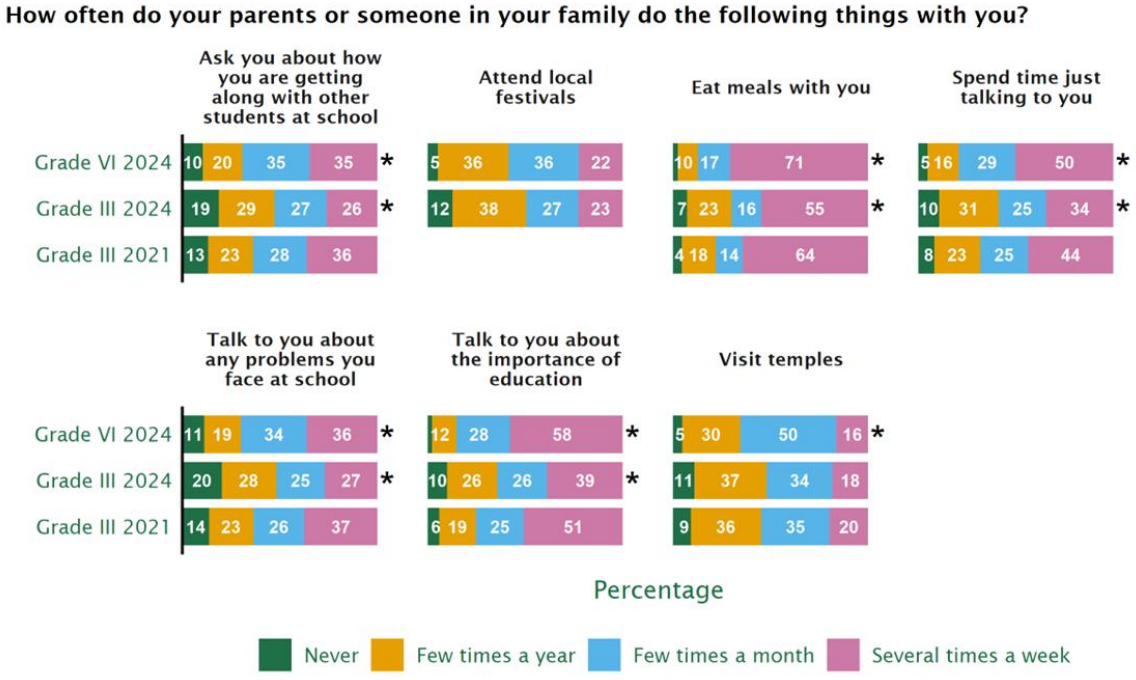
Activities outside of school: Students display a range of good habits outside school, with both reading and writing being very common activities for both grades. Since 2021, there have been significant reductions in the extent to which grade III students say they do self-study and play outdoor games. Similarly, there have been significant reductions since 2021 in the extent to which grade III students are involved in activities such as washing clothes and sweeping the floor. On average, around 20% of students in grades III and VI spent more than two hours per day playing digital games or using electronic devices such as mobile phones. Additionally, about 40% of grade VI students, and just over 30% of grade III students, reported spending at least one hour per day on social media.

Family life: Most students ate meals with their family several times a week and talked about various aspects of school with them. However, since 2021, the frequency of these conversations has significantly declined for grade III students (see Figure 1.8). Student

wellbeing at home, on the other hand, was very similar compared to the levels reported in 2021.

Illness: Most students (71% of grade III students and 75% of grade VI students) had missed classes due to illness over the past year.

Figure 1.8: Student time spent with parents and family



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Student values: Every value statement was given a high importance rating by students. However, many of these ratings were significantly (albeit only slightly) lower in 2024 than they had been in 2021. The largest drop was seen in the student's perceived importance of volunteering to help.

1.8. Teachers' experience in school

Chapter 17 and Chapter 18 present teachers' responses relating to their teaching practices and their experiences teaching at schools. The key findings for each aspect analysed are summarised below.

Cultivation of the nine student attributes: Teachers and principals felt their schools were making good progress in supporting the nine attributes and ratings tended to be very high across all statements.

Teaching practices: Teachers displayed strong confidence in using a range of assessment

practices and were clear on their learning intentions, although grade III teachers in 2024 rated some statements lower than in 2021, particularly 'My students do self-assessment' and 'I received adequate training on formative assessment'. Furthermore, teachers reported frequently using a wide range of learner-centred strategies and this practice was corroborated by students. In contrast, the least frequently-adopted approaches were the use of ICT resources in teaching and taking students outside the classroom to learn. Teachers also reported that their schools did not always have adequate teaching and learning materials.

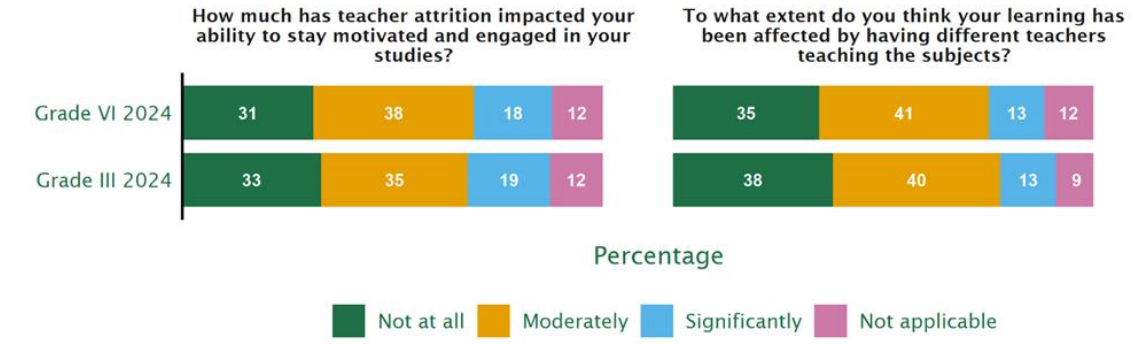
Teachers' reflective practices: Teachers displayed a moderate level of use of a range of reflective practices. They reported frequently seeking professional support from colleagues and collecting feedback from their learners as the most commonly-used reflective practices. In contrast, the least frequently-used reflective practices were reviewing lessons through video recordings and conducting action research. However, there was a significant increase in the extent to which grade III teachers said they used action research to improve their teaching.

Job satisfaction: Teachers gave positive ratings to most aspects of their work. In particular, they generally felt they had good relationships with both other staff and students in their school. Grade III teachers' ratings of the extent to which they are supported by parents and the extent to which their initiatives are recognised have significantly improved since 2021.

Professional development (PD): Teachers and principals reported moderately positive impacts for a range of different types of PD. The type of PD that teachers were least likely to have received was inclusive education, that was consistent with what principals reported. Compared to 2021, grade III teachers in 2024 gave significantly higher ratings to the impact of PD in action research.

Impact of teacher attrition: Teachers, principals, and students were concerned about the impact of teacher attrition on the quality of education (see, for example, students' views on this in Figure 1.9). Nationally, the teacher attrition rate was 3% in 2024, which was lower than most OECD countries.

Figure 1.9: Student views on teacher attrition affecting their studies



Note: Students were not asked about the impacts of teacher attrition in the NEA 2021 cycle.

1.9. Insights from Principals

Chapter 19 presents the findings from the principal questionnaire, on questions related to the school background, principals' attitude towards their profession, and their experience in school. The key findings for each aspect analysed are summarised below.

School background: Most principals indicated that the School Management Board meetings were helpful for overall school improvement, and that community involvement to maintain and upkeep school facilities had increased in 2024. Furthermore, principals reported a higher provision of mentoring programmes for teachers in 2024.

Principals' attitude towards their profession: Most principals felt they have good rapport with staff and students. However, there was a significant decrease in the extent to which principals agreed they had a good rapport with students and in the extent to which they felt their efforts resulted in positive student learning outcomes.

School environment: Principals reported that they had significantly better internet bandwidth in their schools in 2024.

Teacher behaviour: Roughly 1 in 4 of principals indicated issues with alcohol abuse or unjustified absence amongst teachers. Furthermore, roughly 1 in 3 reported they faced issues with teachers using abusive language. These proportions are similar to 2021.

Job satisfaction: Most principals reported being satisfied with their salary. However, overall salary satisfaction declined in 2024. Principals' salary satisfaction was similar across most demographic groups, but it was significantly lower in 2024 among males and those aged 41-50 years, relative to 2021. Furthermore, most principals felt proud to work in their profession and most of them were not considering a career change.

1.10. Insights from Chief District and Chief Thromde Education Officers

Chapter 20 summarises data from the questionnaire completed by Chief District Education Officers (CDEOs) and Chief Thromde Education Officers (CTEOs), focussing on their involvement in professional development (PD), supervision and monitoring practices, policy implementation, and planning and management processes.
The key findings for each aspect analysed are summarised below.

PD activities: CDEOs/CTEOs participated more frequently in PD programmes and provided increased mentoring support to principals compared to 2021. However, fewer reported delivering PD focussed on 21st-century skills or ICT, and fewer facilitated sessions for schools more than once per year. Overall, 14 out of 24 districts reported providing 20 hours of PD to all teachers in the past year.

Supervision and monitoring activities: Well over half of CDEOs/CTEOs reported conducting key supervision activities at least twice a year, except for lesson observations. Compared to 2021, the frequency of several activities, such as providing teacher feedback and observing lessons, had slightly declined.

Policy and planning: Five CDEOs/CTEOs (out of 24) disagreed that schools in their district had counsellors or vibrant non-formal education programmes. While budget utilisation was widely seen as efficient, many CDEOs/CTEOs expressed concerns about the adequacy, timeliness, and alignment of financial resources with educational goals.

Effectiveness of Individual Work Plans (IWPs) and performance management systems: The majority of CDEOs/CTEOs agreed that school performance management systems had positive impacts, especially on school leadership and educational programmes, although many disagreed about their ability to motivate teachers or encourage healthy competition.

Job satisfaction and experience: Most CDEOs/CTEOs felt supported by the system and actively contributed to it. One in four reported concerns regarding salary satisfaction.

1.11. Summary of recommendations

Following the NEA 2021, an initial set of policy recommendations was introduced based on its findings. In the current NEA cycle, notable improvements have been observed across several areas, suggesting that existing or past policies have had a positive impact. This section summarises key recommendations under four themes: academic performance, performance gaps, students' wellbeing and experiences, and the learning environment and resources.

1.11.1. Domain performance

Existing policies aimed at improving grade III students' English Reading and Mathematical Literacy should be maintained, as actions implemented following the NEA 2021 have contributed to measurable improvements in national student outcomes. In contrast, existing policies supporting Dzongkha Reading Literacy are recommended to be evaluated and strengthened, as these policies have not yielded national progress in Dzongkha Reading Literacy since the NEA 2021. Insights from the NEA 2024 highlight several considerations for tailoring future interventions to improve the national level of Dzongkha Reading Literacy:

- **Regional disparities**: Performance gaps in Dzongkha Reading Literacy are notably wider across districts than in other domains, indicating that some districts may benefit from targeted support.

- **School type and home language use**: Students from private schools and those who speak English at home tend to perform worse in Dzongkha Reading Literacy. Unlike other domains, socio-economic status, parental education, and school location (urban vs rural) show limited association with performance in Dzongkha Reading Literacy. These findings suggest two strategic avenues for improvement: (1) strengthen Dzongkha teaching and learning practices in private schools; (2) promote the use and acquisition of Dzongkha beyond the classroom, recognising that language familiarity outside school contributes significantly to literacy development.

Since grade VI performance was assessed for the first time in the NEA 2024, progress over time cannot yet be tracked. However, the results show that students were most likely to reach the minimum required standards English and Dzongkha Literacy, while Mathematical and Scientific Literacy had the lowest proficiency rates, indicating a need for targeted policy support in these domains.

1.11.2. Performance gaps

- **Children with disabilities (CWD):** Strengthen existing inclusive education strategies, as students with disabilities consistently underperform across all assessed domains.

- **Gender:** Continue targeted support for boys in language literacy, where they still underperform relative to girls –although the gap has narrowed since the NEA 2021, indicating positive policy impact. Girls, meanwhile, would benefit from additional support in Mathematical and Scientific Literacy, where they slightly underperformed compared to boys. Ongoing monitoring is recommended to evaluate policy effectiveness.

- **Early Childhood Care and Development (ECCD):** Expand access of ECCD programmes to more children in Bhutan, as students with ECCD tend to outperform their peers in all domains except Dzongkha.

- **School and family background characteristics:**
    - Dzongkha Literacy: Performance is most strongly linked to school type and home language. Students from private schools or English-speaking households tended to perform worse in Dzongkha.
    - Non-Dzongkha domains: Continue efforts to support public school students and those from low socio-economic backgrounds with English and Mathematical Literacy, as gaps are narrowing but still present. Reassess support for rural schools, as performance gaps have not significantly improved since the NEA 2021.

1.11.3. Students' wellbeing and experiences

While students and teachers continue to rate many aspects of the learning experience positively, several areas require policy attention:

- **Happiness:** The reported decline in happiness among grade III students since the NEA 2021 warrants further investigation, in order to validate the trend and identify contributing factors to inform appropriate policy responses.

- **Values:** Programmes to reinforce students' perceived importance of values should be strengthened, as ratings have declined since the NEA 2021, although they remain high.

- **Life outside of school**: Efforts should be made to understand the decline in the reported frequency of self-study, outdoor play, and conversations with parents, in order to prevent further decline. Additionally, clear guidelines for the safe and age-appropriate use of digital devices are recommended, as a significant proportion of students – 40% of grade VI and just over 30% of grade III students – reported spending at least one hour on social media daily. This may impact wellbeing and displace time for other activities such as self-study and outdoor play.

- **Health:** It is recommended that policy efforts to improve school health and hygiene infrastructure are strengthened, as at least 70% of students reported missing class at least once in the past year due to illness.

- **Bullying:** Anti-bullying measures should be strengthened through consistent monitoring, awareness programmes, and school-wide interventions, as no meaningful reduction in bullying has been observed since the NEA 2021.

1.11.4. Learning environment and resources

Questionnaire responses from teachers, principals, and CDEOs/CTEOs offer valuable perspectives that can inform policies related to the school environment, resource allocation, and management practices. While many aspects were rated positively by stakeholders, several areas have been specifically highlighted below for policy attention:

- **Resources for students with disabilities:** Expand inclusive education training for teachers and ensure the availability of suitable TLM for students with disabilities, as more than 80% of principals reported that such materials were either unavailable or not applicable.

- **Resource management**: Initiate further discussions to understand schools' needs for increased budget allocations and reassess current budget distribution, as 17 out of 24 CDEOs/CTEOs expressed concerns about the adequacy of funding to meet school requirements.

- **Teaching and learning materials (TLMs):** Strengthen policies to ensure the consistent provision and maintenance of high-quality TLM across all schools. Teachers reported that they did not always have adequate materials. Furthermore, 27–37% of principals reported that TLMs for the main subjects were not available or were in poor condition in the school.

- **Teacher attrition:** Direct policy attention to districts with high teacher attrition rates (above 5%) – specifically Tsirang, Phuntsholing Thromde, and Punakha – to identify underlying causes and implement targeted retention strategies.

- **Professional development (PD)**: Policy efforts should ensure equitable access to high-quality teacher PD across all districts, as only 14 out of 24 districts reported offering at least 20 hours of training to teachers.

Chapter 2. Introduction

2.1. The National Education Assessment in Bhutan

The Royal Government of Bhutan (RGoB) recognises education as a foundational pillar for national development, essential for shaping a cohesive, capable, and future-ready society. Guided by the vision of Gross National Happiness (GNH) and articulated through the National Education Policy (NEP, 2025), Bhutan's education system strives to harmonise academic excellence with holistic development, cultural preservation, and social equity. The NEP, drawing inspiration from the Royal Kasho issued on 17 December 2020, calls for a radical transformation of the education system that empowers learners with 21st-century competencies – such as critical thinking, creativity, collaboration, and digital fluency – while upholding Bhutanese values of *tha dam-tsig ley gju-drey* (sublime values of solemn devotion and trust based on interconnectedness, relationship and bonding, and cause and effect), which roughly translates to integrity, loyalty, and responsibility. As affirmed in the Royal Kasho, Bhutan must "radically rethink our education system and transform curriculum, infrastructure, classroom spaces, and examination structures".

In pursuit of these aspirations, the National Education Assessment (NEA) serves as a vital system-level diagnostic tool for monitoring learning outcomes, informing policy, and promoting equity. Conducted triennially by the Bhutan Council for School Examinations and Assessment (BCSEA), the NEA will evaluate student competencies at grades III, VI, and IX, producing robust and comparable data across time. Anchored in the National Education Assessment Framework (NEAF, 2020) and aligned with Sustainable Development Goal 4 (SDG 4), the assessment reflects Bhutan's enduring commitment to quality, inclusive, and contextually relevant education.

2.2. Recap of the first cycle (2021)

The first cycle of the NEA, conducted in 2021 on grade III students, marked a significant shift in Bhutan's education quality monitoring. It introduced large-scale, competency-based assessment at grade III level for Dzongkha Reading Literacy, English Reading Literacy, and Mathematical Literacy. This cycle adopted Item Response Theory (IRT) to report scale scores (mean = 300; standard deviation (SD) = 50) and established proficiency levels, allowing for meaningful interpretation of student performance and longitudinal tracking.

The NEA 2021 also marked a step forward in inclusivity by incorporating accommodation guidelines. This approach is fully aligned with the NEP's mandate to ensure "access to quality, inclusive education that supports diverse learning needs". It ensured equitable participation while integrating contextual questionnaires to capture information about factors influencing learning, including home, school, and community environments. The findings highlighted foundational gaps in literacy and numeracy, accentuated by COVID-19 disruptions, and prompted education stakeholders to prioritise early grade interventions and systemic reform.

2.3. NEA proficiency scales and levels

The NEA's proficiency scales, developed through psychometric modelling in 2021, serve as consistent reference points for interpreting student performance across cycles. Anchored in IRT methodology, these scales were standardised to a mean of 300 and SD of 50 for each assessed domain at grade III level.

Proficiency levels – such as Level 1 or Level 2 – describe what students typically know and can do at specific points along the scale. These levels are derived through item difficulty analysis and expert judgment. A student is considered to have reached a level when they demonstrate at least 50% mastery of that level's descriptors. Mastery at the top of a level (70–80%) indicates readiness to progress to the next.

The same proficiency framework has been retained for the NEA 2024, thereby ensuring continuity and enabling valid cross-year comparisons. This consistency also allows schools and education officials to use the scales for progress monitoring and policy calibration.

2.4. Rationale for the second cycle (2024)

The second NEA cycle, conducted in November 2024, builds on the technical foundations and policy momentum of the NEA 2021. It aligns closely with the NEP 2025's vision of "empowering 21st-century learning rooted in Bhutanese values … harmonising academic excellence with holistic wellbeing, cultural identity, and sustainable citizenship".

The objectives of this cycle are to:

- track any improvements in grade III performance over time by comparing the original 2021 grade III cohort to a new cohort in 2024
- use the comparison of the 2021 and 2024 cohorts to provide evidence on the impact of curricular reforms, early-grade interventions, and teacher Professional Development (PD)
- establish new national benchmarks for grade VI domains
- examine equity in learning outcomes across gender, location, income, and disability
- refine psychometric approaches and deepen contextual insights to support policy action.

Following the NEA 2021, BCSEA recommendations catalysed several system-wide responses. These included:

- enhanced support for disadvantaged learners
- expanded literacy and science, technology, engineering, and mathematics (STEM) teacher training
- improvements in water, sanitation, and hygiene (WASH) infrastructure
- refined classroom pedagogy
- more robust school-parent engagement.

A 2024 feedback study supported by the United Nations Children's Fund (UNICEF) found broad implementation of these recommendations, especially around promotion of reading and literacy, and early identification of struggling learners. However, the study also identified persistent systemic barriers, including limited access to Dzongkha learning resources and unreliable rural connectivity, which continue to hinder the equitable implementation of education reforms.

2.5. Expansion and technical enhancements in NEA 2024

The NEA 2024 introduced new domains and design improvements to deepen the system's understanding of student learning. In addition to the continued assessment of Dzongkha Reading, English Reading, and Mathematical Literacy at grade III, the 2024 cycle incorporated six domains at grade VI:

- Dzongkha Reading Literacy
- Dzongkha Writing Literacy
- English Reading Literacy
- English Writing Literacy
- Mathematical Literacy
- Scientific Literacy.

Test instruments were developed using the NEAF, encouraging application and real-world interpretation of the skills. Items were mapped to national curricula and reviewed for cultural relevance and accessibility. Technical support from Cambridge University Press & Assessment (CUP&A) helped ensure rigorous data analysis and psychometric validation – preserving scale continuity with the 2021 cycle. The contextual questionnaires were also refined, building on the NEA 2021 tools. Key updates included new variables on equity, integrity, and transparency within the nine student attributes; consolidation of staff roles (e.g., merging vice principal with principal); streamlined ministry agency categories; a terminology update from Special Educational Needs (SEN) to Children with Disabilities (CWD); the addition of a module on teacher attrition; and removal of COVID-19-related questions. These instruments, administered to students, teachers, principals, and education officers, provided essential insights into instructional environments, school leadership, and systemic enablers of learning.

2.6. Sample for NEA 2024

The NEA 2024 followed international best practices that have been incorporated in large-scale student assessments, such as the Programme for International Student Assessment (PISA), to achieve the target precision at a confidence interval of ±3.5 percent. The following sections cover the considerations made when drawing the sample size for the NEA 2024.

2.6.1. Target population

The NEA has been designed to investigate student learning achievements at the district level in Bhutan. The target population for the NEA 2024 was 12,760 grade III and 13,998 grade VI students, studying in both government and private schools. Before defining the target population of grade III and grade VI students in the NEA 2024, international (non-Bhutanese) students and students with severe functional and intellectual disabilities were excluded from the sample frame. This led to a total of 72 student exclusions (30 from grade III and 42 from grade VI). Thus, the sampling frame covers 99.8% and 99.7% of the entire student populations in Bhutan in grades III and VI respectively. Taking operational difficulties into account, further exclusions were considered, and two school-level exclusions were applied to define the final sampling frame for the NEA 2024:

- Schools with a class size of less than eight students.
- Schools located in areas which are geographically inaccessible and difficult to reach.

Reputed international large-scale assessments usually allow exclusion rates of up to 5% (OECD, 2012, page 59). The exclusion rate was 2.7% of the defined target population of the NEA 2024, meaning that the population coverage rate was 97.3%.

2.6.2. Sample design and method

The sample design for each district, i.e., Dzongkhag/Thromde, involved a two-stage cluster design which used a combination of two probability sampling methods. At the first stage, schools were selected using Probability Proportional to Size (PPS) sampling principles. This meant that the probability of selecting a particular school depended on the number of grade III and/or grade VI students enrolled in that school. At the second stage, the required number of students in each school, calculated as 34 for grade III and 28 for grade VI in the case of the NEA 2024, were selected using Simple Random Sampling (SRS). PPS sampling was based on grade III and grade VI enrolment data from the Education Management Information System (EMIS) for 2024, maintained by the Ministry of Education and Skills Development (MoESD). SRS was conducted according to class registers available in sampled schools.

2.6.3. Stratification

Stratification means classifying schools into similar groups according to selected variables, referred to as stratification variables. Two types of stratification were used in the NEA 2024 sampling design – explicit and implicit stratification.

Explicit stratification involves grouping schools into strata that would be treated independently from one another, as if they were separate school sampling frames. Implicit stratification involves sorting schools uniquely within each explicit stratum by a set of designated implicit stratification variables.

A total of four explicit strata was considered in the NEA 2024 sampling design: (1) private schools, (2) special institutes, (3) schools in small regions and (4) schools in regular regions. All of the schools in the first three strata were taken in the NEA 2024 sample, but small schools that met the small school exclusion standard (enrolment of less than eight students) were excluded. Schools belonging to the last stratum, regular regions, were selected as per the sampling design mentioned in section 2.6.2. Table 2.1 summarises the explicit strata used in the NEA 2024, and the sampling design applied in each stratum.

Table 2.1: Explicit strata and sampling design of the NEA 2024

Explicit stratum	Criteria	Total no. of schools	Sampling design
Private schools	School management	20	School level census, 34 for grade III and 28 for grade VI students from a school by SRS
Special institutes	Special education	2	School level census, 34 for grade III and 28 for grade VI students from a school by SRS
Schools in small regions (Haa, Gasa, Gelephu Thromde and Samdrup Jongkhar Thromde)	Size of region	20	School level census, 34 for grade III and 28 for grade VI students from a school by SRS 5 difficult schools dropped
Schools in regular regions (all districts except the four districts in small regions)	Size of region	437	School level by PPS, 34 for grade III and 28 for grade VI students from a school by SRS
Total		479	

The sampling of schools in regular regions involved the use of implicit strata, namely district and location (urban or rural) variables. This meant that schools in the sampling frame were sorted in a specific order according to the implicit strata. At the first level, the schools were organised by the district variable, followed by the location variable at the second level, and lastly by school size. The schools were sorted by their school size from low to high and then high to low through all possible combinations of the implicit strata (see OECD, 2012, page 63, for further details on how implicit stratification works).

2.7. Participation

A total of 4633 (36.3%) grade III students – including 63 with disabilities– participated, from a total of 183 schools. However, four students in grade III were dropped from analysis as it was not possible to identify their background characteristics within the sampling frame. This left a total of 4629 participants.

A total of 4810 (34.4%) grade VI students – including 44 with disabilities – participated, from a total of 198 schools. All participating students in grade VI were retained within all analyses.

In each grade, participation covered 20 Dzongkhags and 4 Thromdes. Depending on the size of the school, a minimum of 8 and a maximum of 34 students for grade III and a minimum of 8 and a maximum of 28 students for grade VI were randomly selected from each sample school. For the main analyses in this report, the sample data was weighted appropriately to ensure that the data represents the national population in terms of a range of characteristics (e.g., school type and location).

An attempt was made to make the NEA an inclusive learning assessment. Test accommodations were provided to students with disabilities to enable their participation in the assessment. This reflects Bhutan's efforts in building an equitable and quality assessment system for all students. The accommodations included the provision of test booklets in colour, sign language interpreters, scribes, time extensions, etc.

2.7.1. Cognitive test participation

The tables in this section summarise the distribution of participating schools and students in the NEA 2024. Note that a small number of students did not participate in all elements of the NEA, so numbers here may differ from those provided in above sections.

Table 2.2: Distribution of participants by district (grade III)

District	No. of schools	No. of students	Student (%)
Bumthang	5	126	2.7
Chukha	7	219	4.7
Dagana	9	211	4.6
Gasa	2	35	0.8
Gelephu Thromde	1	18	0.4
Haa	6	178	3.8
Lhuentse	4	74	1.6
Mongar	13	345	7.5
Paro	13	337	7.3
Pemagatshel	2	60	1.3
Phuntsholing Thromde	3	80	1.7
Punakha	3	102	2.2
Samdrup Jongkhar	7	166	3.6
Samdrup Jongkhar Thromde	2	66	1.4
Samtse	13	352	7.6
Sarpang	9	227	4.9
Thimphu	4	119	2.6
Thimphu Thromde	27	742	16.0
Trashigang	13	287	6.2
Trashiyangtse	8	134	2.9
Trongsa	5	115	2.5
Tsirang	8	197	4.3
Wangdue Phodrang	12	330	7.1
Zhemgang	4	106	2.3
Total	180	4626	100.0

Table 2.3: Distribution of participants by district (grade VI)

District	No. of schools	No. of students	Student (%)
Bumthang	6	159	3.3
Chukha	10	260	5.4
Dagana	9	223	4.6
Gasa	2	34	0.7
Gelephu Thromde	1	28	0.6
Haa	6	164	3.4
Lhuentse	2	35	0.7
Mongar	12	307	6.4
Paro	14	316	6.6
Pemagatshel	4	60	1.2
Phuntsholing Thromde	3	64	1.3
Punakha	5	134	2.8
Samdrup Jongkhar	9	223	4.6
Samdrup Jongkhar Thromde	2	56	1.2
Samtse	19	506	10.5
Sarpang	10	234	4.9
Thimphu	5	139	2.9
Thimphu Thromde	25	593	12.3
Trashigang	15	339	7.1
Trashiyangtse	7	159	3.3
Trongsa	5	131	2.7
Tsirang	7	156	3.2
Wangdue Phodrang	12	302	6.3
Zhemgang	8	184	3.8
Total	198	4806	100.0

Table 2.4: Distribution of participants by school management (grade III)

Management	No. of schools	No. of students	Student (%)
Public	161	4299	92.9
Private	19	327	7.1
Total	180	4626	100.0

Table 2.5: Distribution of participants by school management (grade VI)

Management	No. of schools	No. of students	Student (%)
Public	183	4556	94.8
Private	15	250	5.2
Total	198	4806	100.0

Table 2.6: Distribution of participants by location (grade III)

Area	No. of schools	No. of students	Student (%)
Rural	109	2589	56.0
Urban	71	2037	44.0
Total	180	4626	100.0

Table 2.7: Distribution of participants by location (grade VI)

Area	No. of schools	No. of students	Student (%)
Rural	128	3061	63.7
Urban	70	1745	36.3
Total	198	4806	100.0

Table 2.8: Distribution of participants by gender (grade III)

Gender	No. of students	Student %
Female	2314	50.0
Male	2312	50.0
Total	4626	100.0

Table 2.9: Distribution of participants by gender (grade VI)

Gender	No. of students	Student %
Female	2474	51.5
Male	2332	48.5
Total	4806	100.0

The vast majority of students completed an assessment in each subject. However, a small minority only completed some of the assessments. Table 2.10 and Table 2.11 detail the number of schools and students participating in assessments in each cognitive domain.

Table 2.10: Distribution of participants by domain (grade III)

Domain	No. of schools	No. of students
Dzongkha Reading Literacy	179	4603
English Reading Literacy	179	4555
Mathematical Literacy	179	4560

Table 2.11: Distribution of participants by domain (grade VI)

Domain	No. of schools	No. of students
Dzongkha Reading Literacy	198	4795
Dzongkha Writing Literacy	198	4790
English Reading Literacy	198	4794
English Writing Literacy	198	4786
Mathematical Literacy	198	4790
Scientific Literacy	198	4793

2.7.2. Questionnaire participation

Students were asked to complete background (or contextual) questionnaires to collect information on factors that may affect their learning, and a value questionnaire to assess their acquisition of the nine student attributes. A total of 4582 students from grade III and 4717 students from grade VI completed the background questionnaire. A total of 4573 students from grade III and 4793 students from grade VI completed the value questionnaire.

A total of 497 grade III teachers and 744 grade VI teachers – 4 from each sample school – were asked to participate in the teacher questionnaire. As was the case in 2021, data from the teacher questionnaire was not weighted prior to inclusion in analysis. Teachers also completed a value questionnaire, in which they provided their own rating of the nine attributes of each sampled student.

Table 2.12: Questionnaire participation

Questionnaire	No. of participants (grade III)	No. of participants (grade VI)
Student background questionnaire	4582	4717
Value questionnaire (Student)	4573	4793
Value questionnaire (Teacher)	4519 entries by teachers	4754 entries by teachers
Teacher background questionnaire	497	744
Principal questionnaire	222	

Chief District Education Officer (CDEO) / Chief Thromde Education Officer (CTEO) questionnaire	24

2.8. Purpose and structure of this report

This report presents the key findings from the 2024 NEA, covering both grade III and grade VI. It includes performance trends, subgroup analyses, contextual insights, and psychometric summaries. It is designed to:

- inform curriculum development and pedagogical strategies
- support targeted interventions for underserved learners
- strengthen national and district-level education planning
- guide future directions in assessment policy, teacher development, and equity strategies.

Ultimately, the NEA serves not just as a measurement exercise but as Bhutan's national commitment to building a learner-centred education system that equips all children with the skills, values, and resilience needed to thrive in a dynamic, interconnected world.

2.9. How to read this report

2.9.1. Comparisons between groups, significance testing, and effect sizes

Nearly every section of this report includes comparisons between subgroups of students, for example, between girls and boys, between students with disabilities and those without, between a given region and the national average, or between students (or teachers) in 2021 and those in 2024. To aid these comparisons, we will use significance testing and will also refer to effect sizes within our commentary. Significance testing, or testing for statistical significance, is about trying to identify gaps between groups that are unlikely to have arisen purely due to chance. That is, we wish to distinguish differences that could easily occur between particular samples of students, even if there were no real differences in the population(s) as a whole, from those where this would be highly unlikely to occur. Differences that are unlikely to occur by pure chance are labelled 'statistically different', 'statistically significant', or sometimes, for short, 'significant'.

To determine whether a difference is significant or not we need to choose a probability level (or p-value) to define it. For the purposes of this report, we use a cut off of $p<0.01$ to define significance. This means that differences we label as significant would have less than a 1 in 100 probability of being observed purely by chance. Sometimes authors use $p<0.05$ as a cut-off for significance. We have avoided this approach for the following reasons:

- We are performing a very large number of significance tests in this report. With a higher cut-off of $p<0.05$, we risk producing a large number of spurious

'significant' findings that are actually purely due to chance. After all, even with no differences at all at a population level we would expect 1 in 20 significance tests to give $p<0.05$. Using $p<0.01$ reduces the chances of us reporting spurious differences as significant.

- Early exploratory analysis showed that using $p<0.05$ for significance testing led to the highlighting of some extremely small differences. We felt that this made it harder for readers to identify the results that are worth focusing on.

Note that the report on the 2021 NEA used a cut-off of $p<0.05$ (rather than $p<0.01$) for significance. This may lead to some differences in the way we report results from the 2021 NEA whenever this is being done for comparison purposes.

Significance testing was based upon t-tests for any continuous outcomes (such as scale scores on the cognitive domains or average ratings on certain questionnaire items) and upon chi-square tests for categorical outcomes (such as the proportions of students or teachers giving each available response to a question in the questionnaire). All significance tests account for the clustering of responses within schools and for the weights assigned to observations.

Significance testing is purely concerned with whether differences between two groups could have occurred by chance. As such, with large samples, a small difference may appear to be statistically significant. For this reason, our discussions of differences between groups will also consider the absolute size of these differences alongside their statistical significance. Within these discussions it is sometimes helpful to think in terms of a formal 'effect size', which is defined as the gap between two groups expressed in terms of multiples of the overall SD. Within statistical literature, this effect size measure is known as Cohen's d (Cohen, 1988). As a rule of thumb, Cohen defined differences of around 0.2 SDs as small, those of about half a SD as moderate, and those of 0.8 SDs or more as large. However, these are guidelines rather than strict rules and should only be seen as a starting point for interpretation.

A final important point about significance testing is that, if the sample size of one of the groups being compared is small, even large differences between groups may not be statistically significant. This simply reflects that fact that, with small samples, we are more likely to see large fluctuations in results purely by chance. For this reason, within this report, we may see instances where large differences between certain subgroups are not statistically significant, and other instances where much smaller differences between different subgroups are.

2.9.2. Cognitive scales

This report presents learning outcomes using IRT-based scale scores. These results are on a continuous scale where, in the first year in which a domain is assessed using IRT within the NEA, the reported scale scores are each standardised to a mean of 300 and a SD of 50 nationally. Technical terms and scoring methodologies are explained in Appendix B for transparency and accessibility.

In addition to scale scores, for each domain within each grade, results are provided in terms of the percentage of students performing within each proficiency level. Descriptions of the kinds of tasks students can do within each proficiency level will be provided within the relevant domain-specific chapter. Note that a student at the top of a band is likely to have demonstrated all of the skills in that band, as well as all of the skills in the band below; a student in the middle of a band is likely to have demonstrated about half of the skills in that band, along with all of the skills in the band below.

Since the 2024 NEA is the first year in which grade VI performance was measured using an IRT scale, there will be some differences in the way results are reported compared to grade III. Further details are given below.

The analysis in each section compares the performance of students across subgroups such as gender, school type, location, and disability status. Both significance testing and considerations of effect sizes will form part of these comparisons, as described earlier.

Grade III cognitive reporting

For grade III, the 2024 NEA reuses the assessments from 2021. As such, scores are reported on the scale established within the 2021 NEA report. That is, they were defined to have a mean of 300 and a SD of 50 in the national 2021 population. Scale scores in 2024 are directly comparable to those from 2021. For example, a scale score of 305 in 2024 indicates the same level of performance as a scale score of 305 in 2021. Thus, since the abilities and performances of the national population changes over time, the mean scale scores in 2024 will differ from 300 and allow direct inferences about whether any improvements have occurred.

The 2021 NEA analysis was conducted by the Australian Council for Educational Research (ACER) using their own software. For the current NEA cycle, whilst we have broadly maintained their approach to using IRT in the analysis of the NEA, we have used different software and have made some minor methodological adjustments (further details of these adjustments are provided in Appendix B). For this reason, in order to ensure complete comparability between 2024 results and the 2021 NEA, we have recalculated all of the 2021 cognitive results using identical software and methodology to that used in 2024. This has not resulted in any major substantive changes that would affect the conclusions provided in 2021. However, it does mean that when we make comparisons to cognitive results from 2021, many of the numbers will not precisely match those provided in the report on the

2021 NEA (BCSEA, 2023a) although they will be close. A full set of results for the 2021 NEA, recalculated using the exact methodology from 2024, is provided in Appendix A of this report.

As well as making comparisons with 2021, the analysis will also explore gaps in performance between different subgroups of students and their proficiency levels.

Grade VI cognitive reporting

For grade VI, the 2024 NEA represents the first year in which performance is being measured using an IRT scale. As such, the reported scale scores are each standardised to a mean of 300 and a SD of 50 nationally.

Although it is not possible to make comparisons in performance between grade VI and earlier cycles of the NEA, the analysis will explore gaps in performance between different subgroups of students and report on the distribution of proficiency levels.

2.9.3. Questionnaire analysis

This report also includes analysis of the teacher and student questionnaires. Many of the 2021 questions have been repeated in the 2024 questionnaires. In these cases, our analyses (i.e., the figures displaying survey results) will include the data from 2021 for comparison. In nearly all cases, the figures we report for 2021 in the current report will exactly match those in the 2021 NEA report (and footnotes will explain any major exceptions where they occur). Note that, in some cases, the wording of questions was altered between 2021 and 2024. In these cases, comparisons with 2021 are not included.

In addition to comparisons to 2021, we have presented results from grade III and grade VI respondents within the same charts to allow comparison between the two grades.

Significance tests were conducted to compare:

- grade III students in both 2021 and 2024
- grade VI students in 2024 to grade III students in 2021 (that is, responses of the same cohort of students three years ago)
- grade III teachers in 2024 to grade III teachers in 2021
- grades III and VI principals in 2024 and grade III principals in 2021
- CDEOs/CTEOs in 2024 and 2021.

2.10. Limitations of the NEA 2024

The second cycle of the NEA marks a significant step forward in the development of national learning assessments in Bhutan, with its scope expanded to include students from both grades III and VI. However, as with any complex and large-scale undertaking, there are several limitations that readers should consider when interpreting the findings.

Representativeness of teacher samples: The NEA employed a complex survey design to ensure a representative sample of schools and students. Teachers, on the other hand, were sampled within the sampled schools, hence they were not explicitly sampled to represent teachers nationally. As a result, findings from the teacher contextual questionnaire cannot be generalised to reflect the average views of all teachers in Bhutan. That said, the responses from hundreds of teachers who taught the sampled grades still offer valuable insights into teachers' views and experiences.

Small sample sizes and statistical significance: Detecting statistically significant differences becomes more difficult when sample sizes are small, even if real differences exist. This is particularly relevant for smaller districts – Haa, Gasa, Gelephu Thromde, and Samdrup Jongkhar Thromde – or for specific subgroups, such as CWD. The absence of statistically significant findings in these cases does not necessarily imply the absence of meaningful differences. Future NEAs should consider oversampling in these small districts or subgroups of students. Statistical weighting can then be applied to correct for any overrepresentation, while the larger sample sizes would improve the reliability of estimates for these groups of students.

Comparability of scale scores across domains: As in the NEA 2021, each domain's scale score was developed independently. This means that average scores across domains are not directly comparable. However, comparisons of performance gaps or changes within domains remain valid, as one SD represents the same number of scale score points across domains. For example, a 15-point gender gap in Dzongkha Reading Literacy can be deemed to be a larger difference than a 7-point gap in English Reading Literacy.

Interpretation of factors linked to performance: While the NEA includes analyses to investigate factors associated with strong academic performance, these should not be interpreted as causal. Academic achievement is influenced by a wide range of interrelated factors, many of which are difficult to isolate statistically. For instance, while students from higher-income families tend to perform better, this does not mean that increasing family income alone will improve academic outcomes. Nonetheless, these analyses are valuable for identifying patterns and highlighting groups of students who may need additional support.

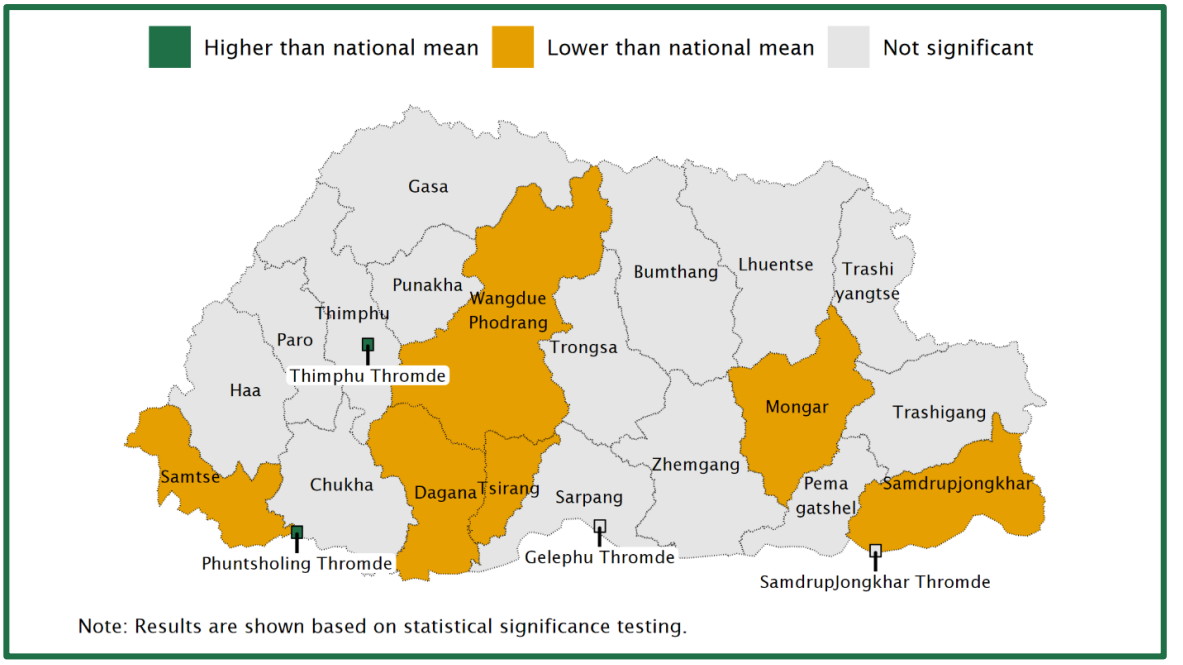
Rounding of values: The number values presented in tables and graphs are rounded for presentation purposes. As a result, totals may not always add up precisely, and differences or changes cited in the text may not exactly match those implied by the values in the visuals. This rounding is a standard reporting practice and does not reflect any inaccuracy in the underlying results.

2.11. Summary

The NEA 2024 report reaffirms Bhutan's enduring commitment to an education system that is equitable, inclusive, and future-ready – one that leaves no learner behind. Guided by the NEAF 2020 and aligned with the NEP 2025, this second cycle applies a consistent proficiency framework to enable valid, cross-cycle comparisons. With its expanded domain coverage, enriched contextual data, and longitudinal insights, the NEA supports evidence-informed decision-making at all levels of the education system.

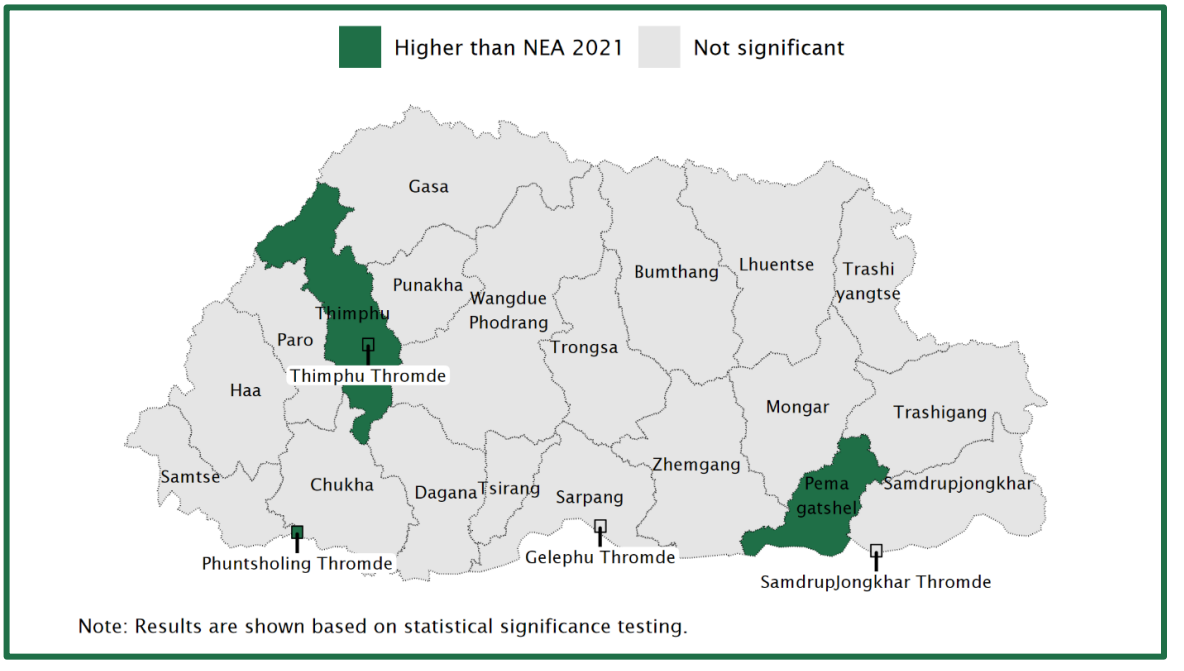
Chapter 3. Achievement of grade III students in English Reading Literacy

Summary 3.1: Student achievement in grade III English Reading Literacy by district (NEA 2024)



Note: Results are shown based on statistical significance testing.

Summary 3.2: Grade III English Reading Literacy progression compared to NEA 2021, by district



Note: Results are shown based on statistical significance testing.

3.1. Performance

This chapter presents the achievement of grade III students in the English Reading Literacy test of the NEA 2024. The discussion focusses on the analysis of student mean scores, percentile distributions, proficiency levels, group differences, and contextual factors affecting student performance. Additionally, where possible, student performance is compared to that of grade III students in the NEA 2021 to analyse the progression in this domain relative to the previous NEA cycle.

The NEA 2021 results in this report may differ slightly from those previously published (BCSEA, 2023a), mostly due to the stricter statistical testing in this NEA cycle (i.e., it used a lower significance threshold) and minor changes to the approach used to estimate abilities from the item response theory model, as explained in the introduction section. The NEA 2021 results presented in this report are consistent with the methodology used for the NEA 2024. In other words, despite minor updates in methodology for the NEA 2024, meaningful comparisons with the NEA 2021 results are still possible. Detailed results for the NEA 2021, produced using the NEA 2024 methodology, are available in Appendix A: Cognitive results for NEA 2021, grade III.

3.1.1. Mean scores

Table 3.1 shows the mean scores of all of the districts, as well as the national mean. In addition to the mean scores, the standard error and 95% confidence intervals are provided for statistical comparison. T-tests were conducted to check if the mean score of each district was statistically different from the national mean. The results of these tests, including the p-values, are provided in the table. As explained in the introduction section, all significance testing in this report uses a critical value of $p<0.01$. For this reason, there are some instances in the table where the 95% confidence interval does not include the national mean, but the difference is not highlighted as statistically significant.

Six districts – Dagana, Mongar, Samdrup Jongkhar, Samtse, Tsirang, and Wangdue Phodrang – had mean scores that were statistically significantly lower than the national mean. Among these districts, the lowest mean score was observed in Samdrup Jongkhar. The students from Samdrup Jongkhar performed lower than the national cohort by an average of 37 points (284 vs 321). This was followed closely by students from Mongar, who underperformed the national cohort of students by 35 points (286 vs 321). These differences are moderate-to-large in size. The mean scores for the other four districts were also comparatively low (in the range of 295 to 301), representing a 20-to-26-point difference compared to the national mean. These differences are moderate in size, considering they are roughly half a standard deviation (SD) in magnitude.

Table 3.1: Mean scores for grade III English Reading Literacy by district

District	Mean	Standard error	95% confidence interval	p-value	Statistically different than the national mean?
Bumthang	335	6.54	323 – 348	0.040	Not significant
Chukha	324	8.44	308 – 341	0.680	Not significant
Dagana	298	5.62	287 – 309	0.000	Lower
Gasa	315	9.33	297 – 334	0.587	Not significant
Gelephu Thromde	425	–	–	–	–
Haa	322	6.34	310 – 335	0.825	Not significant
Lhuentse	309	12.78	284 – 334	0.380	Not significant
Mongar	286	5.39	276 – 297	0.000	Lower
Paro	321	4.84	311 – 330	0.949	Not significant
Pemagatshel	317	3.75	309 – 324	0.396	Not significant
Phuntsholing Thromde	350	0.74	348 – 351	0.000	Higher
Punakha	324	6.05	312 – 336	0.621	Not significant
Samdrup Jongkhar	284	5.83	273 – 295	0.000	Lower
S.Jongkhar Thromde	352	12.09	328 – 376	0.012	Not significant
Samtse	296	3.73	289 – 304	0.000	Lower
Sarpang	315	7.10	302 – 329	0.506	Not significant
Thimphu	331	7.93	315 – 346	0.225	Not significant
Thimphu Thromde	361	4.68	352 – 370	0.000	Higher
Trashigang	304	7.25	289 – 318	0.031	Not significant
Trashiyangtse	305	10.05	285 – 324	0.127	Not significant
Trongsa	323	10.84	302 – 344	0.821	Not significant
Tsirang	295	6.81	282 – 309	0.001	Lower
Wangdue Phodrang	301	5.91	290 – 313	0.004	Lower
Zhemgang	320	11.64	297 – 342	0.939	Not significant
National	**321**	**2.92**	**315 – 326**	**–**	**–**

In contrast, two districts – Thimphu Thromde and Phuntsholing Thromde – had mean scores that were statistically significantly higher than the national mean. The students from Thimphu Thromde, in particular, scored 40 points higher than the national mean (361 vs 321), indicating that students in that district tended to perform a lot better than the national cohort of students. Students from Phuntsholing Thromde scored about 29 points higher, suggesting that they moderately performed better than other students nationally.

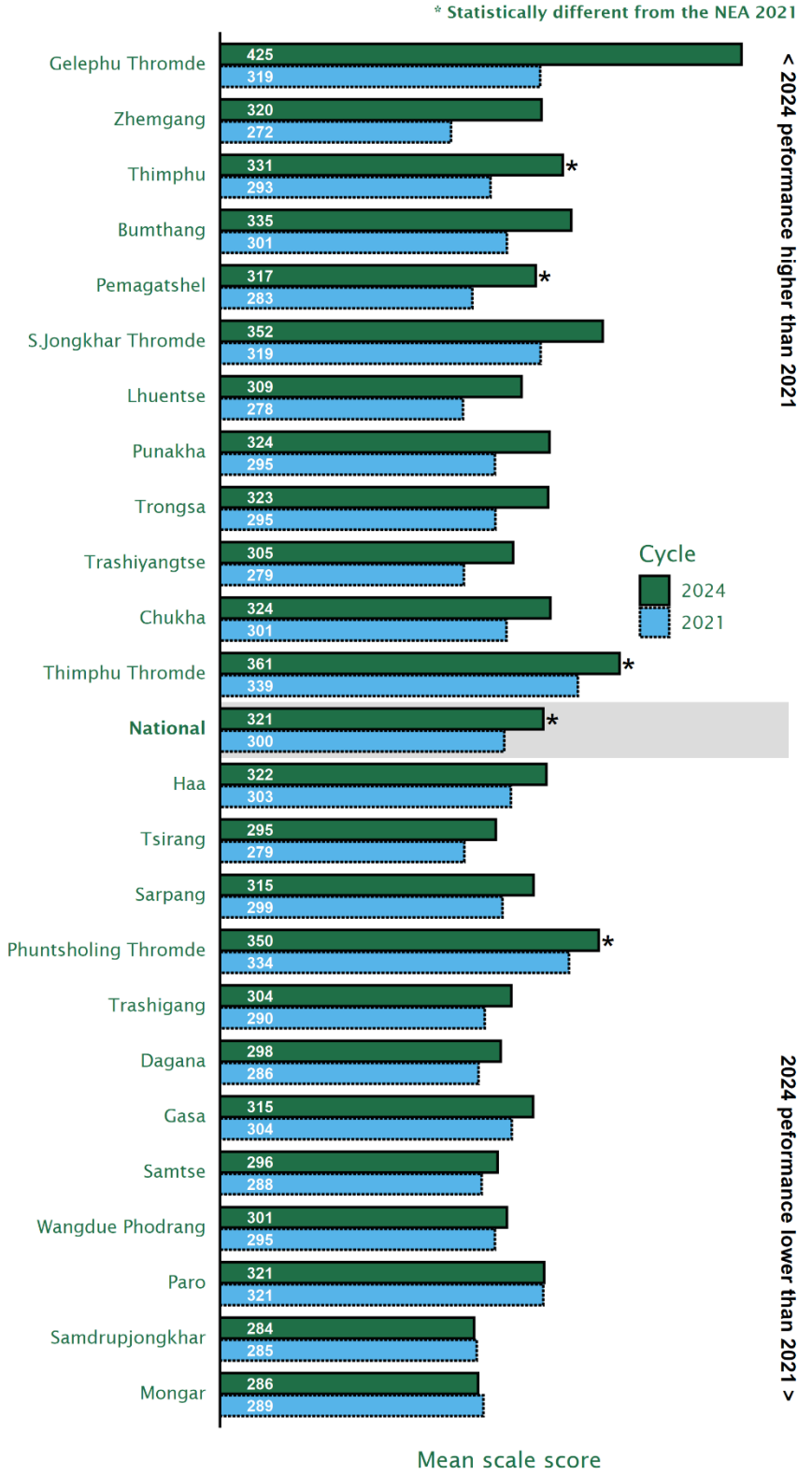
Note that even though Gelephu Thromde had a noticeably higher mean score, it was not statistically feasible to accurately quantify the uncertainty in this mean estimate as only one school participated. As such, significance testing was not conducted to compare the mean of this district to the national mean.

To understand grade III students' progression in English Reading Literacy, Figure 3.1 presents the mean scores for both the NEA 2021 and the NEA 2024 cycles, for each district and nationally. It also indicates districts where changes in the mean score between the two NEA cycles are statistically significant. Nationally, the mean score has noticeably increased by 21 points – from 300 (NEA 2021) to 321 (NEA 2024); this increment is statistically significant and is moderate in size. There were several districts showing statistically significant improvement in English Reading Literacy in this NEA cycle. The district with the largest improvement in mean score was Thimphu (by 38 points), which represents a practically moderate-to-large improvement. This is followed by Pemagatshel (34 points), Thimphu Thromde (22 points), and Phuntsholing Thromde (16 points). Pemagatshel's mean scores were more than 0.5 of a SD higher in the NEA 2024, compared to their performance in the NEA 2021, suggesting a moderate increase in performance. The increments for Thimphu Thromde and Phuntsholing Thromde were small-to-moderate in size.

Note that it is harder to detect statistical significance within individual districts than at national level, due to the small sample size. With this in mind, a lack of statistical significance in the change should not be seen as an indication that things have not improved within a district – only that we lack definitive evidence to be sure of this. However, even without this certainty, we can see that, in line with changes nationally, the majority of districts performed better in 2024 than in 2021.

As before, even though Gelephu Thromde's mean score also rose noticeably, it was not feasible to conduct a significance test to compare the means between the two NEA cycles as standard errors were deemed unreliable.

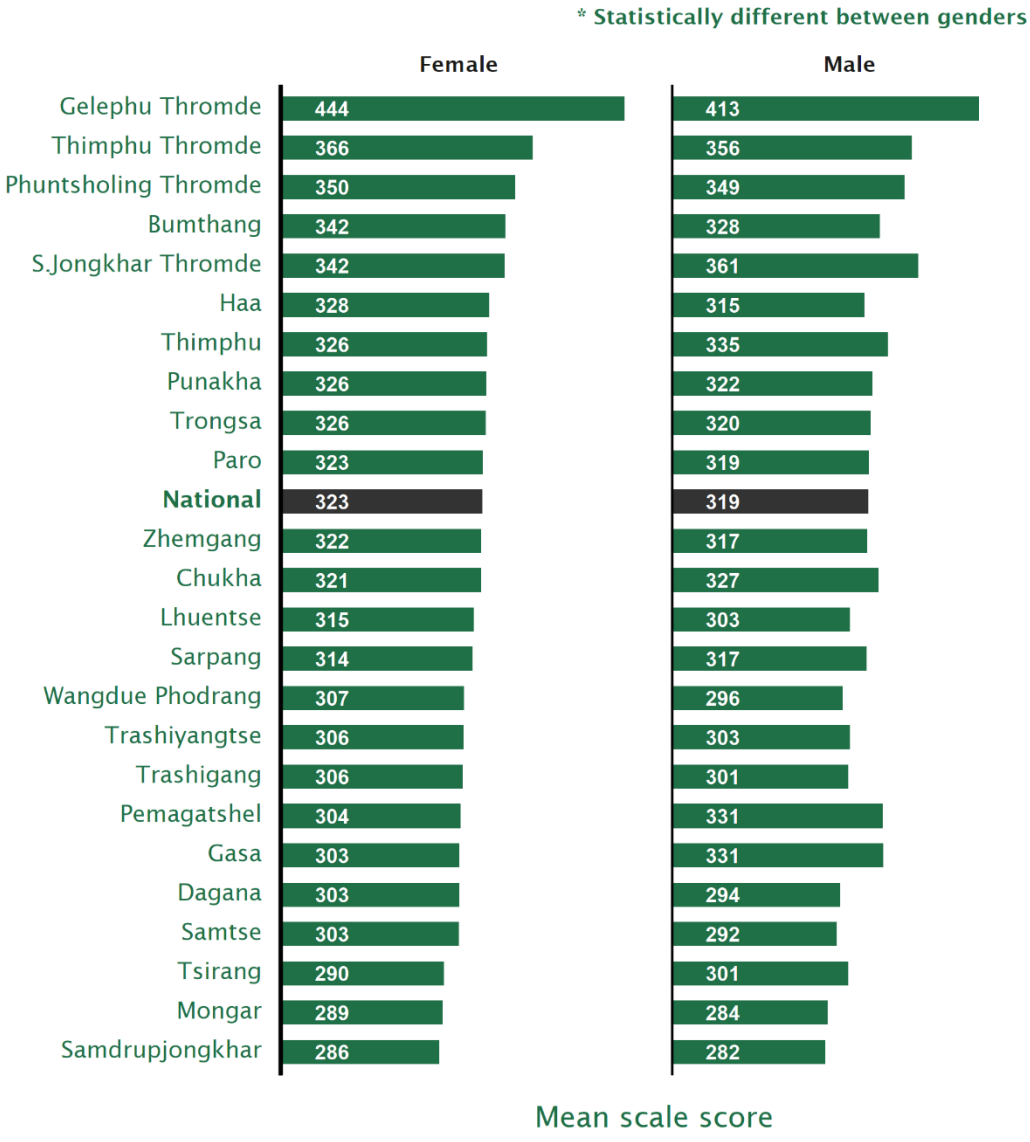
Figure 3.1: Mean scores for grade III English Reading Literacy by district and NEA cycle



Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

Figure 3.2 compares mean English Reading Literacy scores for boys and girls within each district. It shows that, nationally, boys underperformed relative to girls by an average of 4 points, but this difference is not statistically significant. Similarly, no district was found to have statistically significant gender differences though, in many districts, girls tended to outperform boys.

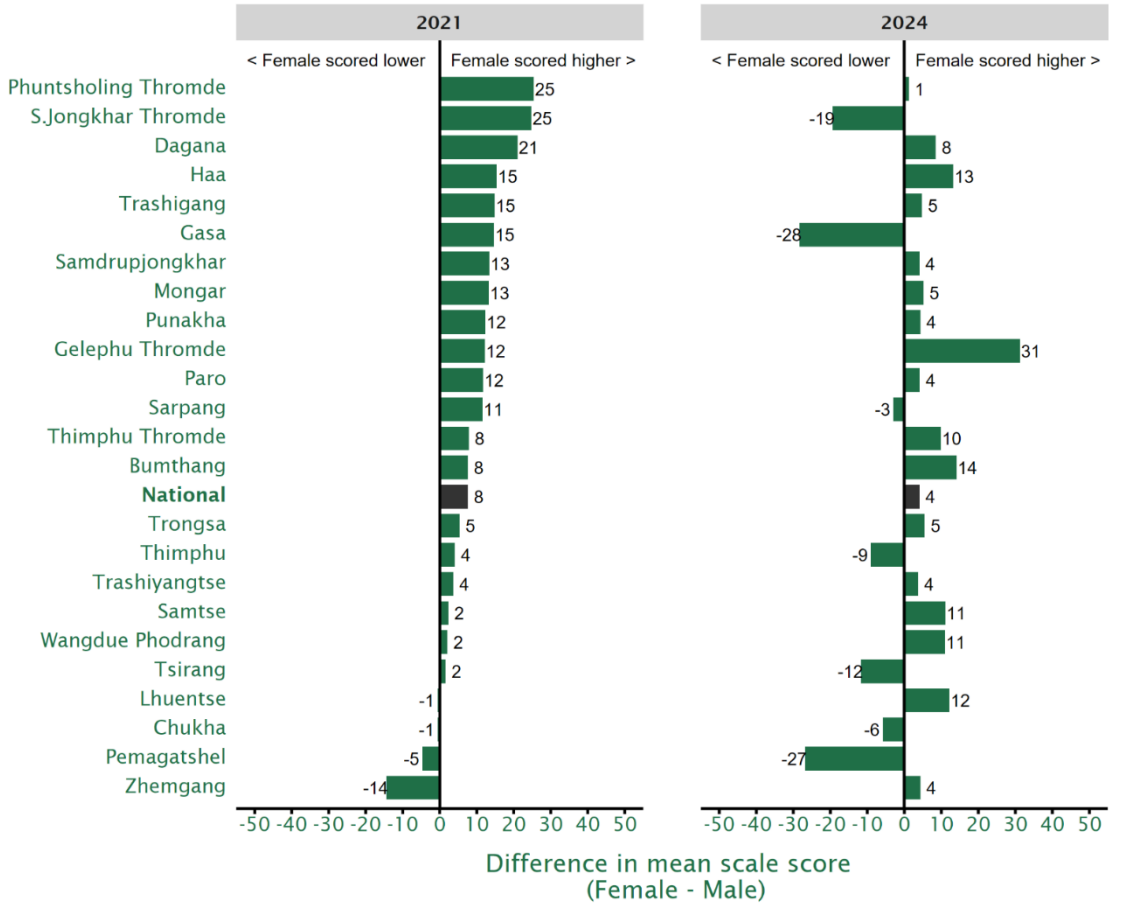
Figure 3.2: Mean scores for grade III English Reading Literacy by district and gender



Notes: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution. Significance tests were not carried out for Gasa, Gelephu Thromde, Pemagatshel, and S.Jongkhar Thromde because only one or two schools participated.

Figure 3.3 more clearly depicts the magnitude of these performance differences; it shows the differences in mean scale score, by NEA cycle, between girls and boys, both nationally and for each district. The left-hand panel indicates that, in the NEA 2021, girls outperformed boys in most districts. A broadly similar pattern can be seen in the right-hand panel, which reveals that, in the NEA 2024, girls tended to outperform boys in the majority of districts. However, it is important to note that the gender differences in each district were not statistically significant (see Figure 3.2).

Figure 3.3: Gender differences in grade III English Reading Literacy performance by district and NEA cycle



3.1.2. Percentile distributions

The percentile distribution illustrates how students' performance is spread across the range of possible scores. It helps indicate a student's standing relative to the rest of the group. In the context of the NEA, a percentile score represents the scale score below which a certain percentage of students fall. For example, the 5th percentile score in English Reading Literacy indicates that 5% of students scored below that value.

Percentile distributions also provide insight into the degree of variation in student performance. The range between the 25th and 75th percentiles – known as the interquartile range – captures the middle 50% of scores. Meanwhile, the range between the 5th and 95th percentiles includes 90% of all scores. A wider range suggests greater variability in performance among students, while a narrower range indicates more similarity.

Table 3.2: Percentile scores in grade III English Reading Literacy, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	242	281	312	360	427	79	185
Male	242	274	306	355	427	81	185
National	**242**	**281**	**312**	**355**	**427**	**74**	**185**

Table 3.2 presents the percentile scores and the ranges for the NEA 2024 English Reading Literacy test, both nationally and by gender. Nationally, 50% of students scored between 281 and 355, while 90% scored between 242 and 427.

When broken down by gender, the findings show that the distribution of scores for girls was very similar to that of boys. The interquartile range (25th–75th percentile) was 79 and 81 points, for girls and boys respectively. Similarly, the range between the 5th and 95th percentiles was the same for girls and boys, at 185 points.

Figure 3.4 illustrates the percentile scores, alongside the mean score, for both NEA cycles. It shows that the mean scores for both genders increased across the NEA cycles, with a more noticeable increase of 23 points in the boys' mean score: from 296 (NEA 2021) to 319 (NEA 2024). The increment in the girls' performance is smaller in comparison: by 19 points, from 304 (NEA 2021) to 323 (NEA 2024). Another observation is that the score distribution for both genders slightly shifted towards the top end, compared to the previous NEA cycle. This suggests that students at all levels of ability generally performed better in the NEA 2024, compared to students from the NEA 2021 cohort.

Figure 3.4: Percentile scores in grade III English Reading Literacy by gender and NEA cycle

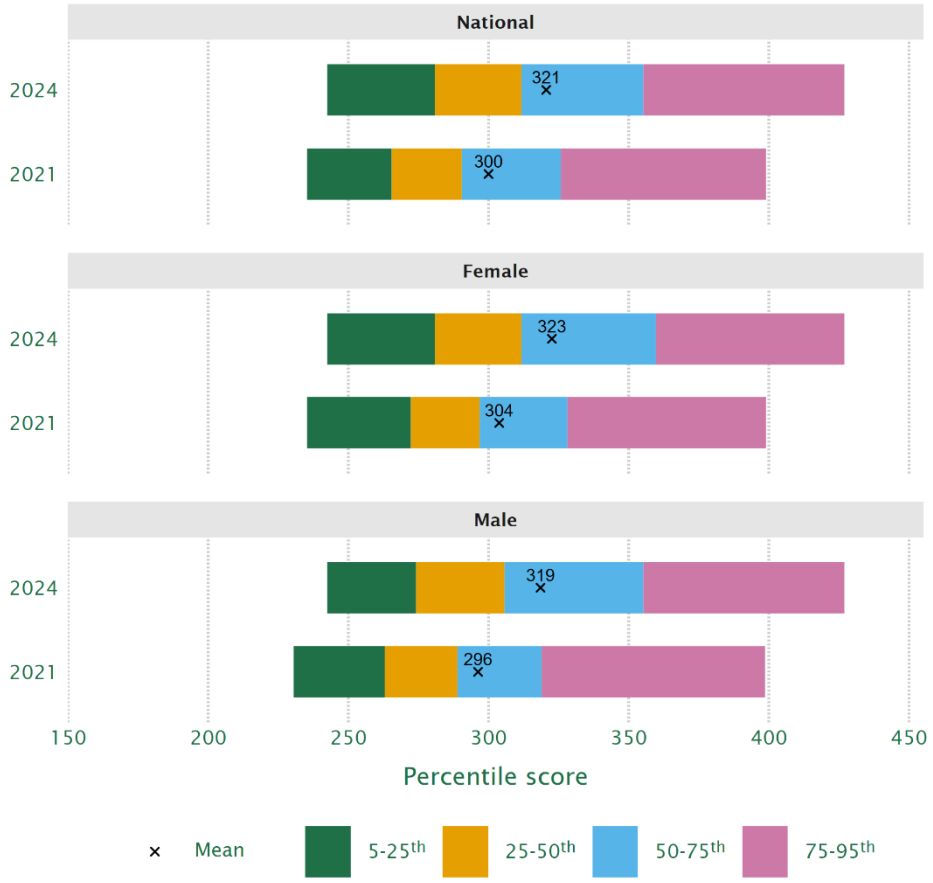


Table 3.3 shows the percentile score distribution by district, and Figure 3.5 visualises the distribution alongside the mean score for each district. Districts shown on Figure 3.5 are ordered from highest to lowest mean score. The results show some variation in score ranges across districts.

The district with the narrowest interquartile range was Gasa (38), suggesting that student performance in that district was more consistent compared to the variation observed in other districts. In contrast, Gelephu Thromde had the widest interquartile range (111), indicating greater variability in student performance compared to other districts, potentially due to the small sample size, with students from only one school included in the NEA.

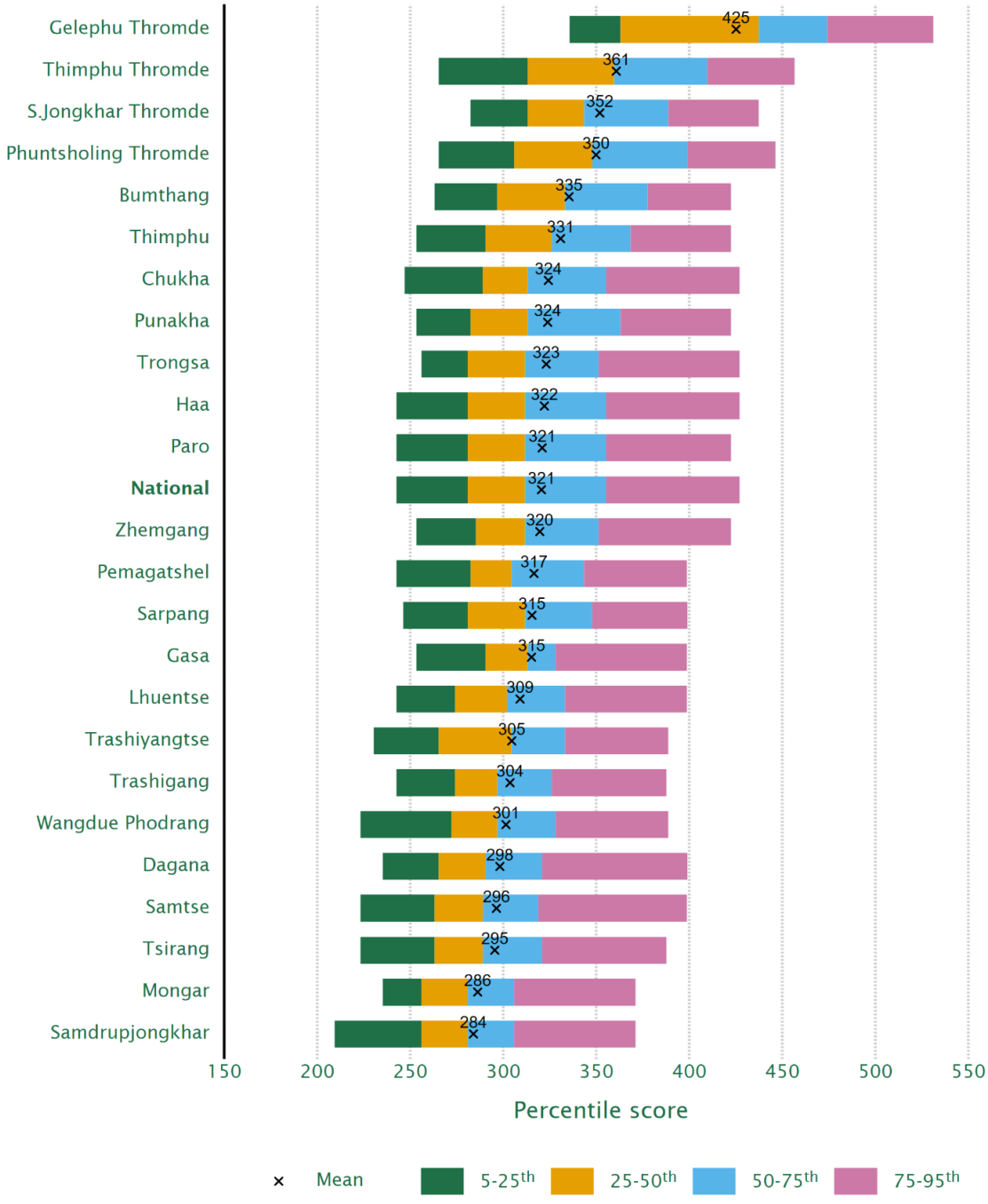
As can be seen in Figure 3.5, with the exception of Gelephu Thromde, Thimphu Thromde's distribution was also much wider compared to other districts, indicating that performance in that district varied greatly at both the top and bottom end of the performance range.

Table 3.3: Percentile scores in grade III English Reading Literacy, nationally and by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	263	297	333	378	422	81	159
Chukha	247	289	313	355	427	66	180
Dagana	235	265	290	321	399	55	164
Gasa	253	290	313	328	399	38	145
Gelephu Thromde	336	363	437	474	531	111	195
Haa	242	281	312	355	427	74	185
Lhuentse	242	274	302	333	399	59	156
Mongar	235	256	281	306	371	50	136
Paro	242	281	312	355	422	74	180
Pemagatshel	242	282	304	343	399	61	156
Phuntsholing Thromde	265	306	348	399	446	93	181
Punakha	253	282	313	363	422	81	169
Samdrup Jongkhar	209	256	281	306	371	50	162
S.Jongkhar Thromde	282	313	343	389	437	76	155
Samtse	223	263	289	319	399	56	175
Sarpang	246	281	312	348	399	67	153
Thimphu	253	290	326	368	422	78	169
Thimphu Thromde	265	313	360	410	457	96	191
Trashigang	242	274	297	326	388	52	145
Trashiyangtse	230	265	304	333	389	68	158
Trongsa	256	281	312	351	427	71	171
Tsirang	223	263	289	321	388	58	165
Wangdue Phodrang	223	272	297	328	389	56	166
Zhemgang	253	285	312	351	422	66	169
National	**242**	**281**	**312**	**355**	**427**	**74**	**185**

Another observation from Figure 3.5 is that while the difference in mean scores between some districts was small, the score distribution can vary noticeably between them. One such example is Mongar and Samdrup Jongkhar: the mean scores for these two districts differed by just 2 points, but the scale range for the 5th–95th percentiles was much wider for Samdrup Jongkhar. This suggests that while average performance was the same in the two districts, Samdrup Jongkhar had a more heterogeneous group of grade III students in their English Reading Literacy performance than Mongar, for those at the bottom end of the performance range.

Figure 3.5: Percentile scores in grade III English Reading Literacy, nationally and by district



3.1.3. Proficiency levels

Table 3.4 shows the proficiency levels developed to describe performance in grade III English Reading Literacy, which are identical to those from the NEA 2021. The lowest proficiency level is Level 1, and the highest proficiency level is Level 4. The description for each proficiency level indicates the skills and knowledge students at that level are expected to be able to demonstrate.

Table 3.4: Proficiency descriptions for grade III English Reading Literacy

Proficiency level	Description
Level 4	Students at this level are typically able to read different genres of texts, including informative texts that are slightly dense. They are able to locate explicitly stated information in texts and write it out, even when the information is not in a prominent position or even when it is in the presence of competing details. They make more complex interpretations, such as those requiring linking a sentence to a previous one. They are able to identify simple rhyming words. They are able to read texts to infer meanings at different levels of understanding using prior knowledge. They can reflect on a text to recognise the main theme or author's purpose in a text about a familiar topic.
Level 3	Students at this level are typically able to read longer texts of different types, including non-continuous texts, narratives, and poems. They can select directly stated information using synonymous matches in different types of texts. They are able to interpret information by linking ideas from different parts of a text or to prior knowledge, paraphrasing information and deducing word meaning using clues in short texts. They can also identify the main idea of a short non-continuous text, even when it is implied. They can infer the traits of a character in narratives based on clues in the text.
Level 2	Students at this level are beginning to read short, simple texts of different types. They are able to identify simple details which are explicitly stated and are a direct match to the words in the task, in very short, simple texts. They interpret basic conventions to retrieve details. They begin to make simple connections between the information in the text and common, everyday knowledge.
Level 1	Students at this level are able to match words to a simple illustration of a familiar object. They are also able to interpret basic actions and phrases that are familiar from everyday life. They can recognise information about concrete and/or familiar objects, animals, etc.

In the NEA 2021, it was decided by various educational stakeholders in the country that students were expected to reach at least Level 2 by the end of grade III. Thus, students with scores between Level 2 and Level 4 (and above in future NEAs) are considered to have met the minimum proficiency level of grade III.

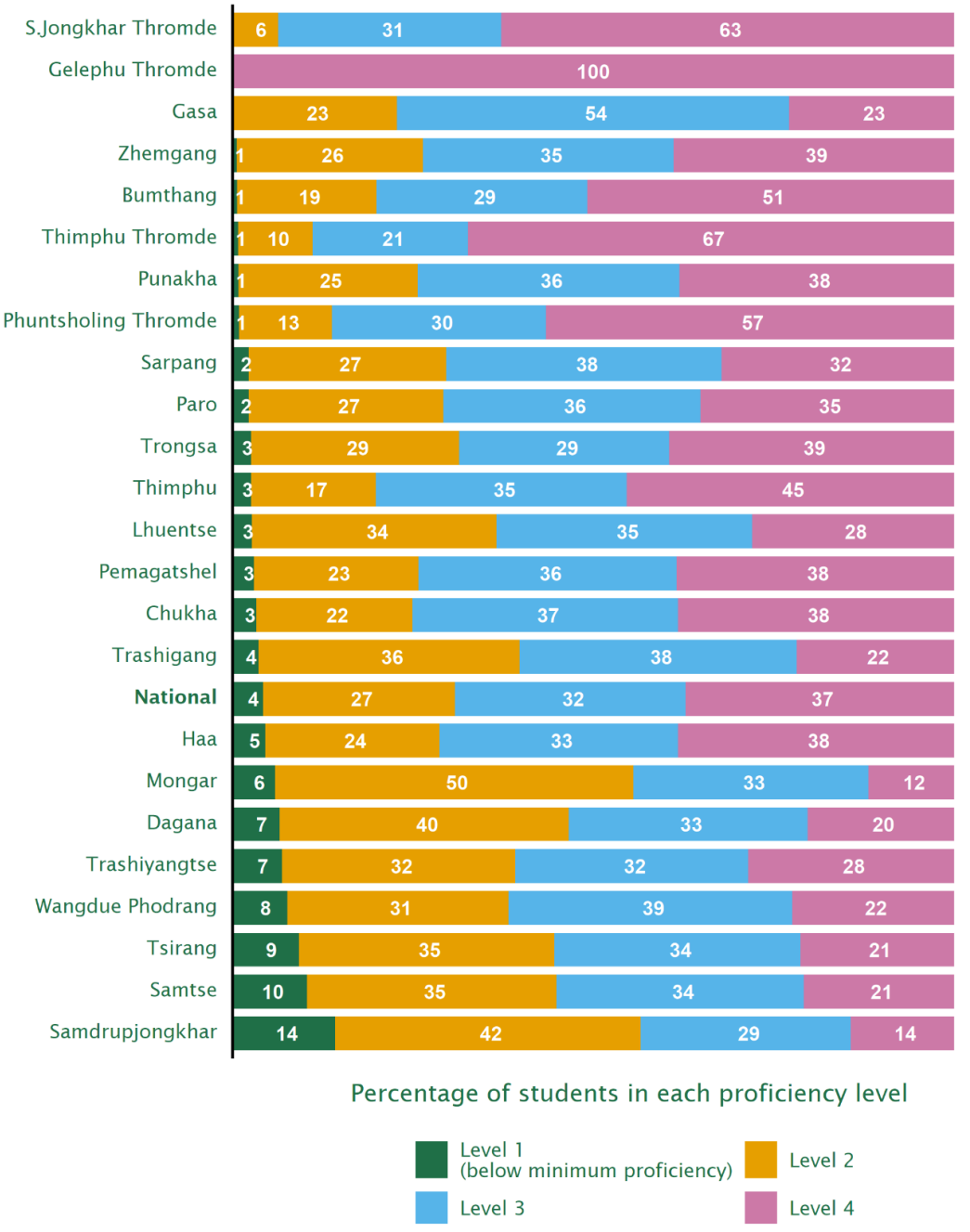
Table 3.5 shows the percentage of students at each proficiency level, and the total percentage of students who achieved the minimum level of proficiency (Level 2 and above). Figure 3.6 visualises these results, ordered from the highest to the lowest percentage of students, with the districts with the highest percentage of students meeting the minimum proficiency level at the top, and the districts with the lowest percentage of students meeting the minimum proficiency level at the bottom of the graph.

Table 3.5: Percentage of students at each proficiency level for grade III English Reading Literacy by district

District	Percentage of students at each level				Percentage of students achieving minimum proficiency (%)
	Level 1	Level 2	Level 3	Level 4	
Bumthang	0.6	19.3	29.2	50.8	99.4
Chukha	3.3	21.6	36.8	38.2	96.7
Dagana	6.6	40.1	33.1	20.3	93.4
Gasa	0.0	22.9	54.3	22.9	100.0
Gelephu Thromde	0.0	0.0	0.0	100.0	100.0
Haa	4.6	24.1	33.1	38.2	95.4
Lhuentse	2.8	33.9	35.4	27.9	97.2
Mongar	5.9	49.7	32.6	11.8	94.1
Paro	2.3	27.0	35.6	35.1	97.7
Pemagatshel	3.0	22.8	35.8	38.4	97.0
Phuntsholing Thromde	0.9	12.9	29.7	56.5	99.1
Punakha	0.8	24.8	36.3	38.0	99.2
S.Jongkhar Thromde	0.0	6.4	30.9	62.7	100.0
Samdrup Jongkhar	14.3	42.4	29.1	14.2	85.7
Samtse	10.4	34.5	34.3	20.8	89.6
Sarpang	2.2	27.4	38.2	32.2	97.8
Thimphu	2.6	17.3	34.8	45.3	97.4
Thimphu Thromde	0.8	10.3	21.5	67.4	99.2
Trashigang	3.7	36.2	38.4	21.8	96.3
Trashiyangtse	6.9	32.4	32.3	28.5	93.1
Trongsa	2.6	28.9	29.2	39.4	97.4
Tsirang	9.2	35.5	34.1	21.2	90.8
Wangdue Phodrang	7.6	30.6	39.4	22.4	92.4
Zhemgang	0.6	25.8	34.8	38.8	99.4
National	**4.3**	**26.6**	**32.0**	**37.2**	**95.7**

Nationally, 96% of the students met the minimum proficiency level for grade III English Reading Literacy in the NEA 2024, with 27%, 32%, and 37% of students at Level 2, Level 3, and Level 4, respectively. In other words, only 4% of the students did not meet the minimum level (i.e., Level 1).

Figure 3.6: Percentage of students at each proficiency level for grade III English Reading literacy by district



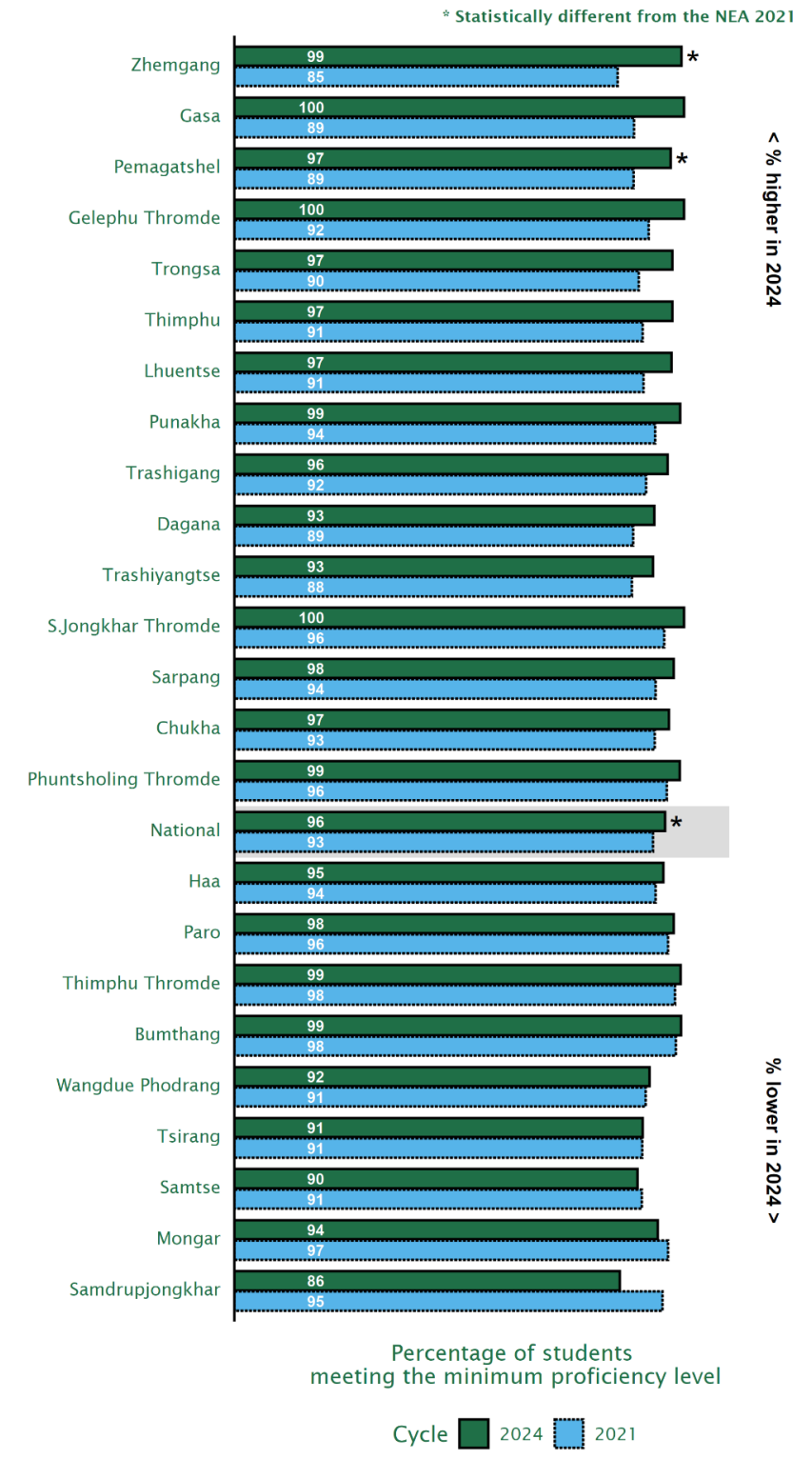
Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

All of the students in Gelephu Thromde achieved Level 4 proficiency (the highest level), but this is based upon a small sample in a single school. Samdrup Jongkhar Thromde and Gasa also had 100% of their respective students achieving scores above the minimum proficiency level. Across all of the other districts, the percentage of students who met the minimum proficiency level in English Reading Literacy ranged from 86% (Samdrup Jongkhar) to 99% (Zhemgang). For most districts, in fact, the percentages of students meeting the minimum

proficiency level in English Reading Literacy were quite high. Two exceptions were perhaps Samdrup Jongkhar and Samtse, where the percentages of students who did not meet the minimum proficiency level were 14% and 10%, respectively.

To understand changes between the NEA cycles, Figure 3.7 compares the percentage of students who met the minimum proficiency level in each district and by cycle. It also indicates districts where statistically significant changes were detected in the percentage of students who achieved each proficiency level. Only Zhemgang and Pemagatshel showed a statistically significant increase in the percentage of students meeting the minimum proficiency level. In Zhemgang, the percentage of students meeting the minimum proficiency level rose by 14 percentage points, from 85% (NEA 2021) to 99% (NEA 2024). Put differently, the percentage of students not meeting the grade III English Reading Literacy proficiency level was 14 percentage points lower, from 15% (NEA 2021) to 1% (NEA 2024).

Figure 3.7: Percentage of students meeting the minimum proficiency level by district and NEA cycle



Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

3.2. Performance gaps in context

3.2.1. Performance by student characteristics

Figure 3.8 shows the mean scores for English Reading Literacy by Early Childhood Care and Development (ECCD) participation, gender, and children with disabilities (CWD) status. Among these three characteristics, the biggest performance gap can be seen between students with and without disabilities. Students without disabilities outperformed students with disabilities by 12 points, however this difference is not statistically significant. As mentioned earlier, girls outperformed boys by 4 points, and this was not found to be statistically significant.

The only statistically significant performance gap can be observed between students with and without ECCD participation. The mean score for students who participated in the ECCD programme was higher than those who did not by 7 points, which is a practically small difference.

Figure 3.8: Mean scores for grade III English Reading Literacy by student characteristics

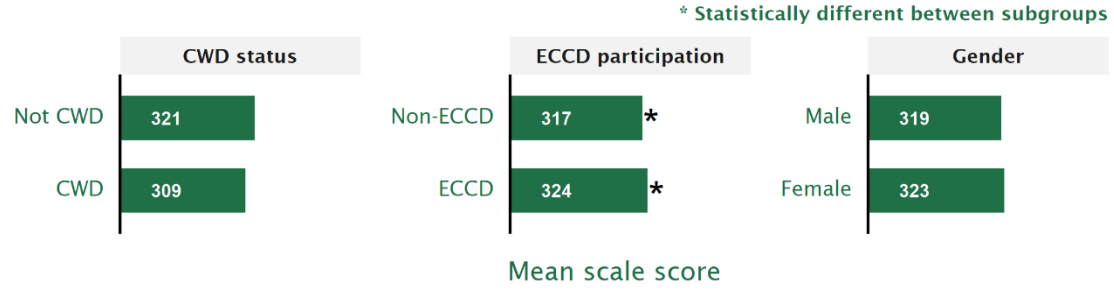
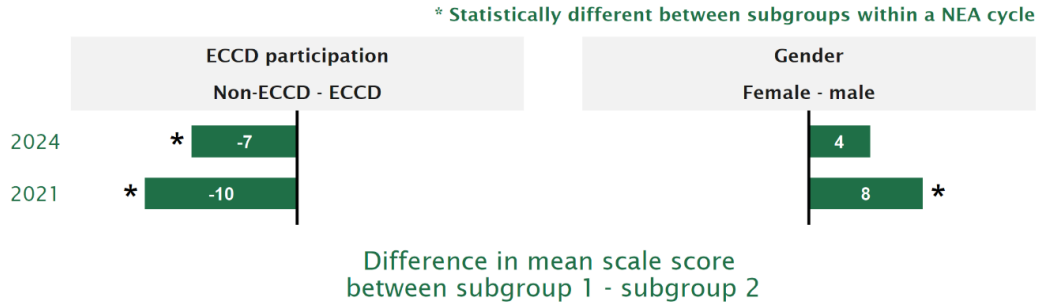


Figure 3.9 more clearly depicts the performance gap; it shows the difference in mean scores, for both NEA cycles, between students without ECCD participation and those with ECCD participation, and between girls and boys. Note that performance gaps for students with disabilities are not presented in Figure 3.9, as the performance of these students was not evaluated independently in the NEA 2021. Figure 3.9 also indicates whether each performance gap was statistically significant in its respective NEA cycle. For instance, the top bar in the left-hand panel shows that students without ECCD participation underperformed relative to students with ECCD participation by an average of 7 points, and this difference is statistically significant. Due to rounding, it is possible that the differences shown do not perfectly match those indicated in Figure 3.8.

Results from Figure 3.9 indicate that the performance gap between students with and without ECCD participation is smaller by 3 points in the NEA 2024, and the significant gender gap in the NEA 2021 is found to be smaller and not significant in the NEA 2024.

Figure 3.9: Performance gaps in grade III English Reading Literacy by student characteristics and NEA cycle



Note: The performance of children with disabilities was not investigated in NEA 2021.

3.2.2. Performance by family characteristics

Figure 3.10 shows the mean scores for English Reading Literacy by students' family income, parental education, and main language spoken by the students at home. The largest performance gap was observed between students whose parents had received a college education and those with parents who did not receive any education. These gaps exist when both the students' fathers' and mothers' education was considered. For instance, students with a college-educated father scored, on average, 366, while those whose father did not go to school scored an average of 297, representing a difference of 69 points that is both statistically significant and practically very large. Additionally, a large performance gap also exists between students whose parents are college-educated and school-educated.

Apart from parental education, a noticeable performance gap exists between students from families with different income levels. In particular, students from a higher income group tended to outperform students from lower-income families. For instance, the performance gap was 49 points between students from the highest (more than Nu 500000) and lowest (less than Nu 100000) family income groups. The magnitude of difference was about a SD, representing a large difference.

Finally, students who spoke English at home tended to outperform students who spoke Dzongkha or other languages at home. As shown in Figure 3.10, students who spoke English at home scored, on average, 363, which was 36 points higher than Dzongkha-speaking students and 52 points higher than students who spoke languages other than Dzongkha at home. The performance differences between these students are statistically significant and large in size.

These gaps suggest that student performance in English Reading Literacy is closely related to their family background characteristics.

Figure 3.10: Mean scores for grade III English Reading Literacy by family characteristics

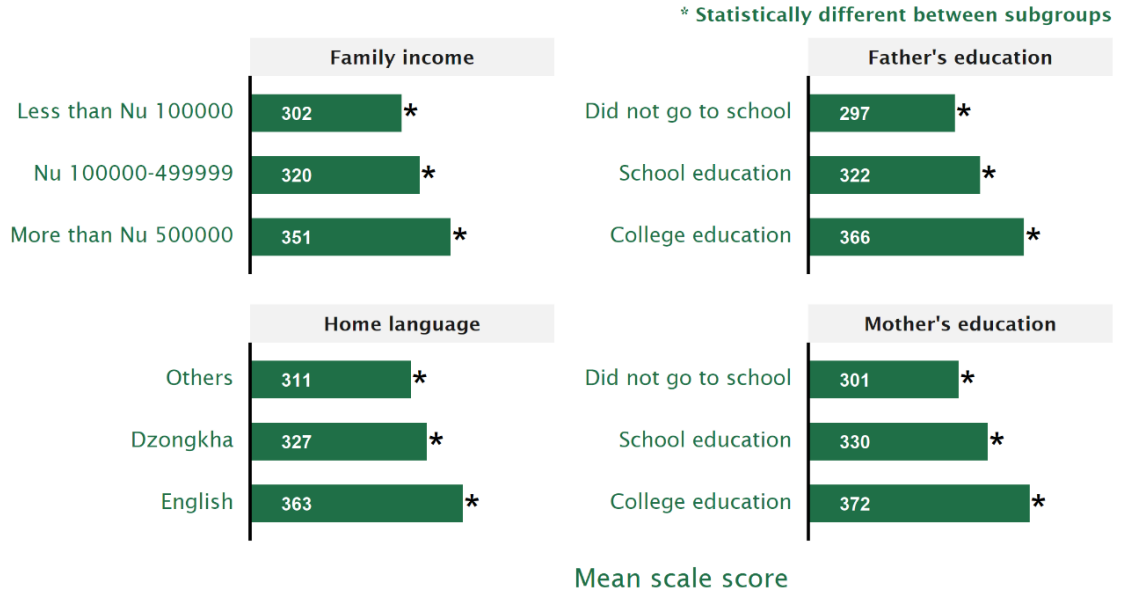
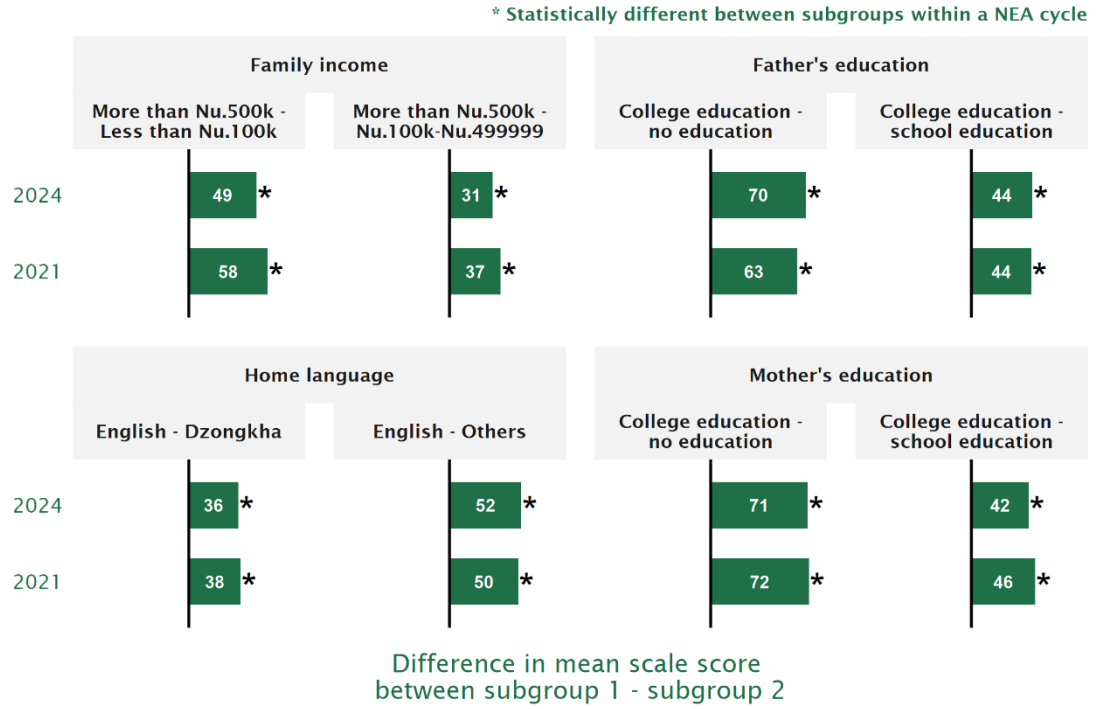


Figure 3.11 more clearly depicts the performance gap; it shows the difference in mean scores between different subgroups of students based on their family characteristics, for both NEA cycles. For instance, the top bar in the far-left panel shows that, in the NEA 2024, students from families with an annual income above Nu 500000 scored, on average, 49 points higher than those from families who earned less than Nu 100000 per year – this difference is statistically significant. Due to rounding, it is possible that the differences shown do not perfectly match those indicated in Figure 3.10.

Results from Figure 3.11 indicate that performance gaps of similar size were observed between students with different family backgrounds in both the NEA 2021 and the NEA 2024. It was only in the performance gap between students from the highest income group (more than Nu 500000) and those from the lowest income group (less than Nu 100000) that the gap was found to be marginally smaller in the 2024 NEA cycle compared to the NEA 2021.

Figure 3.11: Performance gaps in grade III English Reading Literacy by family characteristics and NEA cycle

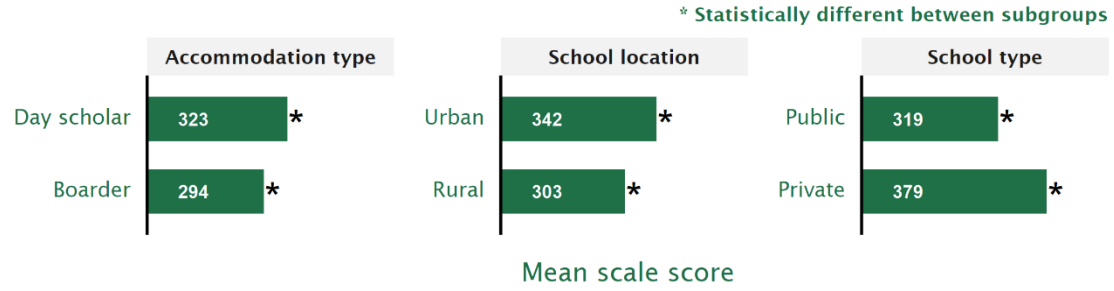


3.2.3. Performance by school characteristics

Figure 3.12 shows the mean scores for English Reading Literacy by students' accommodation type, school location, and school type. The largest performance gap can be observed between students from private schools and students from public schools. On average, students who studied in a private school scored 379, which was 60 points higher than the mean score of students from public schools. This difference is statistically significant and practically very large in size (more than one SD).

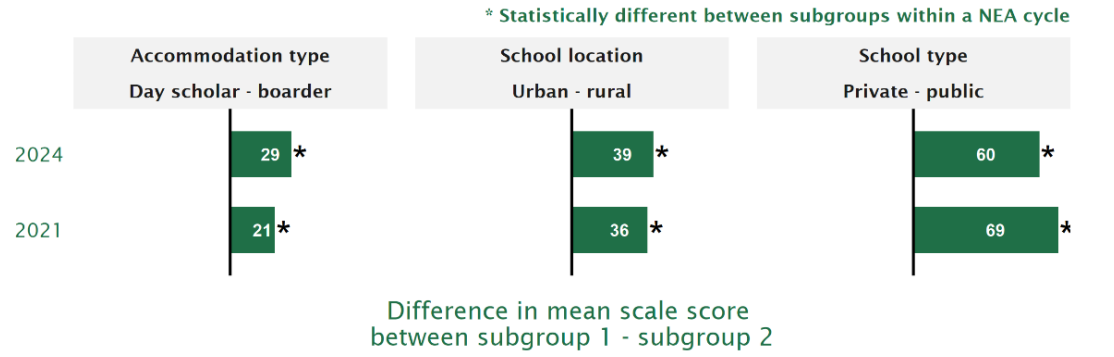
A moderate gap was found between students who studied at rural schools and students who studied at urban schools, and a smaller gap was observed between students with different school accommodation arrangements (day scholars vs boarders). Students attending urban schools scored, on average, 39 points higher than those in rural schools, and day scholars tended to outperform boarders by an average of 29 points. In both cases, the differences in mean scores between the subgroups were statistically significant, and the magnitude of each difference was more than half a SD, indicating a moderate-to-large disparity in performance across these subgroups.

Figure 3.12: Mean scores for grade III English Reading Literacy by school characteristics



As before, Figure 3.13 more clearly depicts the performance gap; it shows the difference in mean scores, for both NEA cycles, between different subgroups of students based on their school types. For instance, the top bar in the far-left panel shows that, in the NEA 2024, students who were day scholars scored, on average, 29 points higher than boarders, and this difference is statistically significant. Due to rounding, it is possible that the differences shown do not perfectly match those indicated in Figure 3.12.

Figure 3.13: Performance gaps in grade III English Reading Literacy by school type and NEA cycle



Findings from Figure 3.13 suggest that the performance gap between urban and rural schools, and between day scholars and boarders, had slightly widened between the two NEA cycles. However, the performance gap between students from private schools and students from public schools was marginally smaller this NEA cycle, compared to the 2021 NEA cycle, suggesting that the gap is narrowing.

3.3. Summary and conclusion

This chapter presents and discusses the findings from the grade III English Reading Literacy test. Key findings and recommendations are summarised below.

National: There was a moderate improvement in the English Reading Literacy performance of grade III students in this NEA cycle, compared to the previous NEA cycle. In particular, the mean score increased from 300 (NEA 2021) to 321 (NEA 2024), representing an increment of 21 points. In 2024, about 96% of students met the minimum proficiency level set by various educational stakeholders – 3 percentage points higher than in the NEA 2021. In other words, proportionally fewer grade III students failed to meet the minimum proficiency in this NEA cycle compared to the NEA 2021. These findings suggest that existing policy efforts to support students in their learning and teachers in teaching English reading are likely contributing to an improved national performance of grade III students in English Reading Literacy.

District: Districts that performed statistically significantly better than the national cohort of students were Thimphu Thromde and Phuntsholing Thromde. In these districts, the percentage of students who did not meet the minimum proficiency level was only 1% or less. Additionally, student performance in several districts – Thimphu Thromde, Phuntsholing Thromde, Pemagatshel, and Thimphu – significantly improved in the NEA 2024, compared to the NEA 2021, suggesting that existing initiatives or interventions implemented in these districts are effective in improving students' acquisition of English Reading Literacy. In contrast, the lowest performing district in English Reading Literacy was Samdrup Jongkhar, followed closely by Mongar. Performances from Samtse, Wangdue Phodrang, Dagana, and Tsirang were also found to be statistically lower than the national mean. In all of these districts, at least 6% (but up to 14%) of students did not meet the minimum proficiency level. This finding underscores the need to investigate the underlying causes of low performance in these districts. Additionally, it highlights the importance of allocating additional support, and implementing targeted policies that prioritise students from these districts.

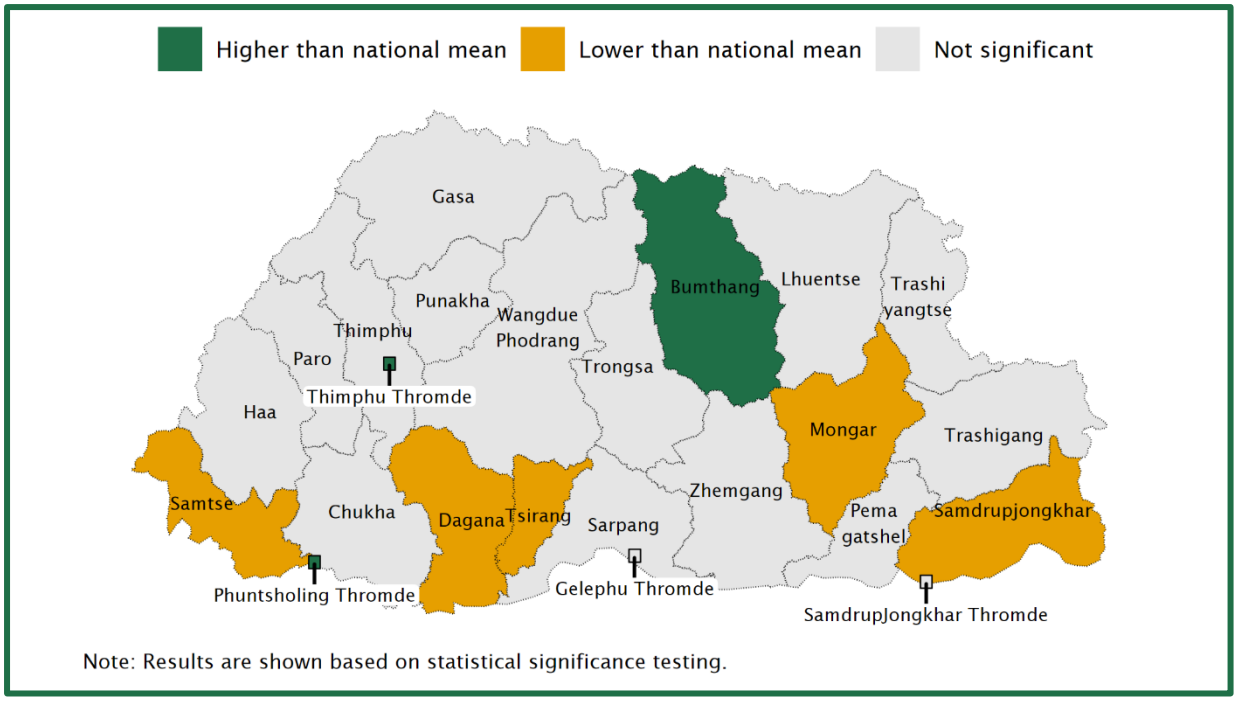
Gender: No significant difference was found in the performances of girls and boys. Contrary to the NEA 2021, where gender differences were small but significant, in the NEA 2024, girls marginally outperformed boys in English Reading Literacy at the national level by 4 points, but this was not found to be statistically significant. Similarly, we did not find evidence to suggest that this gender gap is statistically significant in individual districts.

CWD: Students with disabilities underperformed compared to students without disabilities by an average of 12 points, but this difference was not found to be statistically significant. This magnitude of difference was smaller than the performance gaps observed between students with different family backgrounds and school types, but it is more noticeable when compared to gender differences.

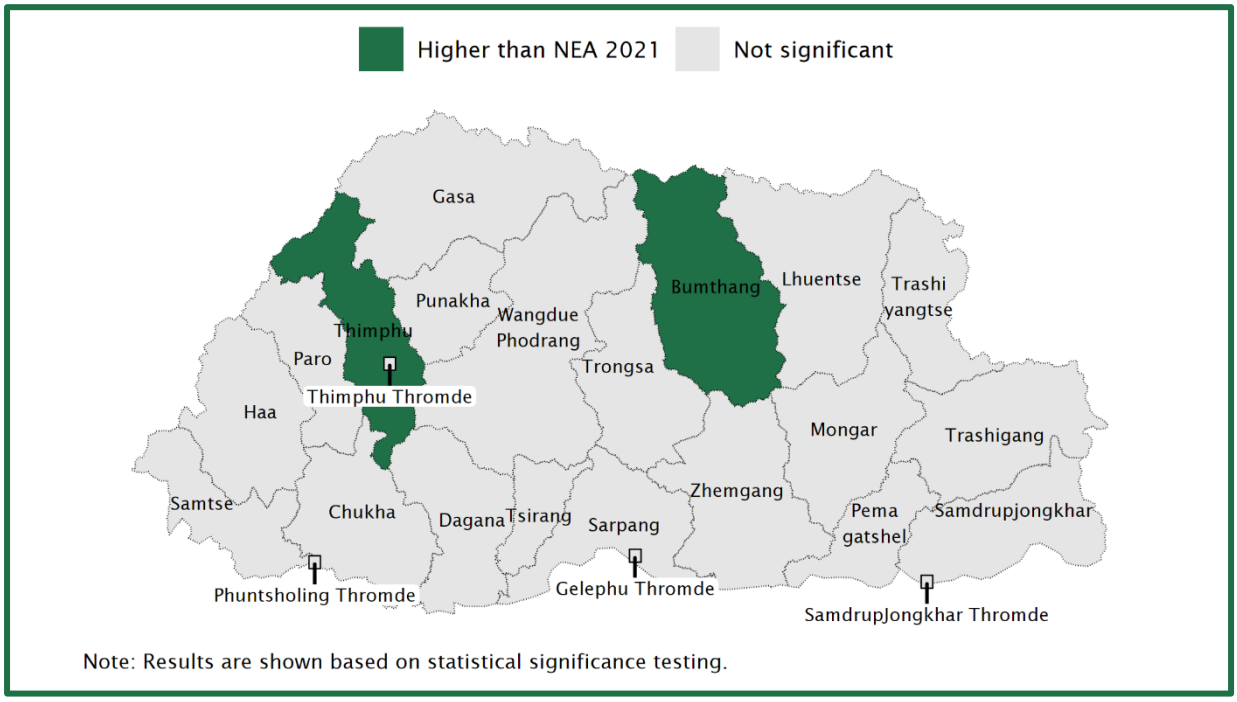
Other characteristics: Large and statistically significant performance gaps were found in many of the other student, family, and school characteristics investigated (besides gender and CWD, as discussed). In particular, some of the bigger performance gaps were found between students with parents who did not go to school and those with college-educated parents (based on both the mother's and the father's education), and between students from families with different income levels. These findings suggest that family background (e.g., the socio-economic status of the family) is closely related to student performance in English Reading Literacy. In many of these cases, the performance gaps remained similar in size to those observed in the NEA 2021. This finding suggests that existing policy efforts to address educational inequalities in student English Reading Literacy may not be as effective as hoped in narrowing the performance gaps.

Chapter 4. Achievement of grade III students in Mathematical Literacy

Summary 4.1: Student achievement in grade III Mathematical Literacy by district (NEA 2024)



Summary 4.2: Grade III Mathematical Literacy progression compared to NEA 2021, by district



4.1. Performance

This chapter presents the achievement of grade III students in the Mathematical Literacy test of the NEA 2024. The discussion focusses on the analysis of student mean scores, percentile distributions, proficiency levels, group differences, and contextual factors affecting student performance. Additionally, where possible, student performance is compared to that of grade III students in the NEA 2021 to analyse the progression in this domain relative to the previous NEA cycle.

The NEA 2021 results in this report may differ slightly from those previously published (BCSEA, 2023a), mostly due to the stricter statistical testing in this NEA cycle (i.e., it used a lower significance threshold) and minor changes to the approach used to estimate abilities from the item response theory model, as explained in the introduction section. The NEA 2021 results presented in this report are consistent with the methodology used for the NEA 2024. In other words, despite minor updates in methodology for the NEA 2024, meaningful comparisons with the NEA 2021 results are still possible. Detailed results for the NEA 2021, produced using the NEA 2024 methodology, are available in Appendix A: Cognitive results for NEA 2021, grade III.

4.1.1. Mean scores

Table 4.1 shows the mean scores of all of the districts, as well as the national mean. In addition to the mean scores, the standard error and 95% confidence intervals are provided for statistical comparison. T-tests were conducted to check if the mean score of each district was statistically different from the national mean. The results of these tests, including the p-values, are provided in the table. As explained in the introduction section, all significance testing in this report uses a critical value of $p<0.01$. For this reason, there are some instances in the table where the 95% confidence interval does not include the national mean, but the difference is not highlighted as statistically significant.

Table 4.1: Mean scores for grade III Mathematical Literacy by district

District	Mean	Standard error	95% confidence interval	p-value	Statistically different than the national mean?
Bumthang	327	3.36	320 – 334	0.001	Higher
Chukha	320	7.96	304 – 335	0.468	Not significant
Dagana	292	5.06	282 – 302	0.000	Lower
Gasa	306	13.72	279 – 332	0.566	Not significant
Gelephu Thromde	411	–	–	–	–
Haa	312	6.71	299 – 325	0.841	Not significant
Lhuentse	309	10.74	288 – 330	0.674	Not significant
Mongar	291	5.35	281 – 302	0.000	Lower
Paro	311	3.36	305 – 318	0.591	Not significant
Pemagatshel	312	0.93	310 – 313	0.419	Not significant
Phuntsholing Thromde	334	4.01	326 – 342	0.000	Higher
Punakha	319	7.06	305 – 333	0.451	Not significant
Samdrup Jongkhar	286	6.19	274 – 298	0.000	Lower
S.Jongkhar Thromde	329	10.13	309 – 348	0.151	Not significant
Samtse	290	4.22	282 – 299	0.000	Lower
Sarpang	315	4.06	307 – 323	0.814	Not significant
Thimphu	316	3.72	309 – 324	0.531	Not significant
Thimphu Thromde	342	4.13	334 – 350	0.000	Higher
Trashigang	306	9.31	287 – 324	0.411	Not significant
Trashiyangtse	302	5.62	291 – 313	0.058	Not significant
Trongsa	318	7.48	304 – 333	0.540	Not significant
Tsirang	293	4.59	285 – 302	0.000	Lower
Wangdue Phodrang	301	5.11	291 – 311	0.023	Not significant
Zhemgang	315	7.48	300 – 330	0.864	Not significant
National	**314**	**2.25**	**309 – 318**	**–**	**–**

Five districts – Samdrup Jongkhar, Samtse, Mongar, Dagana, and Tsirang – had mean scores that were statistically significantly lower than the national mean. Among these districts, the lowest mean score was observed in Samdrup Jongkhar. The students from Samdrup Jongkhar performed lower than the national cohort by an average of 28 points (286 vs 314). The mean scores for the other four districts were also comparatively low (in the range of 290 to 293), representing a 21- to 24-point difference compared to the national mean. These differences are moderate in size, considering they are roughly half a standard deviation (SD) in magnitude.

In contrast, three districts – Thimphu Thromde, Phuntsholing Thromde, and Bumthang – had mean scores that were statistically significantly higher than the national mean. The students from Thimphu Thromde, in particular, scored 28 points higher than the national mean (342 vs 314), indicating that students in that district tended to perform moderately better than the national cohort of students. Students from Phuntsholing Thromde and

Bumthang scored about 20 and 13 points higher, respectively, suggesting that they performed marginally better than other students nationally (a small-to-moderate difference in size).

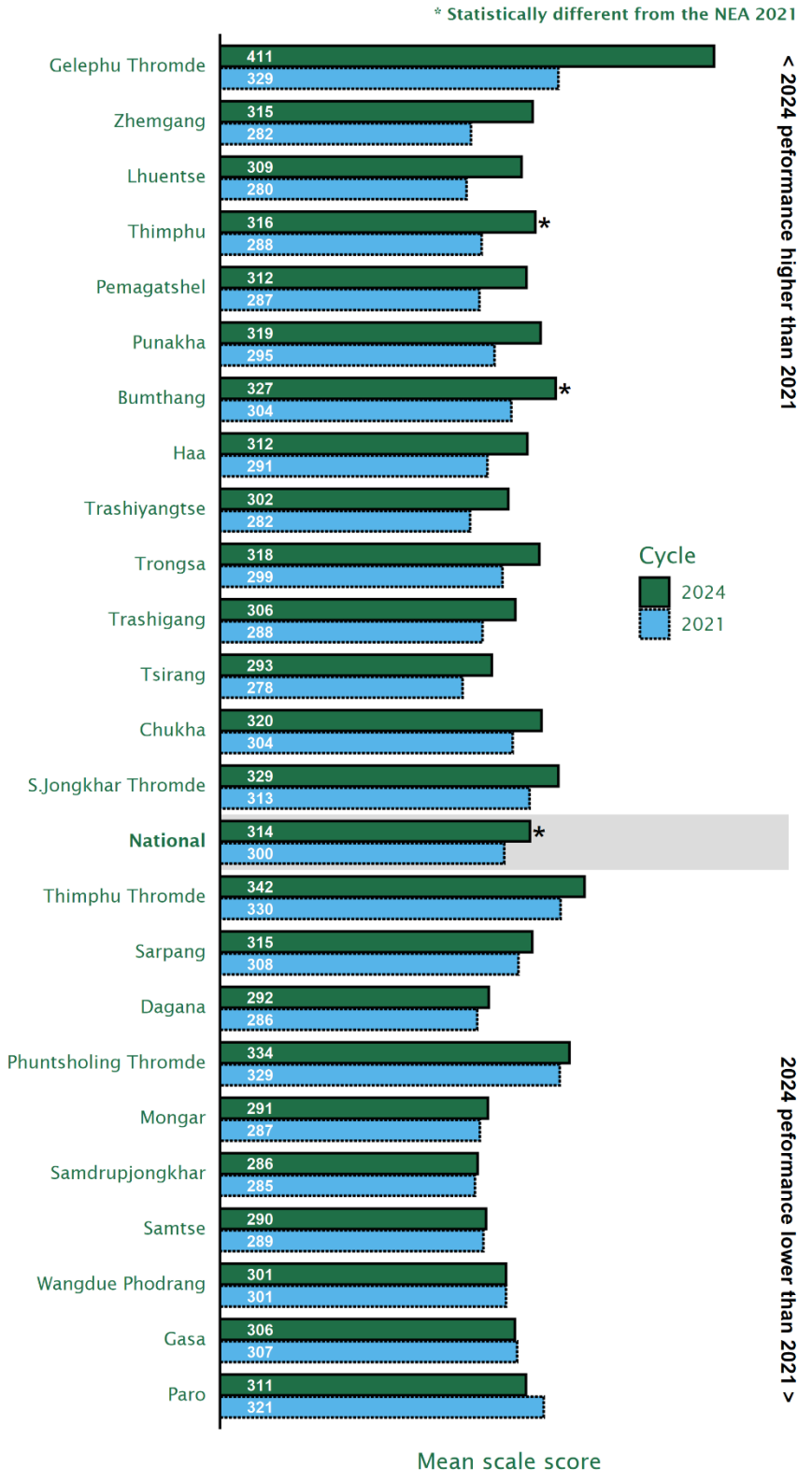
Note that even though Gelephu Thromde had a noticeably higher mean score, it was not statistically feasible to accurately quantify the uncertainty in this mean estimate as only one school participated. As such, significance testing was not conducted to compare the mean of this district to the national mean.

To understand grade III students' progression in Mathematical Literacy, Figure 4.1 presents the mean scores for both the NEA 2021 and the NEA 2024 cycles, for each district and nationally. It also indicates districts where changes in the mean score between the two NEA cycles are statistically significant. Nationally, the mean score has increased by 14 points – from 300 (NEA 2021) to 314 (NEA 2024); this increment is statistically significant and is small-to-moderate in size. The districts showing statistically significant improvement in Mathematical Literacy in this NEA cycle were Thimphu (by 28 points) and Bumthang (by 23 points). Their mean scores were about half a SD higher in the NEA 2024, compared to their respective performance in the NEA 2021, which suggests a moderate increase in performance.

Note that it is harder to detect statistical significance within individual districts than at national level, due to the small sample size. With this in mind, a lack of statistical significance in the change should not be seen as an indication that things have not improved within a district – only that we lack definitive evidence to be sure of this. However, even without this certainty, we can see that, in line with changes nationally, the majority of districts performed better in 2024 than in 2021.

As before, even though Gelephu Thromde's mean score also rose noticeably, it was not feasible to conduct a significance test to compare the means between the two NEA cycles as standard errors were deemed unreliable.

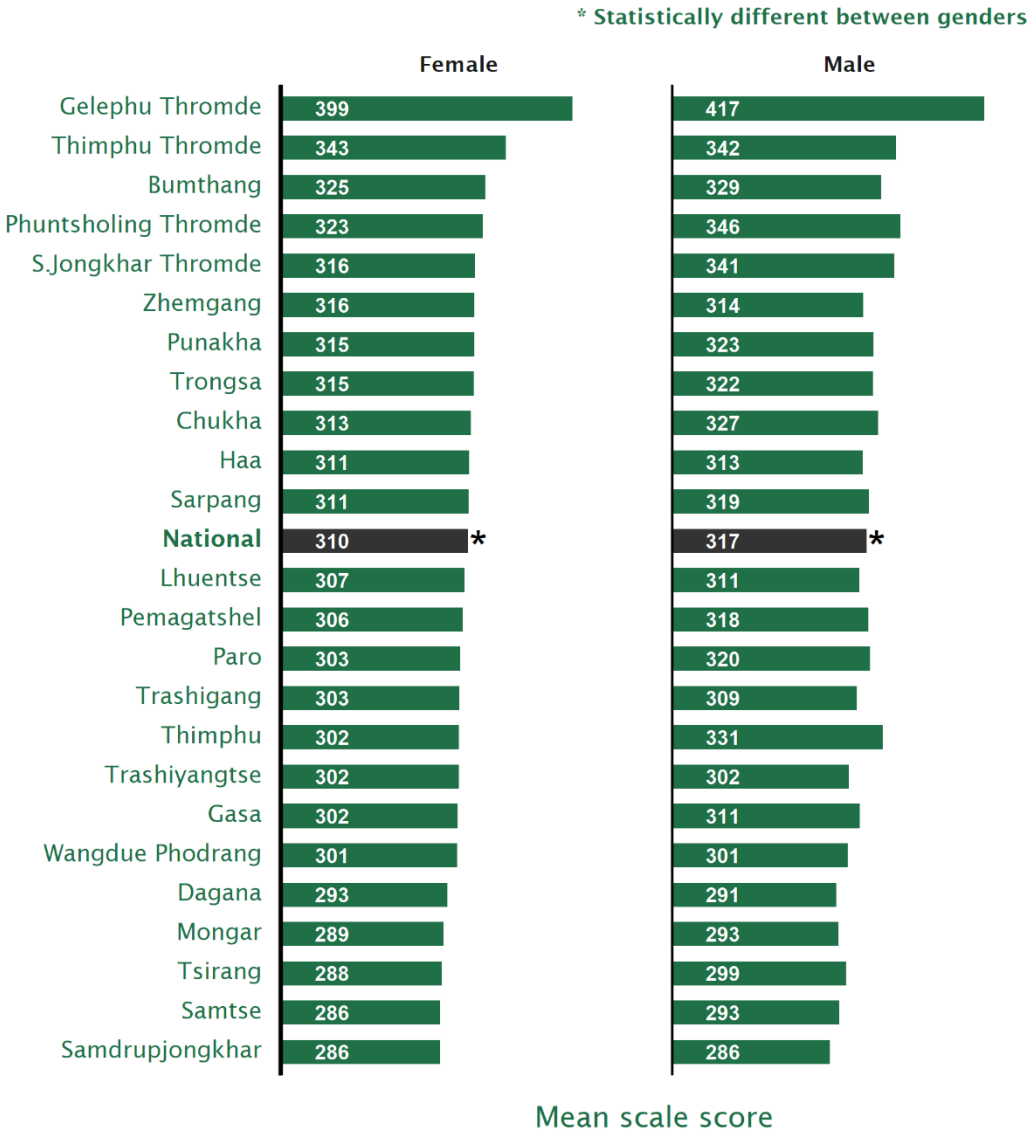
Figure 4.1: Mean scores for grade III Mathematical Literacy by district and NEA cycle



Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

Figure 4.2 compares mean Mathematical Literacy scores for boys and girls within each district. It shows that, nationally, boys outperformed girls by an average of 7 points, and the difference is statistically significant but practically small in size. No district was found to have statistically significant gender differences, though in many districts, boys tended to outperform girls.

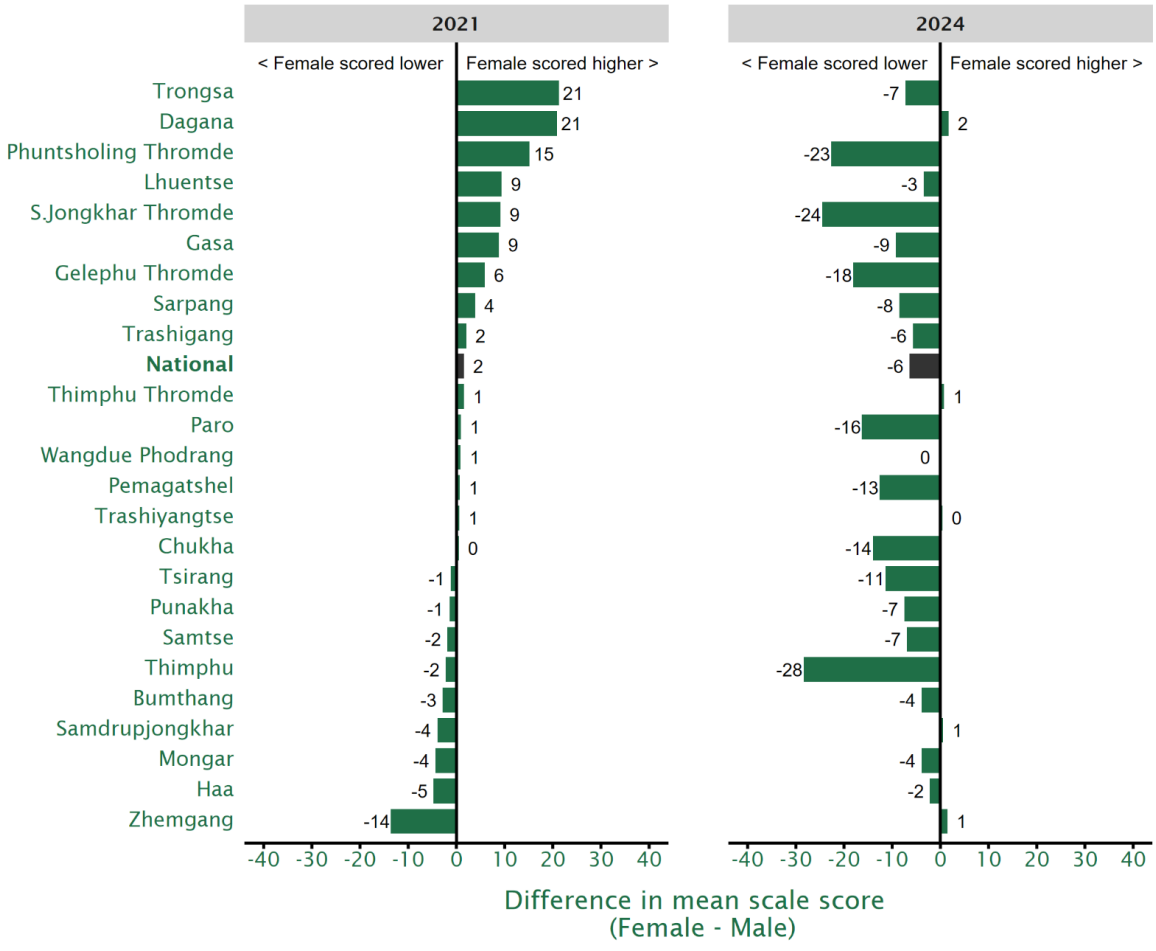
Figure 4.2: Mean scores for grade III Mathematical Literacy by district and gender



Notes: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution. Significance tests were not carried out for Gasa, Gelephu Thromde, Pemagatshel, and S.Jongkhar Thromde because only one or two schools participated.

Figure 4.3 more clearly depicts the magnitude of these performance differences; it shows the differences in mean scale score, by NEA cycle, between girls and boys, both nationally and for each district. The left-hand panel indicates that, in the NEA 2021, girls outperformed boys in some districts while underperforming in others. In contrast, the right-hand panel reveals that, in the NEA 2024, girls tended to underperform boys in the majority of districts. However, it is important to note that the gender differences in each district were not statistically significant (see Figure 4.2). This suggests that the gender differences in Mathematical Literacy performance may be systematic at the national level rather than something observed only in a few districts.

Figure 4.3: Gender differences in grade III Mathematical Literacy performance by district and cycle



4.1.2. Percentile distributions

The percentile distribution illustrates how students' performance is spread across the range of possible scores. It helps indicate a student's standing relative to the rest of the group. In the context of the NEA, a percentile score represents the scale score below which a certain

percentage of students fall. For example, the 5th percentile score in Mathematical Literacy indicates that 5% of students scored below that value.

Percentile distributions also provide insight into the degree of variation in student performance. The range between the 25th and 75th percentiles – known as the interquartile range – captures the middle 50% of scores. Meanwhile, the range between the 5th and 95th percentiles includes 90% of all scores. A wider range suggests greater variability in performance among students, while a narrower range indicates more similarity.

Table 4.2: Percentile scores in grade III Mathematical Literacy, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	232	273	304	340	409	67	177
Male	241	280	308	348	419	68	178
National	**241**	**280**	**307**	**347**	**413**	**68**	**172**

Table 4.2 presents the percentile scores and the ranges for the NEA 2024 Mathematical Literacy test, both nationally and by gender. Nationally, 50% of students scored between 280 and 347, while 90% scored between 241 and 413.

When broken down by gender, the findings show that the distribution of scores for girls was very similar to that of boys. The interquartile range (25th–75th percentile) was 67 and 68 points, for girls and boys, respectively. Similarly, the range between the 5th and 95th percentiles was similar for girls and boys, at 177 and 178 points, respectively.

Figure 4.4 illustrates the percentile scores, alongside the mean score, for both NEA cycles. It shows that the mean scores for both genders increased across the NEA cycles, with a more noticeable increase of 18 points in the boys' mean score: from 299 (NEA 2021) to 317 (NEA 2024). The increment in the girls' performance is smaller in comparison: by 9 points, from 301 (NEA 2021) to 310 (NEA 2024). Another observation is that the score distribution for boys slightly shifted towards the top end, compared to the previous NEA cycle. This is not as visible in the distribution for girls. This suggests that boys from all levels of ability were generally performing better in the NEA 2024 compared to boys from the NEA 2021 cohort. Nationally, the spread of the score distribution remains very similar in both NEA cycles, but the median and the mean shifted towards the top end of the scores. This implies that overall performance in grade III Mathematical Literacy has improved, with students achieving higher scores at almost all levels of ability.

Figure 4.4: Percentile scores in grade III Mathematical Literacy by gender and NEA cycle

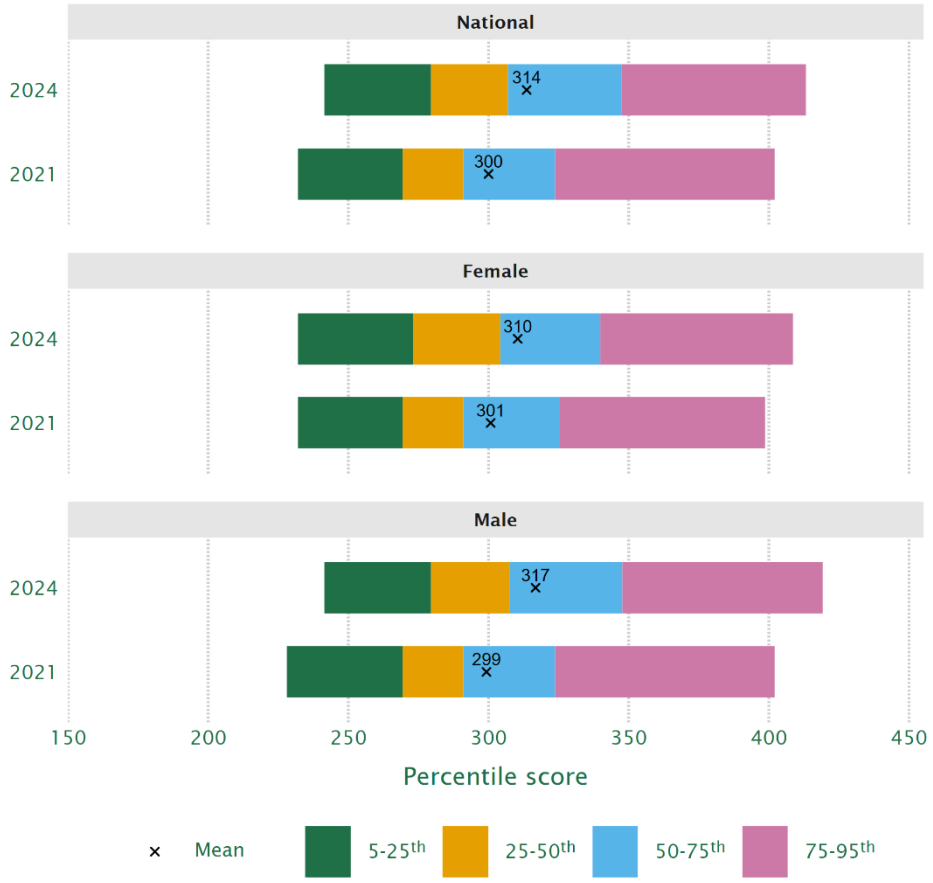


Table 4.3 shows the percentile score distribution by district, and Figure 4.5 visualises the distribution alongside the mean score for each district. Districts shown on Figure 4.5 are ordered from highest to lowest mean score. The results show some variation in score ranges across districts.

The district with the narrowest interquartile range was Trongsa (41), followed closely by Mongar (46), suggesting that student performance in these districts was more consistent compared to the variation observed in other districts. Since Mongar's mean performance was significantly lower than the national mean, this suggests that most students in that district were generally performing below the national mean. A similar conclusion can be drawn for Tsirang, Dagana, Samtse, and Samdrup Jongkhar, as they all had scores that were significantly lower than the national mean, and a relatively narrower interquartile range compared to other districts.

In contrast, Gelephu Thromde had the widest interquartile range (105), indicating greater variability in student performance compared to other districts; this was potentially due to the small sample size, with participating students from only one school. As can be seen in Figure 4.5, with the exception of Gelephu Thromde, the distributions of Gasa and Thimphu were also much wider compared to the national distribution. In Gasa, the ranges for the top

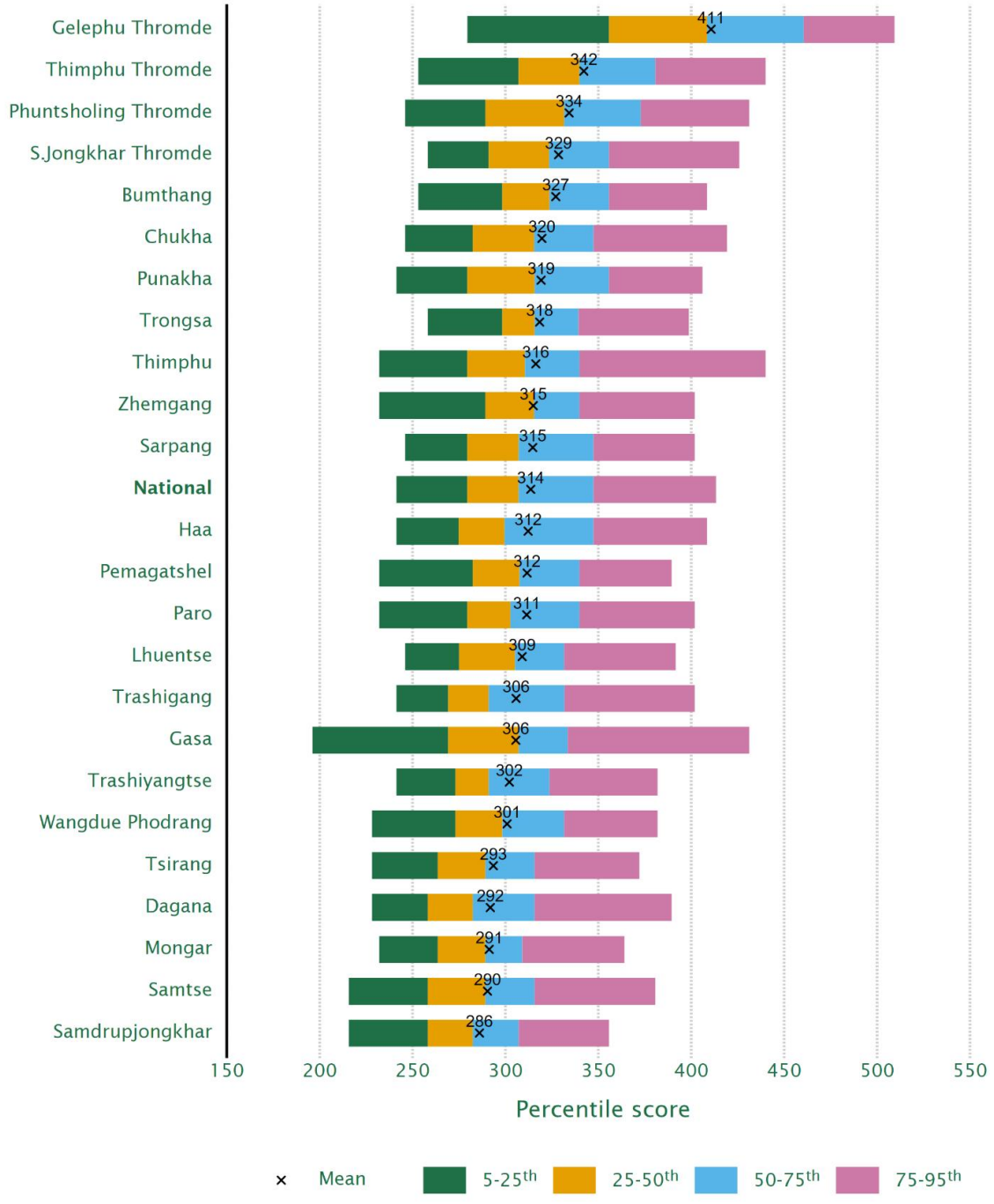
and bottom percentiles were particularly wide, indicating that performance in that district varied greatly, with both high- and low-performing students. For Thimphu, the distribution was wider mainly because the top-performing students were performing exceptionally well.

Table 4.3: Percentile scores in grade III Mathematical Literacy, nationally and by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	253	298	324	356	409	58	156
Chukha	246	282	315	347	419	65	173
Dagana	228	258	282	316	389	57	161
Gasa	196	269	307	333	431	64	235
Gelephu Thromde	280	356	409	460	509	105	230
Haa	241	275	299	347	409	73	167
Lhuentse	246	275	305	331	392	56	146
Mongar	232	264	289	309	364	46	132
Paro	232	280	303	340	402	60	170
Pemagatshel	232	282	308	340	389	57	157
Phuntsholing Thromde	246	289	331	373	431	84	185
Punakha	241	280	316	356	406	76	165
Samdrup Jongkhar	216	258	282	307	356	49	140
S.Jongkhar Thromde	258	291	324	356	426	65	168
Samtse	216	258	289	316	381	57	165
Sarpang	246	280	307	347	402	68	156
Thimphu	232	280	311	340	440	60	208
Thimphu Thromde	253	307	340	381	440	74	187
Trashigang	241	269	291	332	402	62	161
Trashiyangtse	241	273	291	324	382	50	141
Trongsa	258	298	316	339	399	41	141
Tsirang	228	264	289	316	372	52	144
Wangdue Phodrang	228	273	298	331	382	58	154
Zhemgang	232	289	315	340	402	51	170
National	**241**	**280**	**307**	**347**	**413**	**68**	**172**

Another observation from Figure 4.5 is that while the difference in mean scores between some districts was small, the score distribution can vary noticeably between them. One such example is Gasa and Trashigang: the mean scores for these two districts are identical, but the scale range for the 5th–95th percentiles was much wider for Gasa. This suggests that while average performance was the same in the two districts, Gasa had a more heterogeneous group of grade III students in their Mathematical Literacy performance than Trashiyangtse.

Figure 4.5: Percentile scores in grade III Mathematical Literacy, nationally and by district



4.1.3. Proficiency levels

Table 4.4 shows the proficiency levels developed to describe performance in grade III Mathematical Literacy, which are identical to those from the NEA 2021. The lowest proficiency level is Level 1, and the highest proficiency level is Level 5. The description for each proficiency level indicates the skills and knowledge students at that level are expected to be able to demonstrate.

Table 4.4: Proficiency descriptions for grade III Mathematical Literacy

Proficiency level	Description
Level 5	Students at this level apply the concept of place values to solve simple problems in familiar situations; relate repeated addition and multiplication; multiply 2-digit numbers by 1-digit numbers and divide 2-digit numbers by 1-digit numbers; recognise growing patterns with shapes; identify a single operation rule in numerical patterns and find the missing term; interpret different representations of time on an analogue clock to solve simple problems in familiar situations; align the corresponding faces of an object and its net; and use data in bar graphs to solve simple problems in familiar situations.
Level 4	Students at this level recognise odd and even numbers in familiar situations; relate multiplication and division; select and apply multiple strategies for solving problems involving addition and subtraction up to 3-digit numbers; perform basic multiplication and division (2-digit by 1-digit) to solve simple problems in familiar situations; connect and convert between decimals (up to tenths) and fractions (unit fractions); convert minutes to hours; identify angles as greater than, less than or equal to a right angle; and use data in pictographs to solve simple problems in familiar situations.
Level 3	Students at this level add and subtract up to 3-digit numbers to solve simple problems in familiar situations; recognise that different wholes can be divided to show the same fractional parts; recognise repeating patterns with shapes; measure, compare and estimate length and mass using formal units; convert between formal units of measurement; calculate elapsed time; classify simple geometrical shapes based on their attributes; identify basic transformation (turns and flips); use data from a tally chart to solve simple problems in familiar situations; and use a calendar to solve simple problems in familiar situations.
Level 2	Students at this level compare up to 5-digit numbers; subtract up to 2-digit numbers by regrouping; recognise unit fractions and decimals up to the tenth digit; represent familiar situations using number sentences; recognise patterns involving skip counting; read time to the hour, half-hour and quarter-hour on analogue clocks; recognise parallel and perpendicular lines, and lines of symmetry; and read data from a tally chart to solve simple problems in familiar situations.
Level 1	Students at this level recognise up to 4-digit numbers; perform addition and subtraction on up to 2-digit numbers without regrouping; use multiple non-standard units to measure length, mass or capacity; identify and classify 2-D and 3-D shapes; and retrieve information from a tally chart.

In the NEA 2021, it was decided by various educational stakeholders in the country that students were expected to reach at least Level 2 by the end of grade III. Thus, students with scores between Level 2 and Level 5 (and above in future NEAs) are considered to have met the minimum proficiency level of grade III.

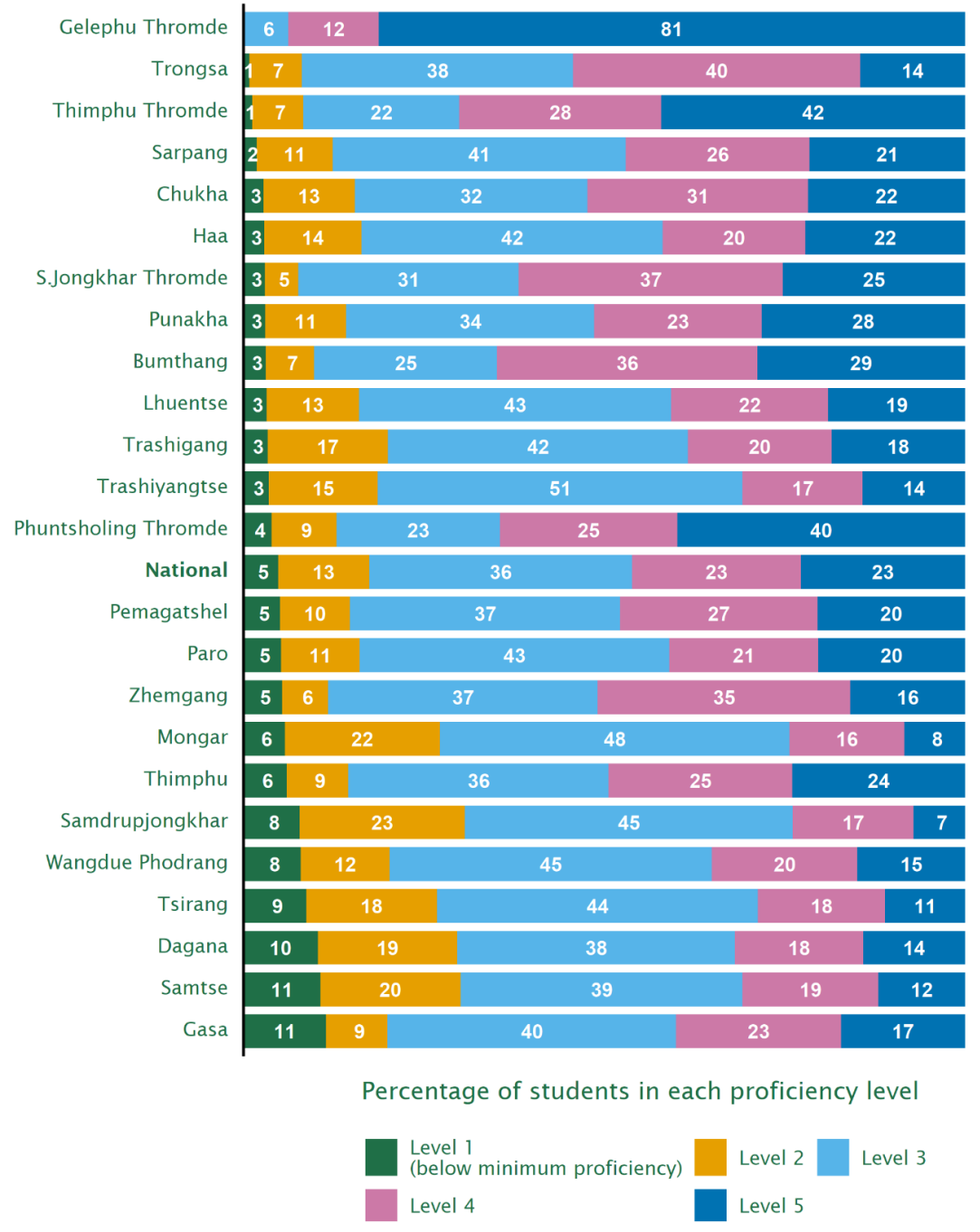
Table 4.5 shows the percentage of students at each proficiency level, and the total percentage of students who achieved the minimum level of proficiency (Level 2 and above). Figure 4.6 visualises these results, ordered from the highest to the lowest percentage of students, with the districts with the highest percentage of students meeting the minimum proficiency level at the top, and the districts with the lowest percentage of students meeting the minimum proficiency level at the bottom of the graph.

Table 4.5: Percentage of students at each proficiency level for grade III Mathematical Literacy by district

District	Percentage of students at each level					Percentage of students achieving minimum proficiency (%)
	Level 1	Level 2	Level 3	Level 4	Level 5	
Bumthang	3.0	6.8	25.4	36.1	28.7	97.0
Chukha	2.7	12.7	32.3	30.6	21.7	97.3
Dagana	10.3	19.4	38.5	17.8	14.1	89.7
Gasa	11.4	8.6	40.0	22.9	17.1	88.6
Gelephu Thromde	0.0	0.0	6.3	12.5	81.3	100.0
Haa	2.9	13.5	41.8	19.8	22.1	97.1
Lhuentse	3.2	12.8	43.3	21.8	18.9	96.8
Mongar	5.7	21.6	48.4	15.9	8.4	94.3
Paro	5.2	10.9	43.0	20.6	20.3	94.8
Pemagatshel	5.0	9.8	37.4	27.4	20.4	95.0
Phuntsholing Thromde	3.8	9.1	22.6	24.6	39.8	96.2
Punakha	3.0	11.3	34.4	23.2	28.2	97.0
S.Jongkhar Thromde	2.9	4.7	30.5	36.7	25.2	97.1
Samdrup Jongkhar	7.8	22.9	45.5	16.7	7.1	92.2
Samtse	10.6	19.5	39.1	18.8	12.0	89.4
Sarpang	1.8	10.6	40.6	25.5	21.5	98.2
Thimphu	6.0	8.6	36.1	25.4	23.9	94.0
Thimphu Thromde	1.2	7.1	21.6	28.0	42.1	98.8
Trashigang	3.3	16.7	41.6	19.9	18.5	96.7
Trashiyangtse	3.4	15.2	50.5	16.7	14.1	96.6
Trongsa	0.8	7.3	37.6	39.8	14.5	99.2
Tsirang	8.7	18.2	44.5	17.6	11.0	91.3
Wangdue Phodrang	7.9	12.4	44.6	20.2	14.8	92.1
Zhemgang	5.3	6.4	37.4	35.0	15.8	94.7
National	**4.7**	**12.7**	**36.4**	**23.4**	**22.7**	**95.3**

Nationally, 95% of the students met the minimum proficiency level for grade III Mathematical Literacy in the NEA 2024, with 13%, 36%, 23%, and 23% of students at Level 2, Level 3, Level 4, and Level 5, respectively. In other words, only 5% of the students did not meet the minimum level (i.e., Level 1).

Figure 4.6: Percentage of students at each proficiency level for grade III Mathematical Literacy by district

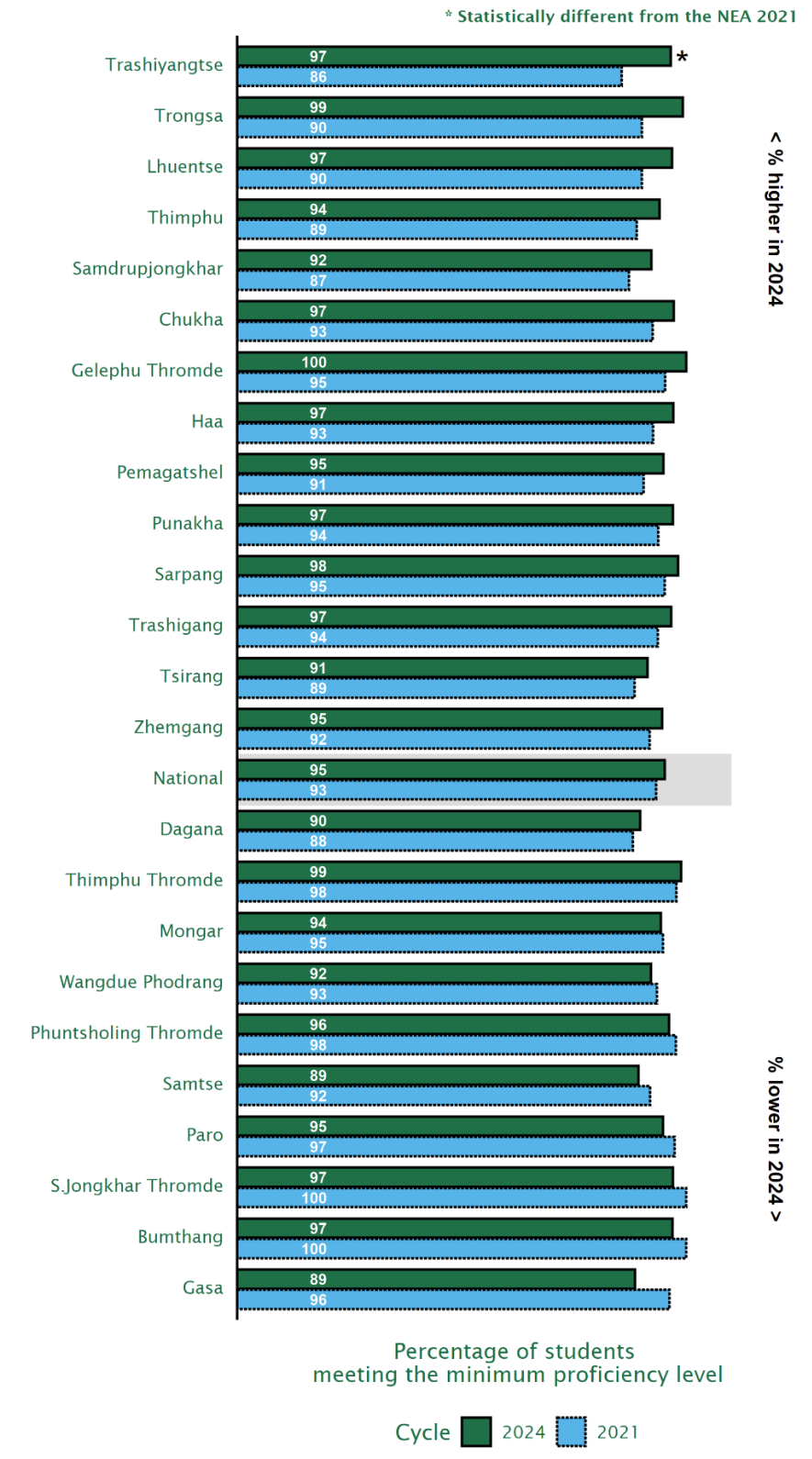


Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

All of the students in Gelephu Thromde met the minimum proficiency level, but this is based upon a small sample in a single school. Excluding Gelephu Thromde, the percentage of students who met the minimum proficiency level in Mathematical Literacy across all of the other districts ranged from 89% (Gasa and Samtse) to 99% (Trongsa and Thimphu Thromde). The similarity of these percentages suggests that most districts have comparable numbers of students meeting the minimum proficiency level in Mathematical Literacy. Another implication from this result is that the percentage of students who did not meet the minimum proficiency level was a maximum of 11%. This was observed in Gasa and Samtse, followed closely by Dagana with 10% of its students not meeting the minimum proficiency level. In contrast, three districts had at least 98% of students meeting the minimum proficiency level: Trongsa (99%), Thimphu Thromde (99%), and Sarpang (98%).

To understand changes between the NEA cycles, Figure 4.7 compares the percentage of students who met the minimum proficiency level in each district and by cycle. It also indicates districts where statistically significant changes were detected in the percentage of students who achieved each proficiency level. Only in Trashiyangtse was the increase in the percentage of students meeting the minimum proficiency level statistically significant. In this district it rose by 11 percentage points, from 86% (NEA 2021) to 97% (NEA 2024). Put differently, the percentage of students not meeting the grade III Mathematical Literacy proficiency level was 11 percentage points lower, falling from 14% (NEA 2021) to 3% (NEA 2024).

Figure 4.7: Percentage of students meeting the minimum proficiency level by district and NEA cycle



Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

4.2. Performance gaps in context

4.2.1. Performance by student characteristics

Figure 4.8 shows the mean scores for Mathematical Literacy by Early Childhood Care and Development (ECCD) participation, gender, and children with disabilities (CWD) status. Among these three characteristics, the biggest performance gap can be seen between students with and without disabilities. Students without disabilities outperformed students with disabilities by 19 points, and this difference is statistically significant and moderate in size.

The performance gaps between genders, and between students with and without ECCD participation, were similar. The mean score for students who participated in the ECCD programme was higher than for those who did not by 8 points, and boys outperformed girls by 6 points. In both cases, the performance between the subgroups was statistically significantly different but practically small in size.

Figure 4.8: Mean scores for grade III Mathematical Literacy by student characteristics

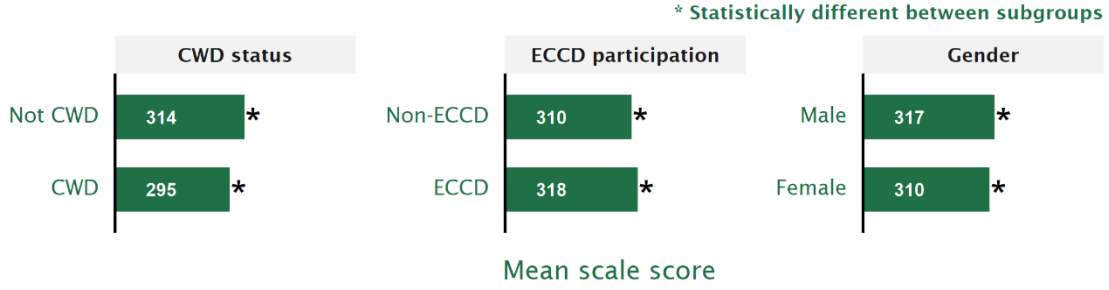
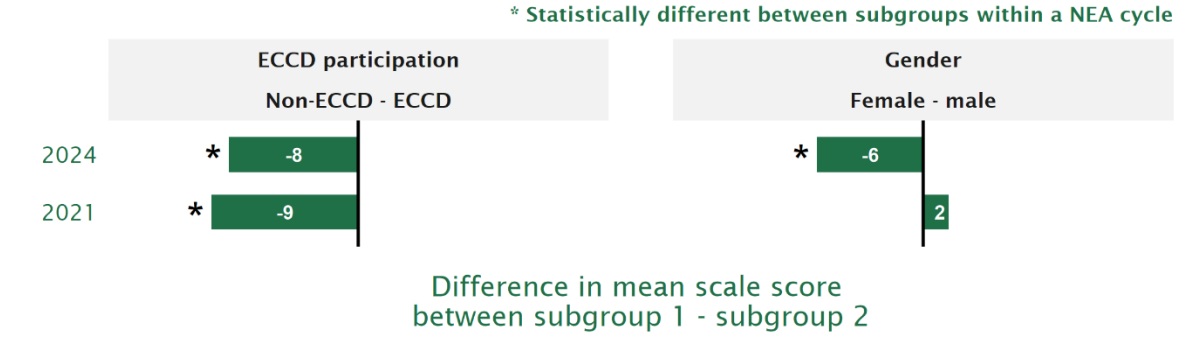


Figure 4.9 more clearly depicts the performance gap; it shows the difference in mean scores, for both NEA cycles, between students without ECCD participation and those with ECCD participation, and between girls and boys. Note that performance gaps for students with disabilities are not presented in Figure 4.9, as the performance of these students was not evaluated independently in the NEA 2021. Figure 4.9 also indicates whether each performance gap was statistically significant in its respective NEA cycle. For instance, the top bar in the left-hand panel shows that students without ECCD participation underperformed relative to students with ECCD participation by an average of 8 points, and this difference is statistically significant. Due to rounding, it is possible that the differences shown do not perfectly match those indicated in Figure 4.8.

Results from Figure 4.9 indicate that the performance gap between students with and without ECCD participation is smaller by 1 point in the NEA 2024, and the insignificant gender gap in the NEA 2021 is found to be significant in the NEA 2024.

Figure 4.9: Performance gaps in grade III Mathematical Literacy by student characteristics and NEA cycle



Note: The performance of children with disabilities was not investigated in NEA 2021.

4.2.2. Performance by family characteristics

Figure 4.10 shows the mean scores for Mathematical Literacy by students' family income, parental education, and main language spoken by the students at home. The largest performance gap was observed between students whose parents had received a college education and those with parents who did not receive any education. These gaps exist when both the students' father's and mother's education was considered. For instance, students with a college-educated father scored, on average, 347, while those whose father did not go to school scored an average of 296, representing a difference of 51 points that is both statistically significant and practically large. Additionally, a moderate performance gap also exists between students whose parents are college-educated and school-educated.

Apart from parental education, a noticeable performance gap exists between students from families with different income levels. In particular, students from a higher income group tended to outperform students from lower-income families. For instance, the performance gap was 41 points between students from the highest (more than Nu 500000) and lowest (less than Nu 100000) family income groups. The magnitude of difference was more than 0.8 of a SD, representing a large difference.

Lastly, students who spoke English at home tended to outperform students who spoke Dzongkha or other languages at home. As shown in Figure 4.10, students who spoke English at home scored, on average, 341, which (after rounding) was 24 points higher than Dzongkha-speaking students and 33 points higher than students who spoke languages other than Dzongkha at home. The performance difference between these students is statistically significant and moderate in size.

These gaps suggest that student performance in Mathematical Literacy is closely related to their family background characteristics.

Figure 4.10: Mean scores for grade III Mathematical Literacy by family characteristics

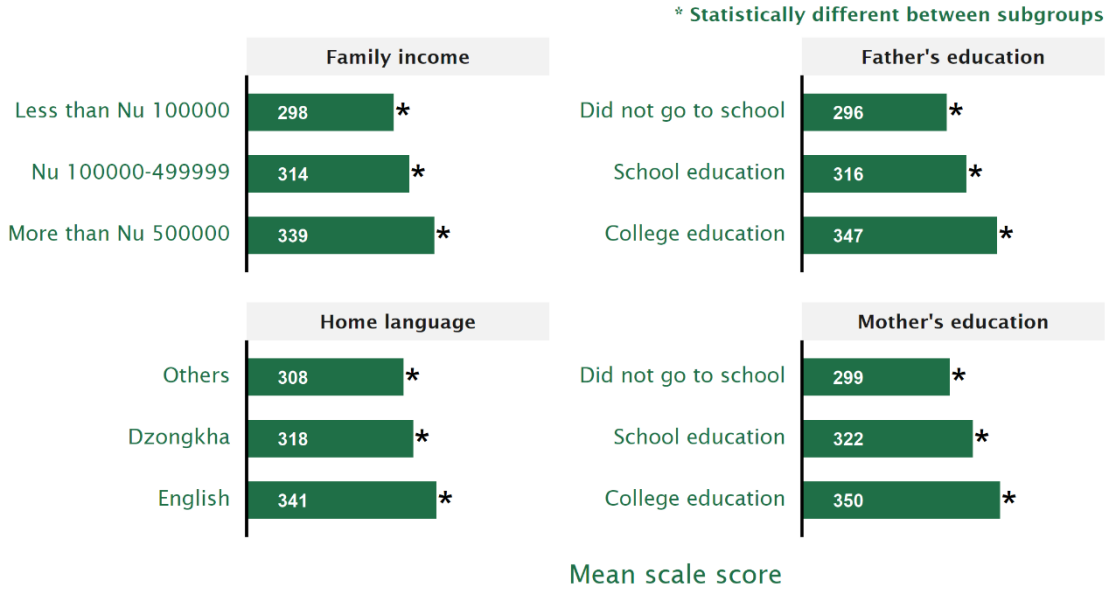
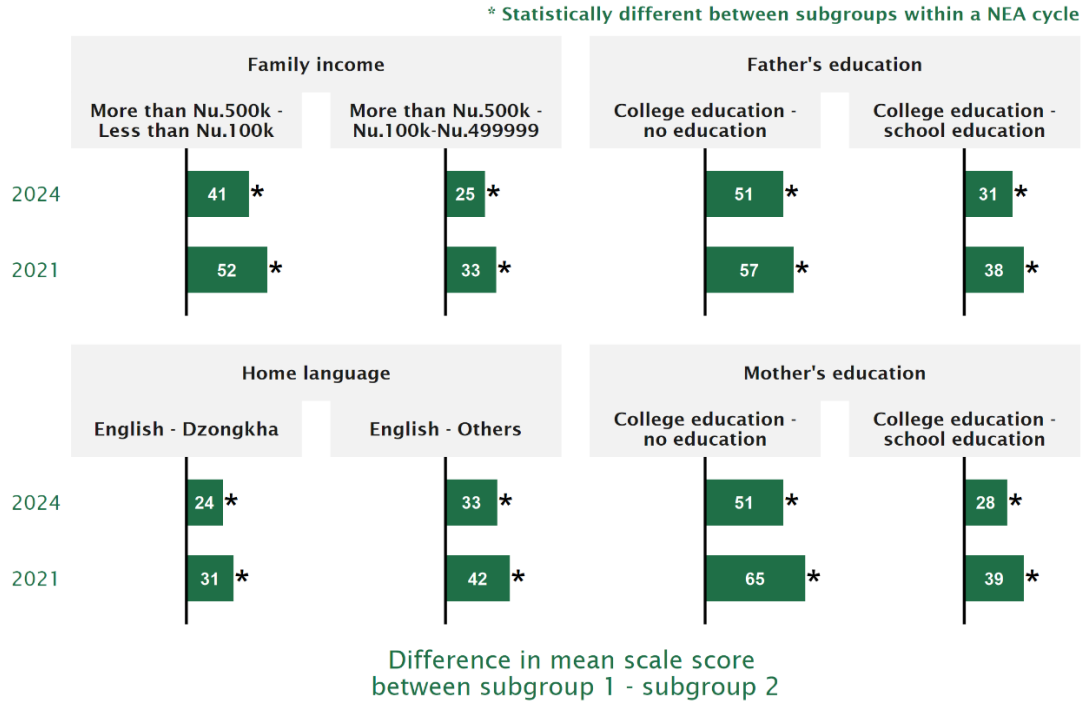


Figure 4.11 more clearly depicts the performance gap; it shows the difference in mean scores between different subgroups of students based on their family characteristics, for both NEA cycles. For instance, the top bar in the far-left panel shows that, in the NEA 2024, students from families with an annual income above Nu 500000 scored, on average, 41 points higher than those from families who earned less than Nu 100000 per year – this difference is statistically significant. Due to rounding, it is possible that the differences shown do not perfectly match those indicated in Figure 4.10.

Results from Figure 4.11 indicate that performance gaps between students with different family backgrounds were observed in both the NEA 2021 and 2024. However, more positively, the magnitude of performance gap was found to be smaller in this NEA cycle compared to the NEA 2021, implying that the gaps are narrowing.

Figure 4.11: Performance gaps in grade III Mathematical Literacy by family characteristics and NEA cycle

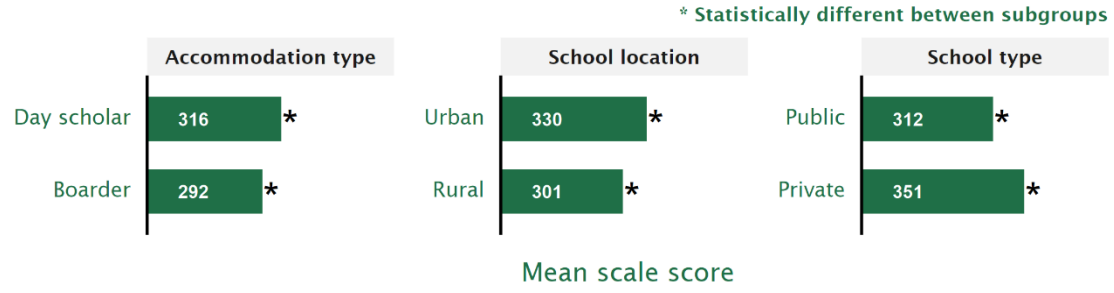


4.2.3. Performance by school characteristics

Figure 4.12 shows the mean scores for Mathematical Literacy by students' accommodation type, school location, and school type. The largest performance gap can be observed between students from private schools and students from public schools. On average, students who studied in a private school scored 351, which was 39 points higher than the mean score of students from public schools. This difference is statistically significant and practically large in size (almost 0.8 of a SD).

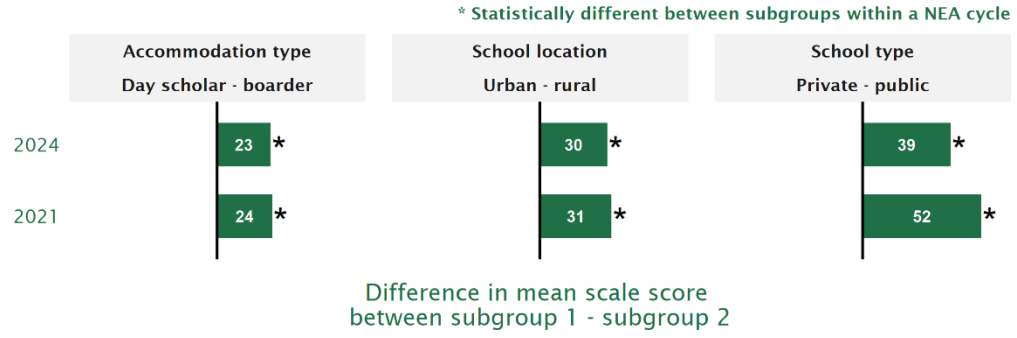
Moderate gaps were also found between students who had different school accommodation arrangements, and between rural and urban schools. Day scholars tended to outperform boarders by an average of 23 points. Secondly, students attending urban schools scored, on average, 30 points higher than those in rural schools. In both cases, the differences in mean scores between the subgroups were statistically significant, and the magnitude of each difference was about half a SD, indicating a moderate disparity in performance across these subgroups.

Figure 4.12: Mean scores for grade III Mathematical Literacy by school characteristics



As before, Figure 4.13 more clearly depicts the performance gap; it shows the difference in mean scores, for both NEA cycles, between different subgroups of students based on their school types. For instance, the top bar in the far-left panel shows that, in the NEA 2024, students who were day scholars scored, on average, 23 points higher than boarders, and this difference is statistically significant. Due to rounding, it is possible that the differences shown do not perfectly match those indicated in Figure 4.12.

Figure 4.13: Performance gaps in grade III Mathematical Literacy by school type and NEA cycle



Findings from Figure 4.13 suggest that the performance gap between urban and rural schools, and between day scholars and boarders, had remained generally similar across the two NEA cycles. However, the performance gap between students from private and public schools was considerably smaller in this cycle, compared to the 2021 NEA cycle, suggesting that the gap is narrowing.

4.3. Summary and conclusion

This chapter presents and discusses the findings from the grade III Mathematical Literacy test. Key findings and recommendations are summarised below.

National: There was a small-to-moderate improvement in the Mathematical Literacy performance of grade III students in this NEA cycle, compared to the previous NEA cycle. In particular, the mean score increased from 300 (NEA 2021) to 314 (NEA 2024), representing an increment of 14 points. In 2024, 95% of students met the minimum proficiency level set by various educational stakeholders – 2 percentage points higher than in the NEA 2021. In other words, proportionally fewer grade III students failed to meet the minimum proficiency level in this NEA cycle compared to the NEA 2021.

These findings suggest that existing policy efforts to support students in their learning and teachers in teaching Mathematics are likely contributing to an improved national performance of grade III students in Mathematical Literacy.

District: Districts that performed statistically significantly better than the national cohort of students were Thimphu Thromde, Phuntsholing Thromde, and Bumthang. In these districts, the percentage of students who did not meet the minimum proficiency level was only 4% or less. Additionally, student performance in Bumthang and Thimphu significantly improved in the NEA 2024, compared to the NEA 2021, suggesting that existing initiatives or interventions implemented in these districts are effective in improving students' acquisition of Mathematical Literacy. In contrast, the lowest performing district in Mathematical Literacy was Samdrup Jongkhar. Performances from Samtse, Mongar, Dagana, and Tsirang were also found to be statistically lower than the national mean. In all of these districts, at least 6% (but up to 11%) of students did not meet the minimum proficiency level. This finding underscores the need to investigate the underlying causes of low performance in these districts. Additionally, it highlights the importance of allocating additional support, and implementing targeted policies that prioritise students from these districts.

Gender: A significant, but practically small, difference was found in the performances of girls and boys. Contrary to the NEA 2021, where gender differences were not significant, in the NEA 2024, boys marginally outperformed girls in Mathematical Literacy at the national level. We did not find evidence to suggest that this gender gap is statistically significant in individual districts, indicating that the difference is likely a systematic pattern at the national level. However, this gender gap was smaller in magnitude compared to the performance differences observed across other contextual characteristics.

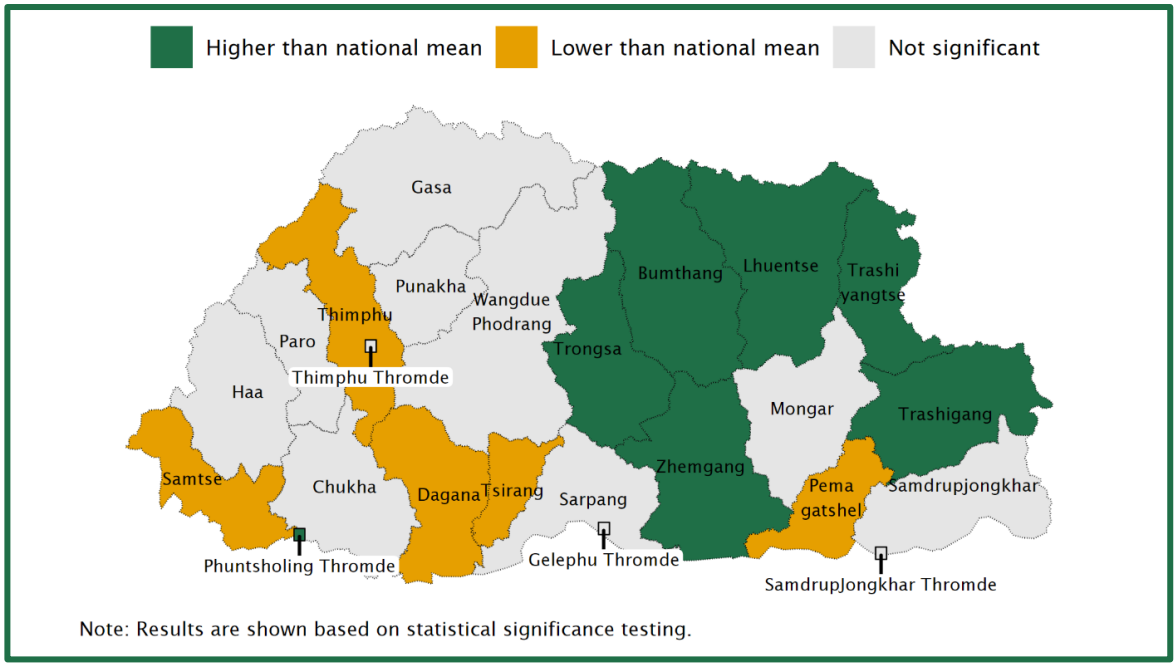
CWD: Students with disabilities statistically significantly underperformed compared to students without disabilities by an average of 19 points – a small-to-moderate gap. This magnitude of difference was smaller than the performance gaps observed between students with different family backgrounds and school types, but it is more noticeable when

compared to gender differences. This finding highlights the importance of policies aimed at providing more inclusive educational support for students with disabilities.

Other characteristics: Statistically significant performance gaps were found in all other student, family, and school characteristics investigated. In particular, some of the bigger performance gaps were found between students with parents who did not go to school and those with college-educated parents (based on both the mother's and father's education), and between students from families with different income levels. These findings suggest that family background (e.g., the socio-economic status of the family) is closely related to student performance in Mathematical Literacy. More positively, most of these performance gaps were found to be noticeably smaller than those observed in the NEA 2021. This finding suggests that existing policy efforts to address educational inequalities may be effective in narrowing performance gaps. However, considering the large performance gaps still evident in some cases, continued policy attention and resources are likely needed to further close these gaps.

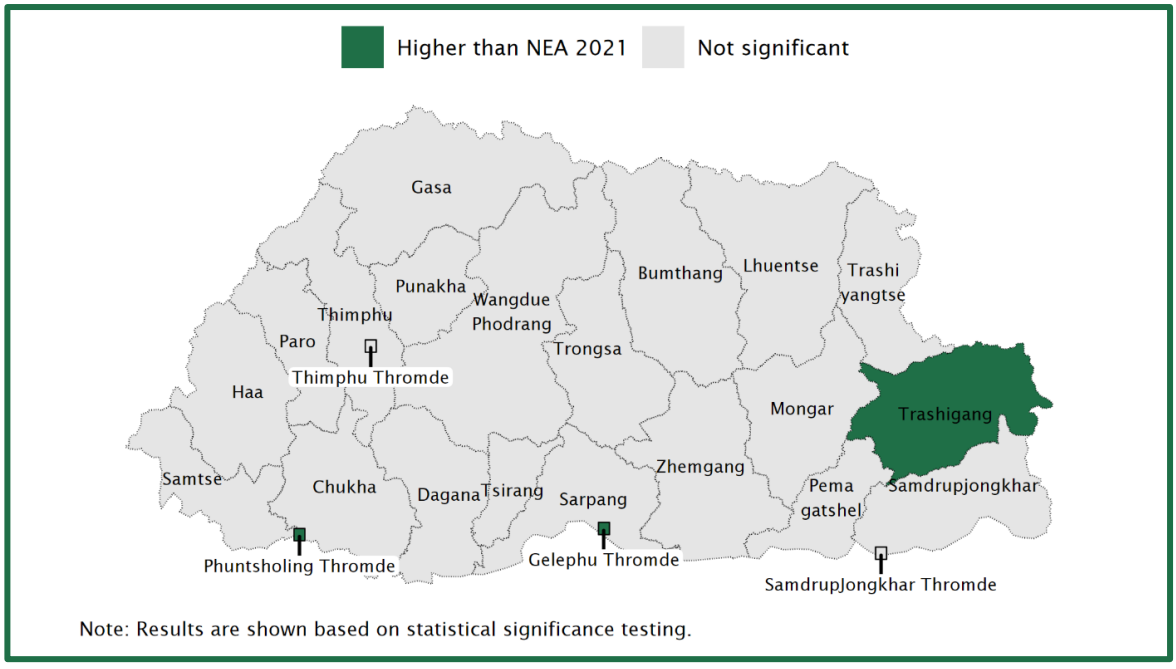
Chapter 5. Achievement of grade III students in Dzongkha Reading Literacy

Summary 5.1: Student achievement in grade III Dzongkha Reading Literacy by district (NEA 2024)



Note: Results are shown based on statistical significance testing.

Summary 5.2: Grade III Dzongkha Reading Literacy progression compared to NEA 2021, by district



Note: Results are shown based on statistical significance testing.

5.1. Performance

This chapter presents the achievement of grade III students in the Dzongkha Reading Literacy test of the NEA 2024. The discussion focusses on the analysis of student mean scores, percentile distributions, proficiency levels, group differences, and contextual factors affecting student performance. Additionally, where possible, student performance is compared to that of grade III students in the NEA 2021 to analyse the progression in this domain relative to the previous NEA cycle.

The NEA 2021 results in this report may differ slightly from those previously published (BCSEA, 2023a), mostly due to the stricter statistical testing in this NEA cycle (i.e., it used a lower significance threshold) and minor changes to the approach used to estimate abilities from the item response theory model, as explained in the introduction section. The NEA 2021 results presented in this report are consistent with the methodology used for the NEA 2024. In other words, despite minor updates in methodology for the NEA 2024, meaningful comparisons with the NEA 2021 results are still possible. Detailed results for the NEA 2021, produced using the NEA 2024 methodology, are available in Appendix A: Cognitive results for NEA 2021, grade III.

5.1.1. Mean scores

Table 5.1 shows the mean scores of all of the districts, as well as the national mean. In addition to the mean scores, the standard error and 95% confidence intervals are provided for statistical comparison. T-tests were conducted to check if the mean score of each district was statistically different from the national mean. The results of these tests, including the p-values, are provided in the table. As explained in the introduction section, all significance testing in this report uses a critical value of $p<0.01$. For this reason, there are some instances in the table where the 95% confidence interval does not include the national mean, but the difference is not highlighted as statistically significant.

Table 5.1: Mean scores for grade III Dzongkha Reading Literacy by district

District	Mean	Standard error	95% confidence interval	p-value	Statistically different than the national mean?
Bumthang	321	5.81	309 – 332	0.004	Higher
Chukha	292	6.80	279 – 306	0.152	Not significant
Dagana	275	7.25	261 – 290	0.000	Lower
Gasa	285	14.83	256 – 314	0.253	Not significant
Gelephu Thromde	351	–	–	–	–
Haa	302	8.63	286 – 319	0.991	Not significant
Lhuentse	354	10.64	333 – 375	0.000	Higher
Mongar	306	6.53	294 – 319	0.578	Not significant
Paro	298	5.55	287 – 309	0.454	Not significant
Pemagatshel	281	5.24	270 – 291	0.000	Lower
Phuntsholing Thromde	329	4.80	320 – 339	0.000	Higher
Punakha	317	7.94	302 – 333	0.075	Not significant
Samdrup Jongkhar	280	12.35	256 – 304	0.073	Not significant
S. Jongkhar Thromde	326	12.92	301 – 352	0.071	Not significant
Samtse	269	7.64	254 – 284	0.000	Lower
Sarpang	305	13.19	280 – 331	0.829	Not significant
Thimphu	284	5.51	273 – 295	0.002	Lower
Thimphu Thromde	306	2.96	300 – 311	0.421	Not significant
Trashigang	328	4.95	319 – 338	0.000	Higher
Trashiyangtse	331	6.28	319 – 344	0.000	Higher
Trongsa	322	4.52	313 – 330	0.000	Higher
Tsirang	274	10.35	253 – 294	0.007	Lower
Wangdue Phodrang	306	6.69	293 – 320	0.585	Not significant
Zhemgang	333	6.42	320 – 346	0.000	Higher
National	**303**	**2.39**	**298 – 307**	–	–

Five districts – Samtse, Dagana, Pemagatshel, Thimphu, and Tsirang – had mean scores that were statistically significantly lower than the national mean. Among these districts, the lowest mean score was observed in Samtse. The students from Samtse performed lower than the national cohort by an average of 34 points (269 vs 303), which is a moderate-to-large difference. The mean scores for the other four districts were also comparatively low (in the range of 274 to 284), representing a 19- to 29-point difference compared to the national mean. These differences are (or are close to) moderate in size, considering they are roughly half a standard deviation (SD) in magnitude.

In contrast, seven districts – Lhuentse, Zhemgang, Trashiyangtse, Phuntsholing Thromde, Trashigang, Trongsa, and Bumthang – had mean scores that were statistically significantly higher than the national mean. The students from Lhuentse, in particular, scored 51 points higher than the national mean (354 vs 303), indicating that students in that district tended to perform a lot better than the national cohort of students. Students from the remaining

six districts also performed moderately better than other students nationally, by about 18 (Bumthang) to 30 points (Zhemgang).

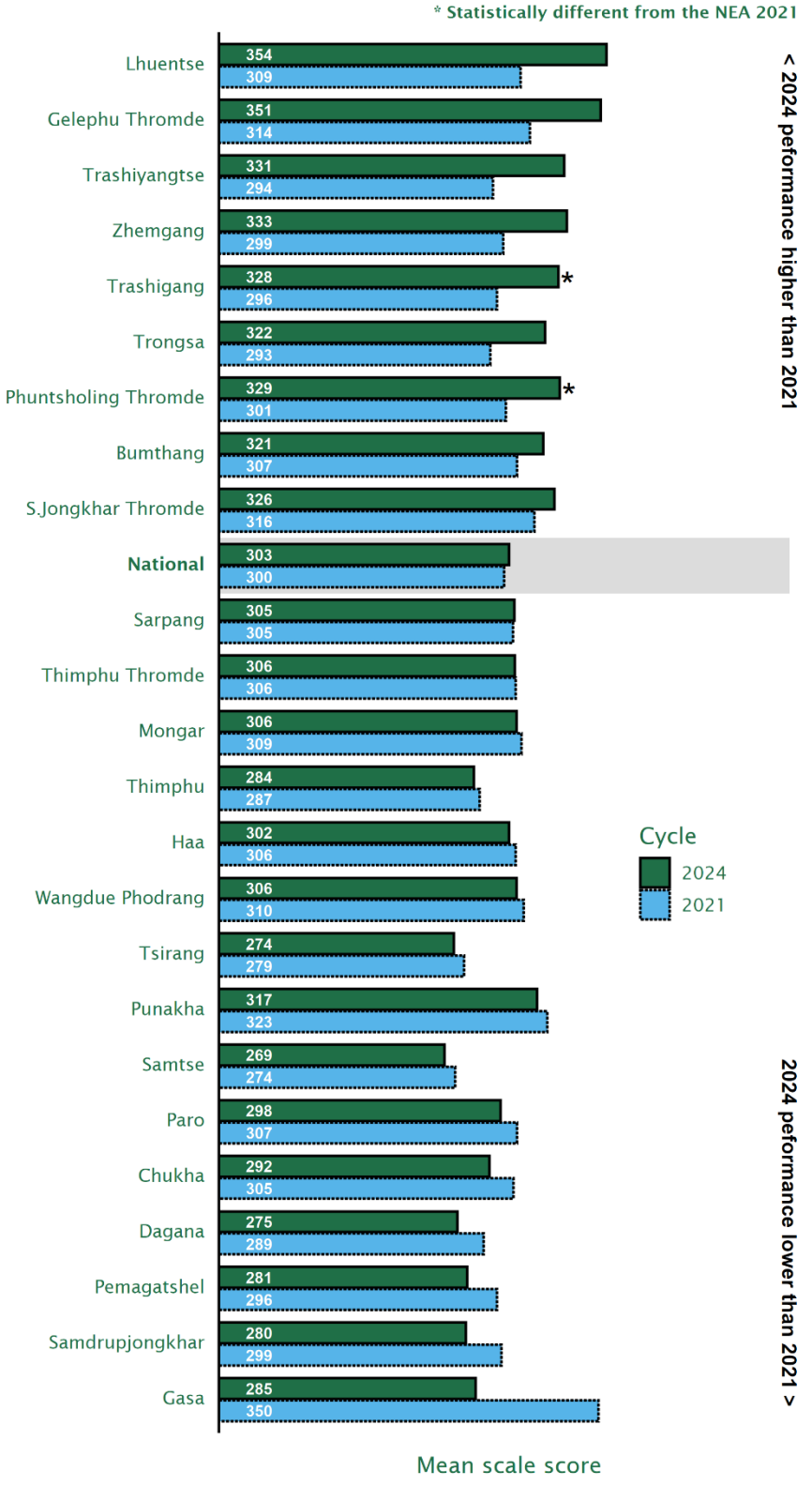
Note that even though Gelephu Thromde had a noticeably higher mean score, it was not statistically feasible to accurately quantify the uncertainty in this mean estimate as only one school participated. As such, significance testing was not conducted to compare the mean of this district to the national mean.

To understand grade III students' progression in Dzongkha Reading Literacy, Figure 5.1 presents the mean scores for both the NEA 2021 and the NEA 2024 cycles, for each district and nationally. It also indicates districts where changes in the mean score between the two NEA cycles are statistically significant. Nationally, the mean score has increased by only 3 points – from 300 (NEA 2021) to 303 (NEA 2024); this increment is not statistically significant. The districts showing statistically significant improvement in Dzongkha Reading Literacy in this NEA cycle were Trashigang (by 32 points) and Phuntsholing Thromde (by 28 points). Their mean scores were more than half a SD higher in the NEA 2024, compared to their respective performance in the NEA 2021, which suggests a moderate increase in performance.

Note that it is harder to detect statistical significance within individual districts than at national level, due to the small sample size. With this in mind, a lack of statistical significance in the change should not be seen as an indication that things have not improved within a district – only that we lack definitive evidence to be sure of this.

As before, even though Gelephu Thromde's mean score also rose noticeably, it was not feasible to conduct a significance test to compare the means between the two NEA cycles as standard errors were deemed unreliable. Additionally, even though Gasa's mean score was noticeably lower in this NEA cycle, the difference is not statistically significant due to the high standard error of the estimates, likely a result of substantial variation in school-level performance within the district.

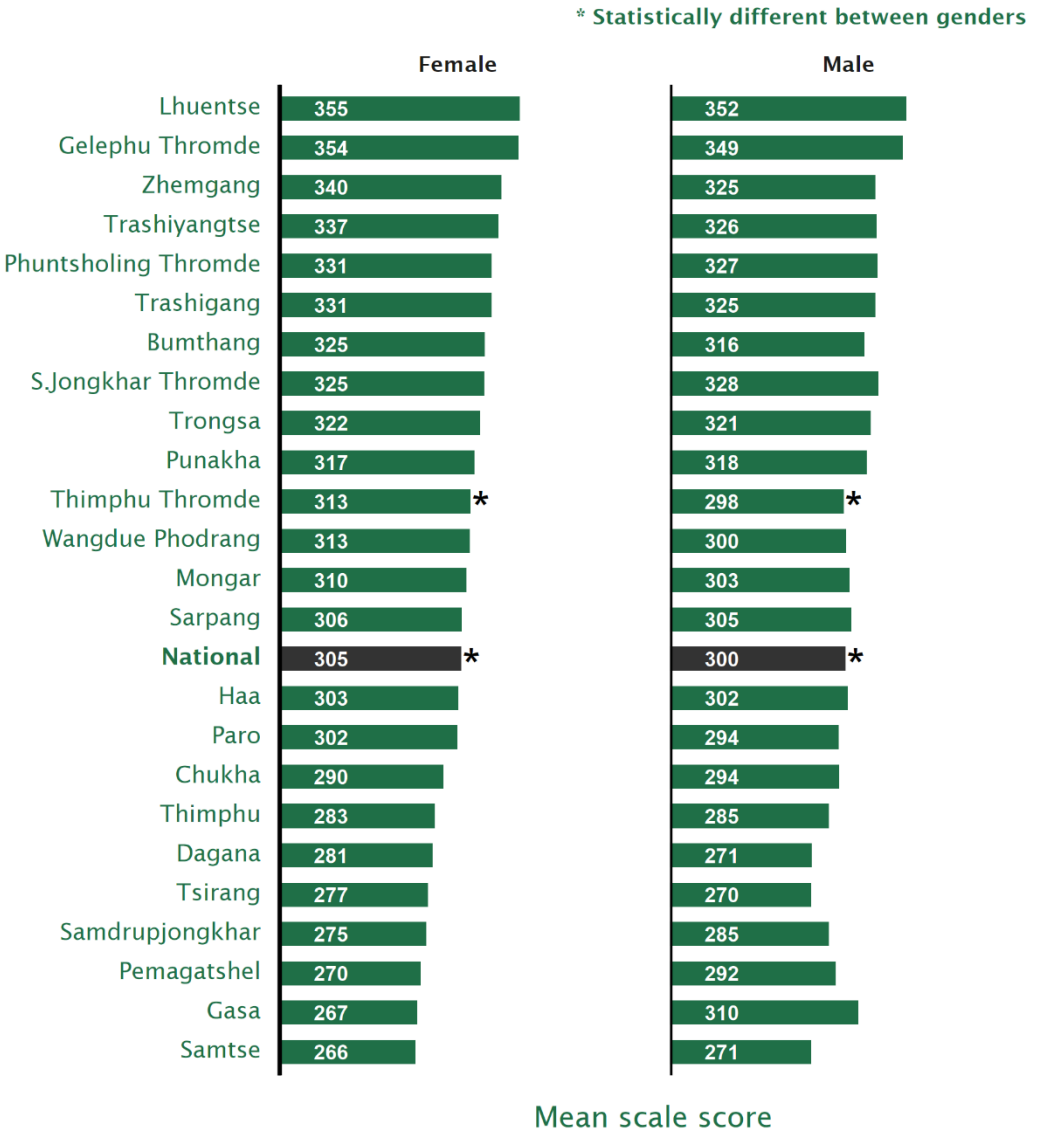
Figure 5.1: Mean scores for grade III Dzongkha Reading Literacy by district and NEA cycle



Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

Figure 5.2 compares mean Dzongkha Reading Literacy scores for boys and girls within each district, and indicates districts where the gender differences are statistically significant. It shows that, nationally, boys underperformed relative to girls by an average of 5 points, and the difference is statistically significant but practically small in size. Only in Thimphu Thromde was the gender difference found to be statistically significant: girls from that district outperformed boys by 15 points.

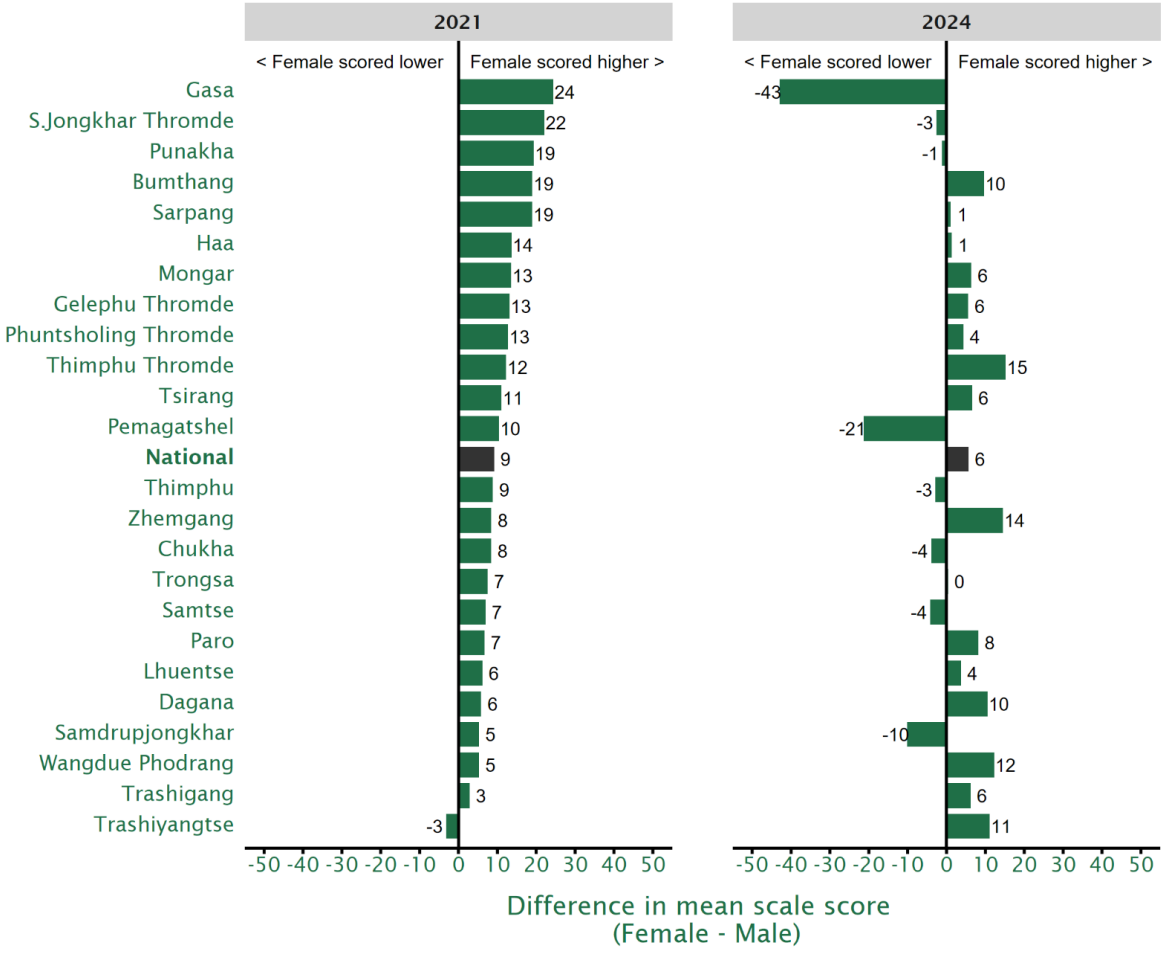
Figure 5.2: Mean scores for grade III Dzongkha Reading Literacy by district and gender



Notes: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution. Significance tests were not carried out for Gasa, Gelephu Thromde, Pemagatshel, and S.Jongkhar Thromde because only one or two schools participated.

Figure 5.3 more clearly depicts the magnitude of these performance differences; it shows the differences in mean scale score, by NEA cycle, between girls and boys, both nationally and for each district. The left-hand panel indicates that, in the NEA 2021, girls outperformed boys in most districts. The same pattern can also be seen in the right-hand panel, which reveals that, in the NEA 2024, girls tended to overperform boys in the majority of districts. However, it is important to note that the gender differences were only statistically significant nationally and in Thimphu Thromde (see previous graph).

Figure 5.3: Gender differences in grade III Dzongkha Reading Literacy performance by district and cycle



5.1.2. Percentile distributions

The percentile distribution illustrates how students' performance is spread across the range of possible scores. It helps indicate a student's standing relative to the rest of the group. In the context of the NEA, a percentile score represents the scale score below which a certain percentage of students fall. For example, the 5th percentile score in Dzongkha Reading Literacy indicates that 5% of students scored below that value.

Percentile distributions also provide insight into the degree of variation in student performance. The range between the 25th and 75th percentiles – known as the interquartile range – captures the middle 50% of scores. Meanwhile, the range between the 5th and 95th percentiles includes 90% of all scores. A wider range suggests greater variability in performance among students, while a narrower range indicates more similarity.

Table 5.2: Percentile scores in grade III Dzongkha Reading Literacy, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	214	270	304	339	400	69	186
Male	220	270	296	328	383	58	162
National	**215**	**270**	**304**	**335**	**391**	**65**	176

Table 5.2 presents the percentile scores and the ranges for the NEA 2024 Dzongkha Reading Literacy test, both nationally and by gender. Nationally, 50% of students scored between 270 and 335, while 90% scored between 215 and 391.

When broken down by gender, the findings show that the distribution of scores for girls was marginally wider than that of boys. The interquartile range (25th–75th percentile) was 69 points for girls and 58 points for boys. Similarly, the range between the 5th and 95th percentiles was wider for girls than for boys, at 186 and 162 points, respectively.

Figure 5.4 illustrates the percentiles scores, alongside the mean score, for both NEA cycles. It shows a small increase of 5 points in the boys' mean score: from 295 (NEA 2021) to 300 (NEA 2024). However, there was no increment in the girls' performance between the two cycles: they scored 305 in both NEA 2021 and NEA 2024. Another observation is that the score distribution for girls widens at the bottom end of the distribution compared to the previous cycle. This pattern is not as visible in the score distribution for boys. This suggests that the performance of lower-performing girls varied more in the NEA 2024 than in the NEA 2021. Nationally, the score distribution remains very similar in both NEA cycles. This implies that the overall performance in grade III Dzongkha Reading Literacy was broadly similar across all ability levels.

Figure 5.4: Percentile scores in grade III Dzongkha Reading Literacy by gender and NEA cycle

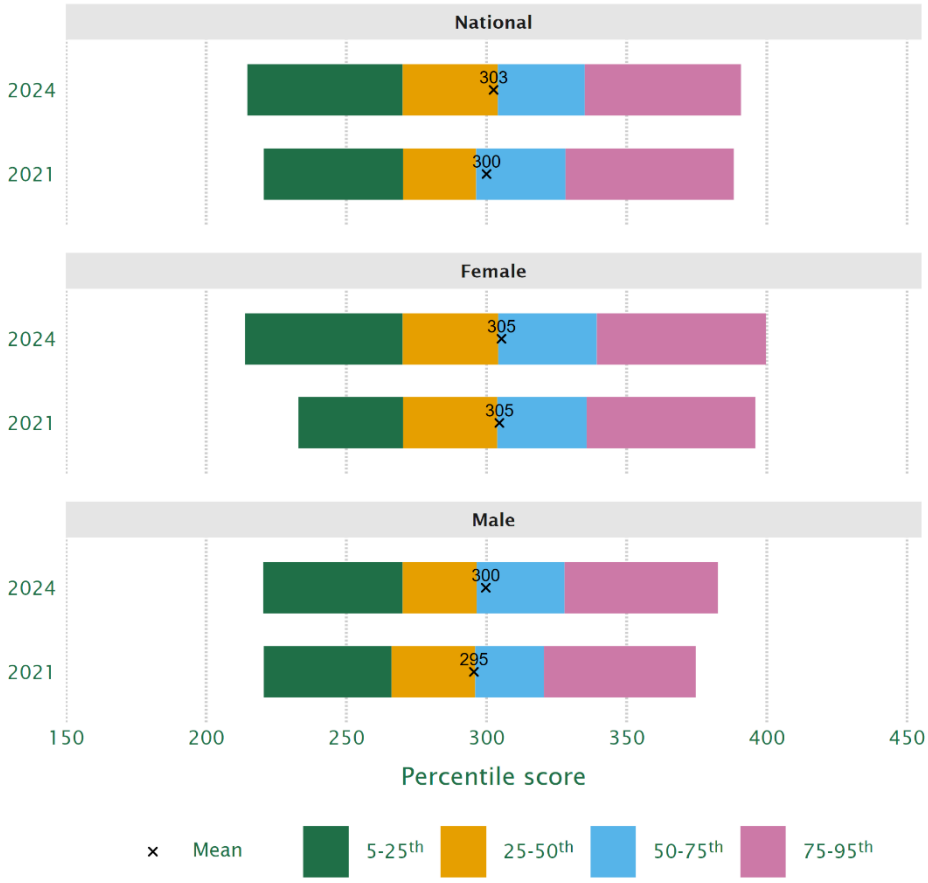


Table 5.3 shows the percentile score distribution by district, and Figure 5.5 visualises the distribution alongside the mean score for each district. Districts shown on Figure 5.5 are ordered from highest to lowest mean score. The results show some variation in score ranges across districts.

The district with the narrowest interquartile range was Pemagatshel (46), followed closely by Bumthang (48), suggesting that student performance in these districts was more consistent compared to the variation observed in other districts.

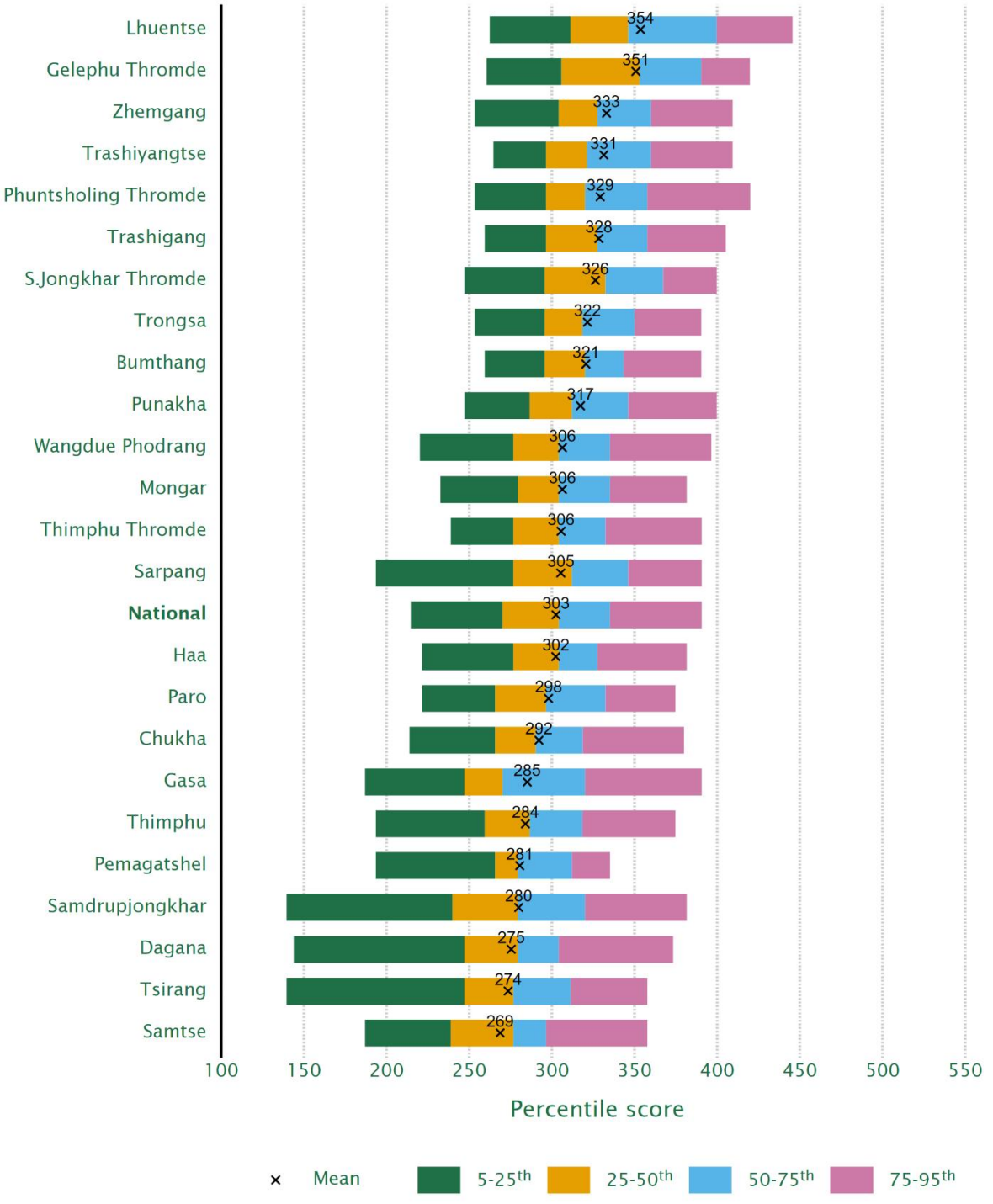
In contrast, Lhuentse had the widest interquartile range (88), indicating greater variability in student performance compared to other districts. As can be seen in Figure 5.5, the distributions from the 5th–95th percentile for Samdrup Jongkhar, Dagana, and Tsirang were also much wider compared to the national distribution. In each of these districts, the range for the lowest percentile (5th–25th) was particularly wide, indicating that performance amongst the lower-performing students in those districts varied greatly.

Table 5.3: Percentile scores in grade III Dzongkha Reading Literacy, nationally and by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	259	296	320	343	390	48	131
Chukha	214	266	290	319	380	53	166
Dagana	144	247	280	304	373	57	229
Gasa	187	247	270	320	391	73	204
Gelephu Thromde	261	306	353	390	420	84	159
Haa	221	277	304	328	382	51	160
Lhuentse	262	311	346	400	445	88	183
Mongar	233	280	304	335	382	56	149
Paro	222	266	296	332	375	67	153
Pemagatshel	194	266	280	312	335	46	142
Phuntsholing Thromde	254	296	320	358	420	61	167
Punakha	247	287	312	346	400	60	152
Samdrup Jongkhar	140	240	280	320	382	80	242
S.Jongkhar Thromde	247	296	332	367	400	72	152
Samtse	187	239	277	296	358	58	171
Sarpang	194	277	312	346	391	69	197
Thimphu	194	259	287	319	375	59	181
Thimphu Thromde	239	277	304	332	391	56	152
Trashigang	259	296	328	358	405	61	146
Trashiyangtse	265	296	321	360	409	64	145
Trongsa	254	296	319	350	390	54	137
Tsirang	140	247	277	311	358	64	218
Wangdue Phodrang	220	277	304	335	396	58	176
Zhemgang	254	304	328	360	409	56	156
National	**215**	**270**	**304**	**335**	**391**	**65**	**176**

Another observation from Figure 5.5 is that while the difference in mean scores between some districts was small, the score distribution can vary noticeably between them. One such example is Samdrup Jongkhar and Pemagatshel: the mean scores for these two districts differed by just 1 point, but the scale range for the 5th–95th percentiles was much wider for Samdrup Jongkhar. This suggests that while average performance was similar in the two districts, Samdrup Jongkhar had a more heterogeneous group of grade III students in their Dzongkha Reading Literacy performance than Pemagatshel.

Figure 5.5: Percentile scores in grade III Dzongkha Reading Literacy, nationally and by district



5.1.3. Proficiency levels

Table 5.4 shows the proficiency levels developed to describe performance in grade III Dzongkha Reading Literacy, which are identical to those from the NEA 2021. The lowest proficiency level is Level 1, and the highest proficiency level is Level 4. The description for

each proficiency level indicates the skills and knowledge students at that level are expected to be able to demonstrate.

Table 5.4: Proficiency descriptions for grade III Dzongkha Reading Literacy

Proficiency level སྐྱེ་རིམ།	Description འགྲེལ་བཤད།
བཞི་པ།	དA་ཁག་འདི་ནང་གི་ སློབ་ཕྲུག་ཚུ་གིས་ ཡིག་བྲིངས་རྣམ་པ་མ་འདྲཝ་ རིགས་ཚུ་ལྷག་སྟེ་ འདི་ནང་ལས་ སྐྱོན་ཡོན་གྱི་བདམས་འཆར་བཀོད་ ཚུགསཔ་མ་ཚད་ རང་སྟོབས་ཀྱིས་གནང་རིམ་དང་བསྟུན་པའི་ དོན་ཚན་དེའི་ཐོག་ལུ་ ཁུངས་དོན་བཀོད་དེ་ རང་དབྱེའི་རིག་སྟོབས་དང་བསྟུན་ པའི་ བདམས་ཞིབ་དང་དA་ཞིབ་ཚུ་འབད་ཚུགསཔ། དེ་ཡང་ དོན་ཚན་འདི་དང་ རིགས་བསྒྲིང་ཏེ་ རྒྱུ་བཤད་རྒྱུབ་ནི་དང་ བསྡུད་བསྡུ་ནི་ གཞན་ཡང་ དོན་ཚན་འདིའི་ཐོག་ལུ་ འདྲི་སྐོང་ཚུ་འབད་ཚུགས་པའི་ཁར་ ཁྲིད་པར་ཡོང་ཐུབ་ཚུགསཔ།
གསུམ་པ།	དA་ཁག་འདི་ནང་གི་སློབ་ཕྲུག་ཚུ་གིས་ ཡིག་བྲིངས་ཚུ་ལྷག་སྟེ་ འདི་ནང་ལས་ བརྗོད་དོན་འཚོལ་ཚུགས་པའི་ཁར་ རིགས་སྒྲི་གི་བཤད་པ་རྒྱབ་ ཚུགསཔ། དེ་བཟུམ་སྦེ་ ཡིག་བྲིངས་མ་འདྲཝ་ཚུ་ ལྷག་ཞིནམ་ལས་དོན་ཚན་ཚུ་ལུ་ ཁྲིད་པར་ཕྱེད་ཚུགསཔ་མ་ཚད་ གོ་དོན་ཚུ་ཡོད་བརྗོད་ སྐྱུར་འབད་ཚུགསཔ་ཨིན། གཞན་ཡང་ ཡིག་བྲིངས་ཀྱི་བསྡུད་དོན་ བརྗོད་ཚུགས་ནི་དང་ བརྗོད་དོན་དA་དཔྱད་འབད་དེ་ གདམ་འཐུ་འབད་ ཚུགསཔ་ཨིན། དེ་མ་ཚད་ གནང་རིམ་དང་བསྟུན་པའི་རྒྱུ་མཚན་བཀོད་ཐོག་ལས་ རང་དབྱེའི་བདམས་འཆར་ཚུ་ བཀོད་ཚུགསཔ།
གཉིས་པ།	དA་ཁག་འདི་ནང་གི་ སློབ་ཕྲུག་ཚུ་གིས་ རྫོང་ཚིག་དང་ བཤད་པ་ རན་ཏོག་ཏོ་ཡོད་པའི་ ཡིག་བྲིངས་ཚུ་ལྷག་སྟེ་ འདི་ནང་ལས་ བརྗོད་དོན་ འཚོལ་ཏེ་ བཤད་པ་རྒྱབ་ཚུགས་པའི་ཁར་ ངོ་འཛིན་འབད་དེ་ གདམ་ཁ་རྒྱབ་ཚུགསཔ། དེ་ཡང་ མིང་ཚིག་བརྡ་སྐྱུར་འབད་དེ་ བསྡུད་དོན་ལེན་ ཚུགསཔ་མ་ཚད་ མིང་ཚིག་ཚུ་ལྷག་སྟེ་ གོ་དོན་ལེན་ཚུགསཔ་ཨིན། དེ་མ་ཚད་ ཡིག་བྲིངས་ཚུ་ལྷག་སྟེ་ ཁ་ཕན་དA་དཔྱད་འབད་ཞིནམ་ལས་ རྒྱུ་མཚན་ཚུ་ཡོད་ བཀོད་ཚུགསཔ།
དང་པ།	དA་ཁག་འདི་ནང་གི་སློབ་ཕྲུག་ཚུ་གིས་ བཤད་པ་ཐུང་ཀུ་ཡོད་པའི་ ཡིག་བྲིངས་ཚུ་ལྷག་སྟེ་ འདི་ནང་ལས་ གོ་དོན་ལེན་ཏེ་ བརྗོད་དོན་འཚོལ་ ཚུགས་པའི་ཁར་ ཅ་ཆས་ཚུ་ ངོ་འཛིན་འབད་དེ་ མིང་སྨ་ཚུགསཔ། དེ་མ་ཚད་ གནང་ཚད་དང་མཐུན་པའི་ དོན་ཚན་གྱི་ཐོག་ལུ་ བཤད་པ་ ཐུང་ཀུ་རེ་རྒྱབ་ཚུགས་ནི་དང་ 'ངང་ཁ་ཡོད་བརྗེ་ཚུགས་ནི་ཨིན། དེ་ཡང་ སློབ་ཕྲུག་ཚུ་གིས་ བརྡ་རྟགས་ཚུ་ བརྡ་སྐྱུར་འབད་ནི་དང་ པར་ ལུ་བལྟ་སྟེ་ མཐུན་སྒྲིག་འབད་ཚུགསཔ་མ་ཚད་ དོན་དག་ཚུ་ཡོད་ཏ་གོ་ཚུགསཔ་ཨིན།

In the NEA 2021, it was decided by various educational stakeholders in the country that students were expected to reach at least Level 2 by the end of grade III. Thus, students with scores between Level 2 and Level 4 (and above in future NEAs) are considered to have met the minimum proficiency level of grade III.

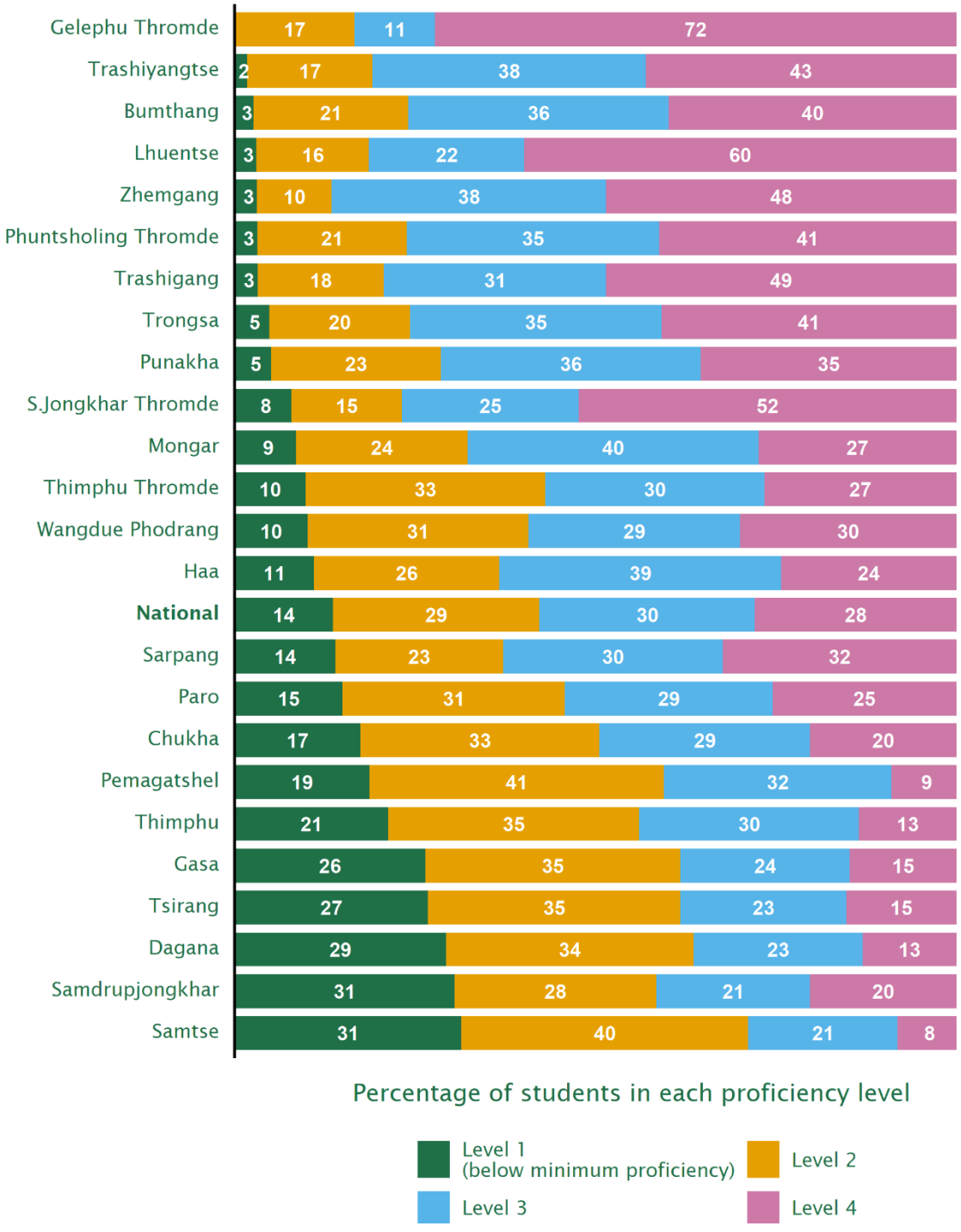
Table 5.5 shows the percentage of students at each proficiency level, and the total percentage of students who achieved the minimum level of proficiency (Level 2 and above). Figure 5.6 visualises these results, ordered from the highest to the lowest percentage of students, with the districts with the highest percentage of students meeting the minimum proficiency level at the top, and the districts with the lowest percentage of students meeting the minimum proficiency level at the bottom of the graph.

Table 5.5: Percentage of students at each proficiency level for grade III Dzongkha Reading Literacy by district

District	Percentage at each level				Percentage of students achieving minimum proficiency (%)
	Level 1	Level 2	Level 3	Level 4	
Bumthang	2.7	21.4	36.2	39.8	97.3
Chukha	17.5	33.1	29.2	20.2	82.5
Dagana	29.3	34.3	23.4	12.9	70.7
Gasa	26.5	35.3	23.5	14.7	73.5
Gelephu Thromde	0.0	16.7	11.1	72.2	100.0
Haa	11.0	25.7	39.1	24.2	89.0
Lhuentse	3.1	15.6	21.5	59.8	96.9
Mongar	8.6	23.7	40.3	27.4	91.4
Paro	15.0	30.8	28.8	25.4	85.0
Pemagatshel	18.7	40.8	31.6	8.9	81.3
Phuntsholing Thromde	3.2	20.7	34.9	41.2	96.8
Punakha	5.1	23.5	36.1	35.3	94.9
S. Jongkhar Thromde	7.9	15.3	24.5	52.3	92.1
Samdrup Jongkhar	30.5	27.9	21.4	20.2	69.5
Samtse	31.4	39.8	20.7	8.1	68.6
Sarpang	14.0	23.2	30.5	32.3	86.0
Thimphu	21.3	34.8	30.5	13.4	78.7
Thimphu Thromde	9.9	33.2	30.4	26.6	90.1
Trashigang	3.2	17.5	30.7	48.5	96.8
Trashiyangtse	1.8	17.3	37.8	43.0	98.2
Trongsa	4.8	19.5	34.8	40.8	95.2
Tsirang	26.8	35.0	23.0	15.2	73.2
Wangdue Phodrang	10.1	30.6	29.3	29.9	89.9
Zhemgang	3.1	10.3	38.1	48.5	96.9
National	**13.6**	**28.6**	**29.9**	**27.8**	**86.4**

Nationally, 86% of the students met the minimum proficiency level for grade III Dzongkha Reading Literacy in the NEA 2024, with 29%, 30%, and 28% of students at Level 2, Level 3, and Level 4, respectively. In other words, 14% of the students did not meet the minimum level (i.e., Level 1).

Figure 5.6: Percentage of students at each proficiency level for grade III Dzongkha Reading Literacy by district



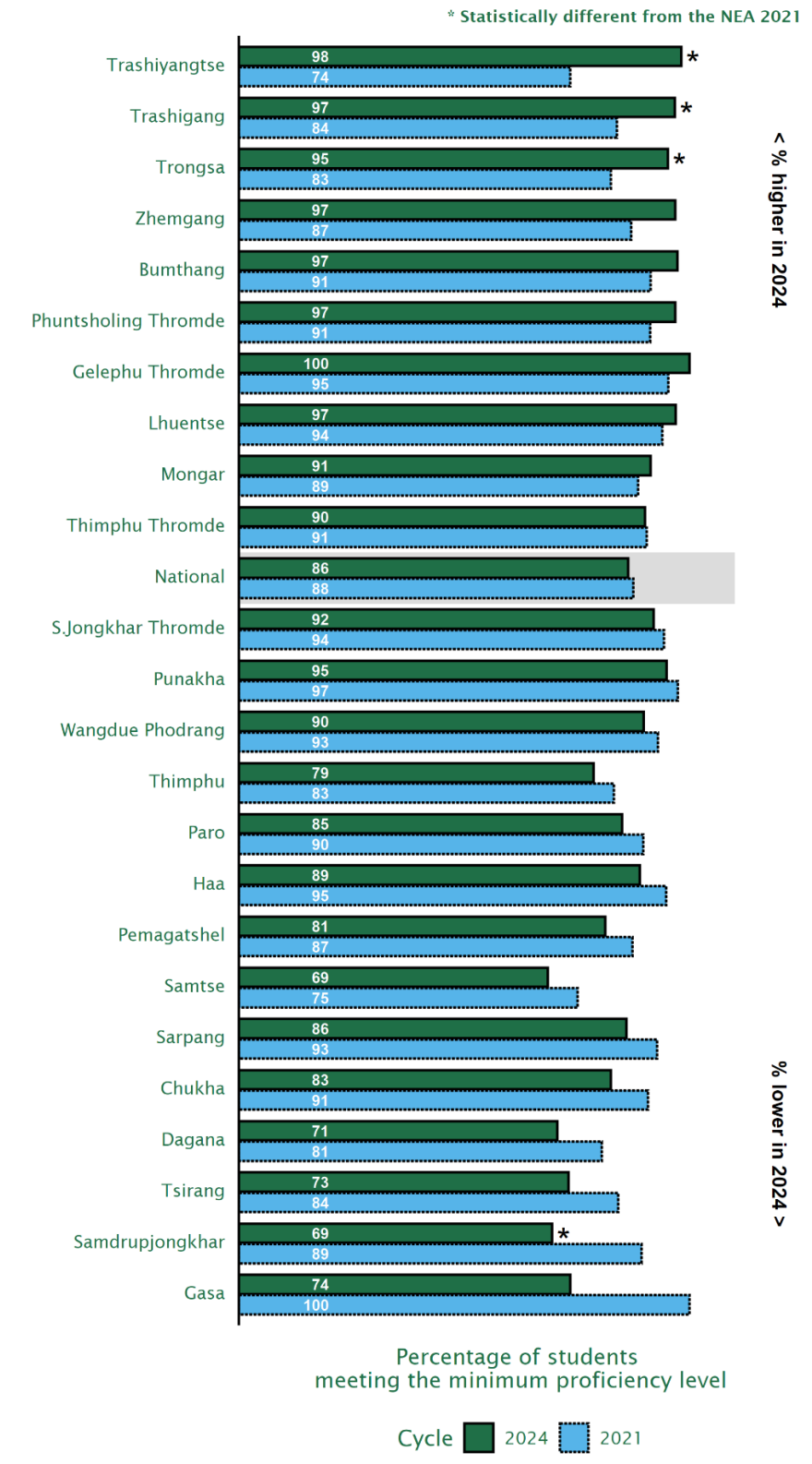
Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

All of the students in Gelephu Thromde met the minimum proficiency level, but this is based upon a small sample in a single school. Excluding Gelephu Thromde, the percentage of students who met the minimum proficiency level in Dzongkha Reading Literacy across all of the other districts ranged widely from 69% (Samtse and Samdrup Jongkhar) to 98% (Trashiyangtse).

The wide range of percentages suggests that students' proficiency in Dzongkha Reading Literacy varied greatly across the districts. Six districts have at least 20% of students not meeting the minimum proficiency level: Thimphu, Gasa, Tsirang, Dagana, Samdrup Jongkhar, and Samtse. In contrast, in other districts, such as Punakha and Trongsa, only 5% or less of students are not meeting the minimum proficiency level.

To understand changes between the NEA cycles, Figure 5.7 compares the percentage of students who met the minimum proficiency level in each district and by cycle. It also indicates districts where statistically significant changes were detected in the percentage of students who achieved each proficiency level. In Trashiyangtse, Trongsa, and Trashigang, the percentage of students meeting the minimum proficiency level have significantly increased: by 24, 12, and 13 percentage points, respectively. In contrast, in Samdrup Jongkhar, significantly more students were not meeting the minimum proficiency level in this NEA cycle. In the NEA 2021, 89% of students met the minimum proficiency level; in the NEA 2024, this has fallen to about 69% of students, representing a drop of 20 percentage points.

Figure 5.7: Percentage of students meeting the minimum proficiency level by district and NEA cycle



Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

5.2. Performance gaps in context

5.2.1. Performance by student characteristics

Figure 5.8 shows the mean scores for Dzongkha Reading Literacy by Early Childhood Care and Development (ECCD) participation, gender, and children with disabilities (CWD) status. The performance gaps were of broadly similar size between the different student groups. Students without disabilities outperformed students with disabilities by 7 points; students with ECCD participation outperformed students without ECCD participation by 5 points; and girls outperformed boys by 6 points. Only those gaps between students with different ECCD participation and genders were statistically significant, but they are, in both cases, practically small in size.

Figure 5.8: Mean scores for grade III Dzongkha Reading Literacy by student characteristics

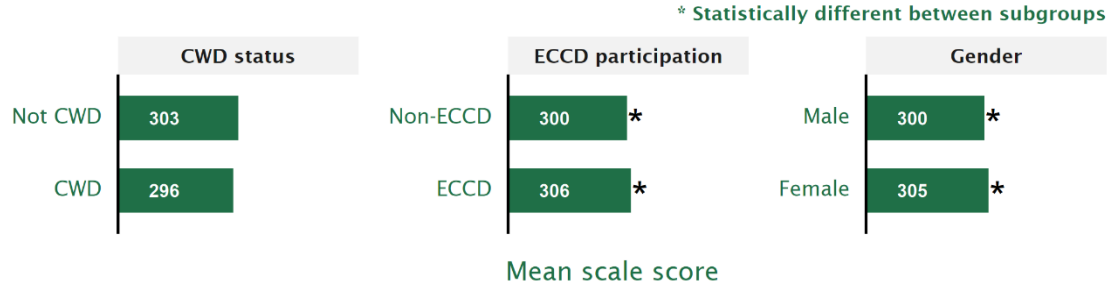
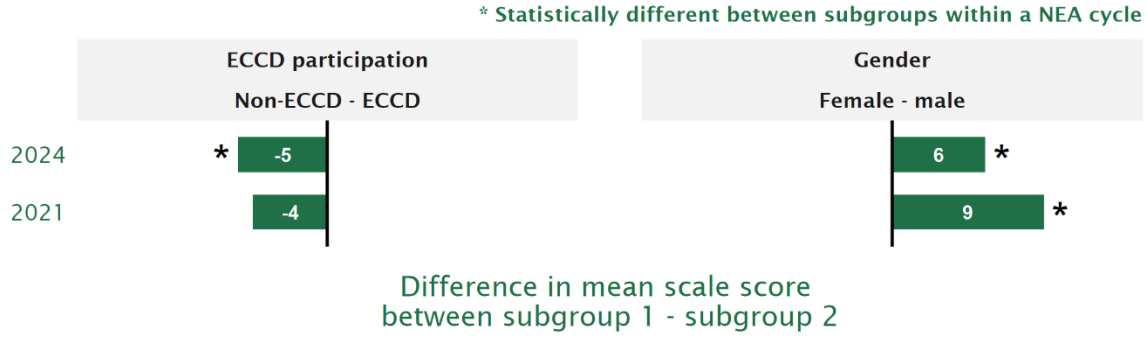


Figure 5.9 more clearly depicts the performance gap; it shows the difference in mean scores, for both NEA cycles, between students without ECCD participation and those with ECCD participation, and between girls and boys. Note that performance gaps for students with disabilities are not presented in Figure 5.9, as the performance of these students was not evaluated independently in the NEA 2021. Figure 5.9 also indicates whether each performance gap was statistically significant in its respective NEA cycle. For instance, the top bar in the left-hand panel shows that students without ECCD participation underperformed relative to students with ECCD participation by an average of 5 points, and this difference is statistically significant. Due to rounding, it is possible that the differences shown do not perfectly match those indicated in Figure 5.8.

Results from Figure 5.9 indicate that the performance gap between students with and without ECCD participation has marginally widened by 1 point in the NEA 2024. In contrast, the gender gap is smaller in the NEA 2024.

Figure 5.9: Performance gaps in grade III Dzongkha Reading Literacy by student characteristics and NEA cycle



Note: The performance of children with disabilities was not investigated in NEA 2021.

5.2.2. Performance by family characteristics

Figure 5.10 shows the mean scores for Dzongkha Reading Literacy by students' family income, parental education, and main language spoken by the students at home. A small performance gap was observed between students from families with different income levels. In particular, students from a higher income group tended to marginally outperform students from lower-income families. For instance, the performance gap was 14 points between students from the highest (more than Nu 500000) and lowest (less than Nu 100000) family income groups. The magnitude of difference was more than 0.3 of a SD, representing a small difference.

Secondly, students who spoke English at home tended to underperform students who spoke Dzongkha or other languages at home. As can be seen in the figure, students who spoke English at home scored, on average, 296 – 12 points lower than Dzongkha-speaking students and 5 points lower than students who spoke languages other than Dzongkha at home. The performance differences between these students are statistically significant, but small in size.

Unlike other grade III domains, there is no evidence to suggest statistically significant performance gaps between students with parents from different education backgrounds. This applies to both the mother's and the father's education. These gaps suggest that student performance in Dzongkha Reading Literacy is somewhat related to their family income and the language they speak at home.

Figure 5.10: Mean scores for grade III Dzongkha Reading Literacy by family characteristics

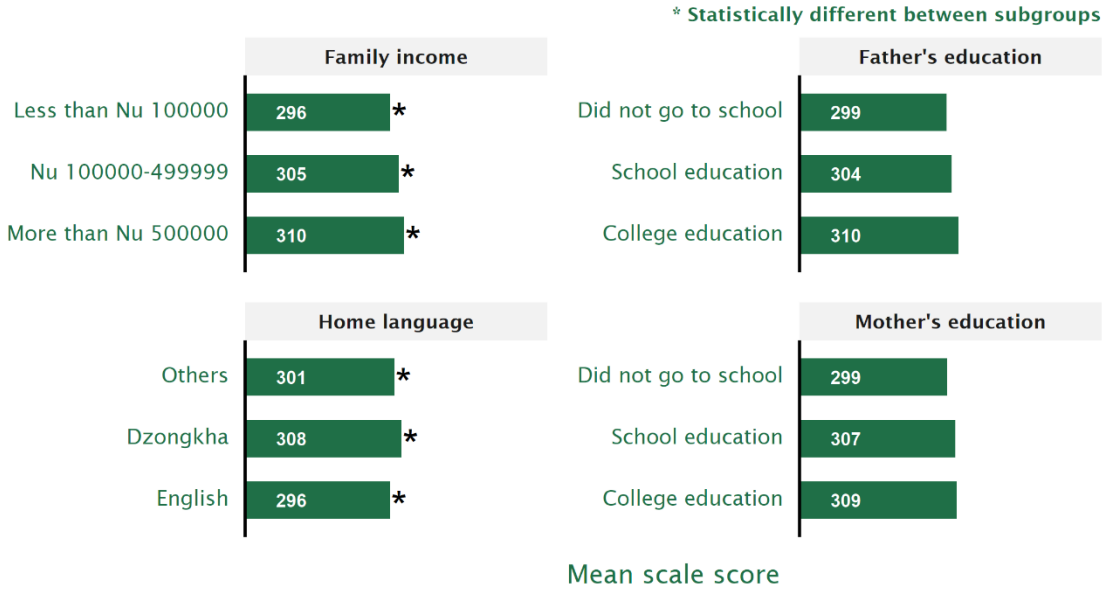
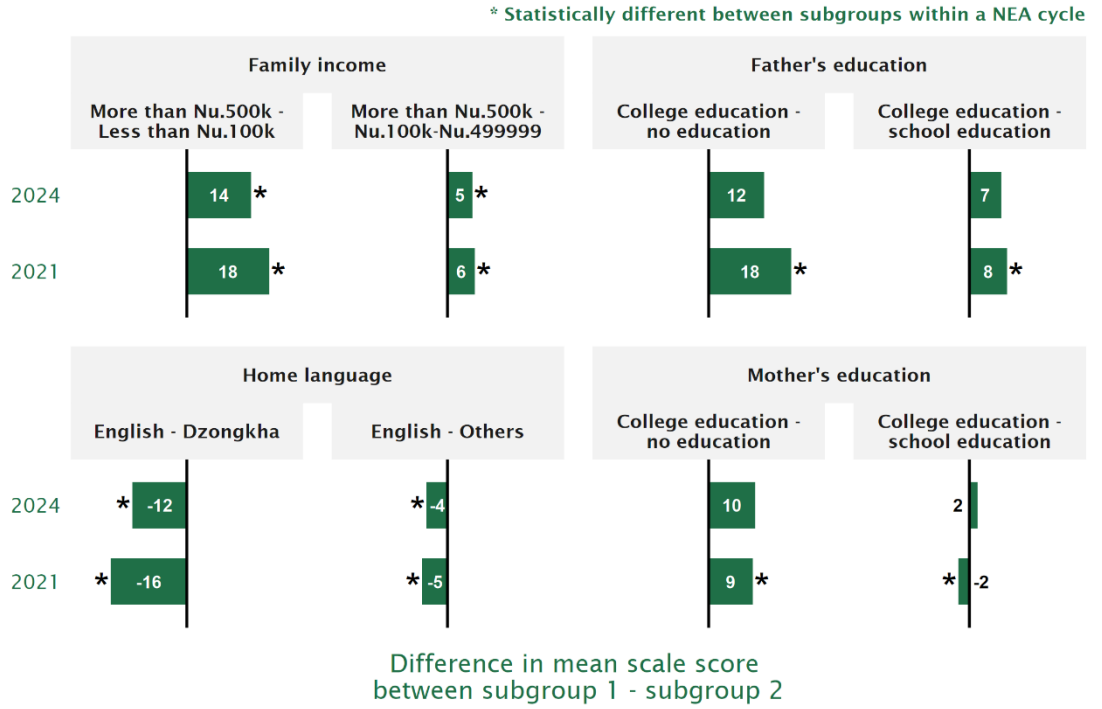


Figure 5.11 more clearly depicts the performance gap; it shows the difference in mean scores between different subgroups of students based on their family characteristics, for both NEA cycles. For instance, the top bar in the far-left panel shows that, in the NEA 2024, students from families with an annual income above Nu 500000 scored, on average, 14 points higher than those from families who earned less than Nu 100000 per year – this difference is statistically significant. Due to rounding, it is possible that the differences shown do not perfectly match those indicated in Figure 5.10.

Results from Figure 5.11 indicate that performance gaps between students with different family backgrounds were observed in both the NEA 2021 and 2024. While some of these gaps persisted in the 2024 cycle, their magnitude was generally smaller compared to 2021, suggesting that the gaps are narrowing.

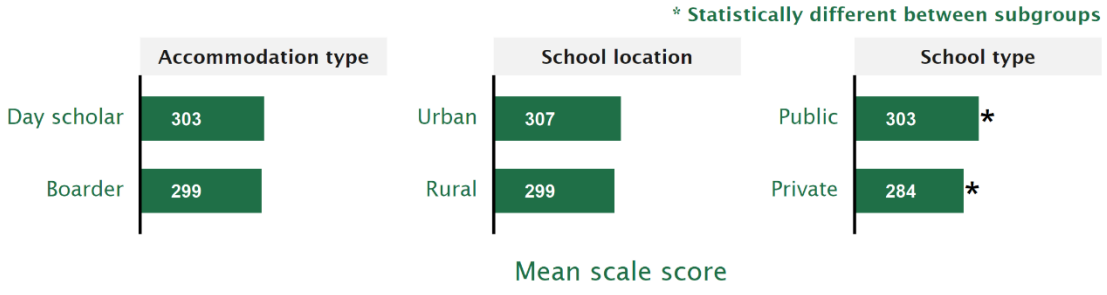
Figure 5.11: Performance gap in grade III Dzongkha Reading Literacy by family characteristics and NEA cycle



5.2.3. Performance by school characteristics

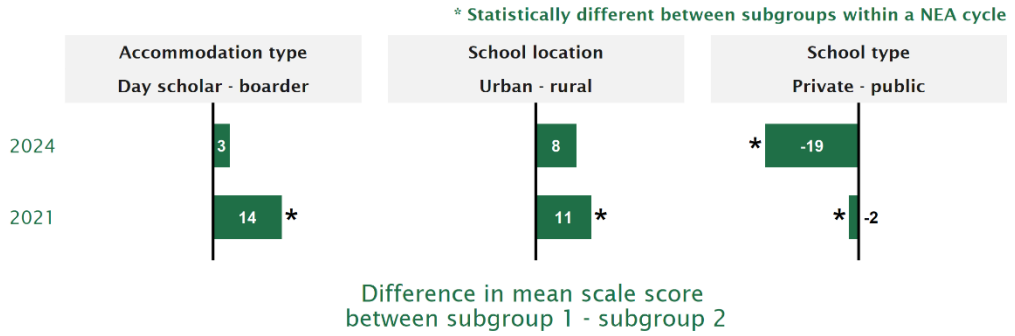
Figure 5.12 shows the mean scores for Dzongkha Reading Literacy by students' accommodation type, school location, and school type. The only performance gap observed was between students from private and public schools. On average, students who studied in private schools scored 284, which was 19 points lower than the mean score of students from public schools. This difference is statistically significant and practically small-to-moderate in size (almost 0.4 of a SD).

Figure 5.12: Mean scores for grade III Dzongkha Reading Literacy by school characteristics



As before, Figure 5.13 more clearly depicts the performance gap; it shows the difference in mean scores, for both NEA cycles, between different subgroups of students based on their school types. For instance, the top bar in the far-left panel shows that, in the NEA 2024, students who were day scholars scored, on average, 3 points higher than boarders; however, this difference is not statistically significant. Due to rounding, it is possible that the differences shown do not perfectly match those indicated in Figure 5.12.

Figure 5.13: Performance gaps in grade III Dzongkha Reading Literacy by school type and NEA cycle



Findings from Figure 5.13 suggest that the performance gap between urban and rural schools, and between day scholars and boarders, had narrowed (and was not statistically significant) relative to those observed in the NEA 2021. However, the performance gap between students from private and public schools was more noticeable in this cycle, compared to the previous NEA cycle.

5.3. Summary and conclusion

This chapter presents and discusses the findings from the grade III Dzongkha Reading Literacy test. Key findings and recommendations are summarised below.

National: There was no significant improvement in the Dzongkha Reading Literacy performance of grade III students in this NEA cycle, compared to the previous NEA cycle. In particular, the mean score increased from 300 (NEA 2021) to 303 (NEA 2024), representing an increment of only 3 points and, most importantly, not statistically significant. In 2024, about 86% of students met the minimum proficiency level set by various educational stakeholders – 2 percentage points lower than in the NEA 2021. In other words, proportionally, marginally more grade III students failed to meet the minimum proficiency level in this NEA cycle compared to the NEA 2021. These findings suggest the need for additional policy efforts to support students in their learning and teachers in teaching Dzongkha Reading in order to improve the national performance of grade III students in this domain.

District: Many districts performed statistically significantly better than the national cohort of students: Lhuentse, Zhemgang, Trashiyangtse, Phuntsholing Thromde, Trashigang, Trongsa, and Bumthang. In these districts, just 5% or less of students did not meet the minimum proficiency level. Additionally, student performance in Phuntsholing Thromde and Trashigang significantly improved in the NEA 2024, compared to the NEA 2021, suggesting that existing initiatives or interventions implemented in these districts are effective in improving students' acquisition of Dzongkha Reading Literacy. In contrast, the lowest performing district in Dzongkha Reading Literacy was Samtse. Performances in Tsirang, Dagana, Pemagatshel, and Thimphu were also found to be statistically lower than the national mean. In all of these districts, at least 19% (but up to 31%) of students did not meet the minimum proficiency level. This indicates a stark difference between the lower- and higher-performing districts, suggesting a wide inequality in Dzongkha Reading Literacy across districts in Bhutan. This finding underscores the need to investigate the underlying causes of low performance in these districts. Additionally, it highlights the importance of allocating additional support, and implementing targeted policies that prioritise students from these districts.

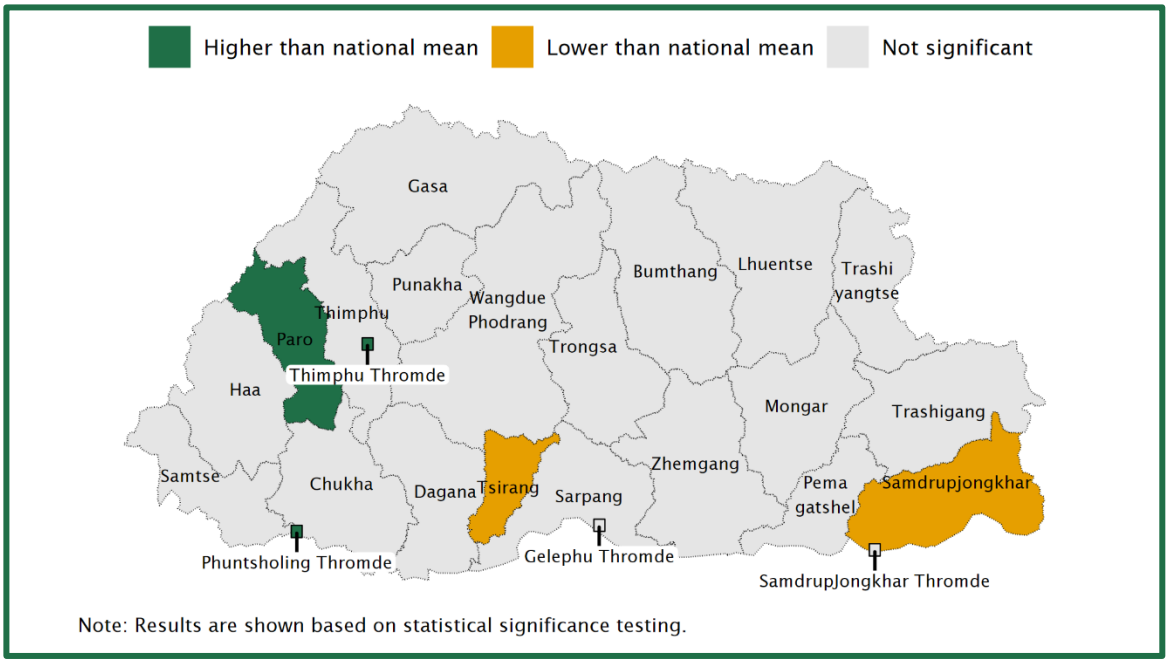
Gender: A significant, but practically small, difference was found in the performances of girls and boys. In the NEA 2024, girls marginally outperformed boys in Dzongkha Reading Literacy at the national level. When compared to the NEA 2021, the gender gap in this cycle was found to be smaller. We did not find evidence to suggest that this gender gap is statistically significant in individual districts, with the exception of Thimphu Thromde. In this district, girls outperformed boys by an average of 15 points.

CWD: Students with disabilities underperformed relative to students without disabilities by 7 points, but the evidence suggests that this performance gap is not statistically significant.

Other characteristics: Statistically significant performance gaps were found in some student, family, and school characteristics investigated, but they are comparatively smaller compared to gaps seen in other grade III domains. The biggest performance gaps (small-to-moderate in size) were found between students from different school types, with students from private schools tending to underperform those who studied in public schools. Some gaps were also found between students from families with different income levels, and between students who speak different languages at home. These findings suggest that the type of school at which the student studied, the language they speak at home, and their family income are among the things related to their performance in Dzongkha Reading Literacy. More positively, evidence indicated that some of these performance gaps were marginally smaller than those observed in the NEA 2021, suggesting that the gaps may be narrowing. This finding suggests that existing policy efforts to address educational inequalities may be effective in narrowing performance gaps, but continued policy attention and resources are likely needed to further close these gaps.

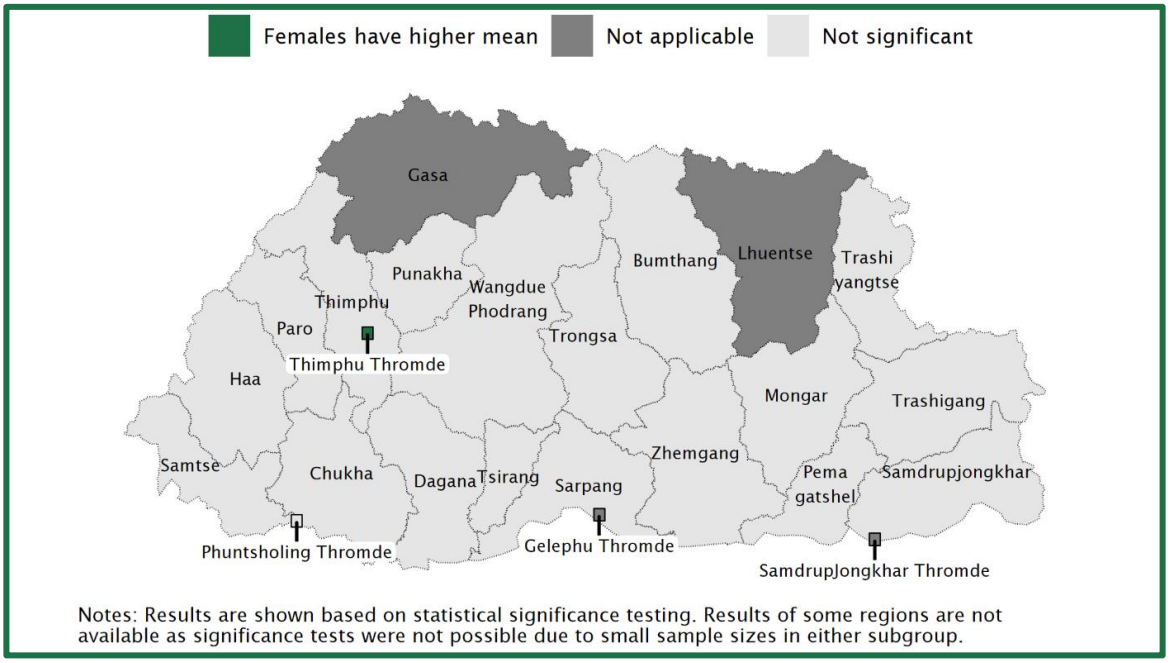
Chapter 6. Achievement of grade VI students in English Reading Literacy

Summary 6.1: Student achievement in grade VI English Reading Literacy by district



Note: Results are shown based on statistical significance testing.

Summary 6.2: Student achievement in grade VI English Reading Literacy by district and gender



Notes: Results are shown based on statistical significance testing. Results of some regions are not available as significance tests were not possible due to small sample sizes in either subgroup.

6.1. Performance

This chapter presents the achievement of grade VI students in the English Reading Literacy test of the NEA 2024. The discussion focusses on the analysis of student mean scores, percentile distributions, proficiency levels, group differences, and contextual factors affecting student performance.

6.1.1. Mean scores

Table 6.1 shows the mean scores of all of the districts, as well as the national mean. In addition to the mean scores, the standard error and 95% confidence intervals are provided for statistical comparison. These statistics are not provided for Gelephu Thromde; since only students from a single school participated in this district, it was not possible to assess how much results might have differed in other schools. T-tests were conducted to check if the mean score of each district was statistically different from the national mean. The results of these tests, including the p-values, are provided in the table. As explained in the introduction section, all significance testing in this report uses a critical value of $p<0.01$. For this reason, there are some instances in the table where the 95% confidence interval does not include 300 but the difference is not highlighted as statistically significant.

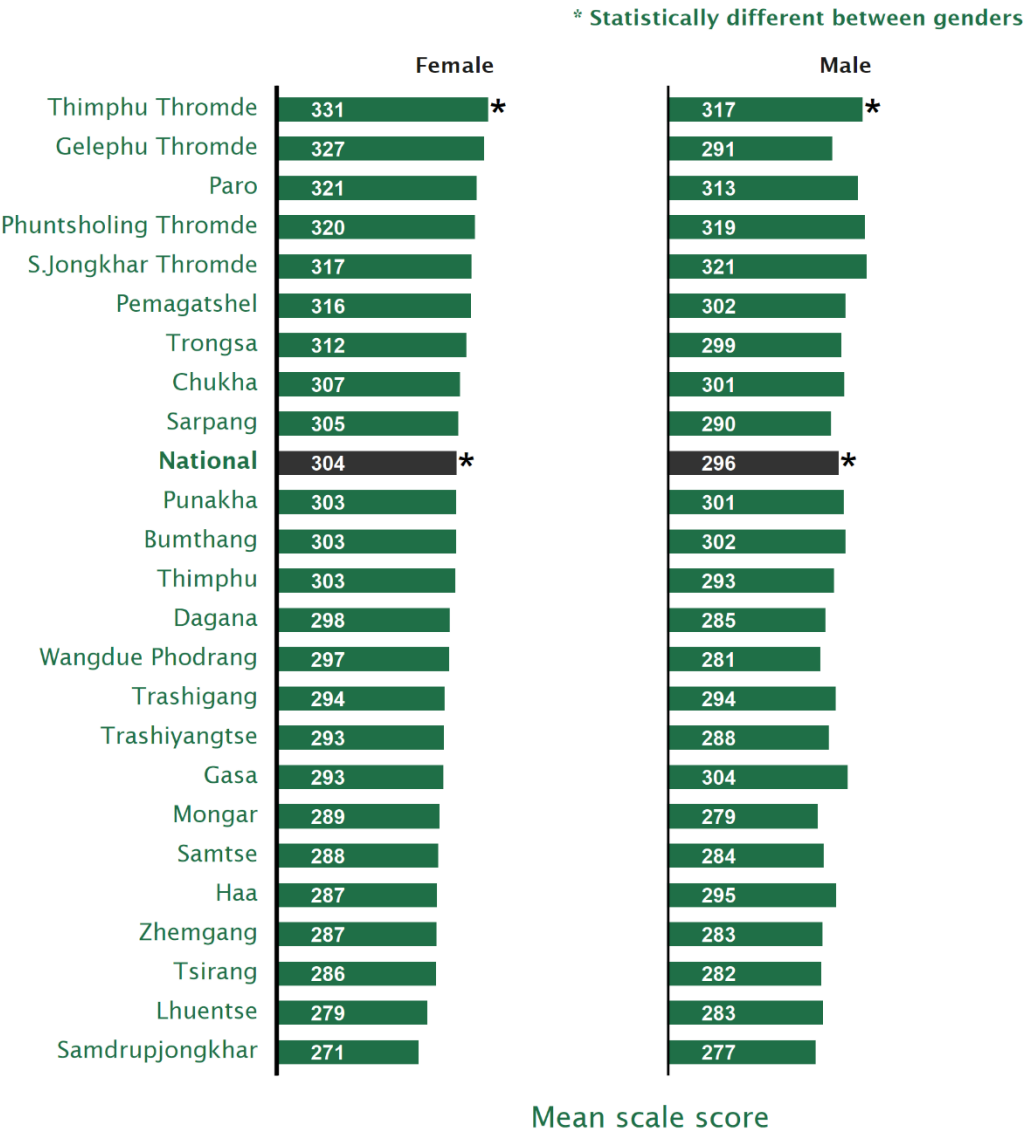
Two districts – Samdrup Jongkhar and Tsirang – had mean scores that were statistically significantly lower than the national mean. Between these two districts, the lowest mean score was observed in Samdrup Jongkhar. The students from Samdrup Jongkhar performed lower than the national cohort by an average of 26 points (274 vs 300).

In contrast, three districts – Paro, Phuntsholing Thromde, and Thimphu Thromde – had mean scores that were statistically significantly higher than the national mean. The students from Thimphu Thromde, in particular, scored 24 points higher than the national mean (324 vs 300).

Table 6.1: Mean scores for grade VI English Reading Literacy by district

District	Mean	Standard error	95% confidence interval	p-value	Statistically different than the national mean?
Bumthang	303	8.12	287 - 319	0.739	Not significant
Chukha	304	6.03	292 - 316	0.509	Not significant
Dagana	291	6.74	278 - 305	0.218	Not significant
Gasa	298	13.75	272 - 325	0.914	Not significant
Gelephu Thromde	309	-	-	-	-
Haa	291	6.59	278 - 304	0.173	Not significant
Lhuentse	280	7.59	266 - 295	0.014	Not significant
Mongar	284	9.35	266 - 303	0.099	Not significant
Paro	317	5.70	306 - 328	0.005	Higher
Pemagatshel	309	6.06	297 - 321	0.156	Not significant
Phuntsholing Thromde	319	4.87	310 - 329	0.000	Higher
Punakha	302	5.14	292 - 312	0.719	Not significant
Samdrup Jongkhar	274	3.08	268 - 280	0.000	Lower
S.Jongkhar Thromde	319	12.49	294 - 343	0.143	Not significant
Samtse	286	5.18	276 - 296	0.011	Not significant
Sarpang	297	3.38	291 - 304	0.469	Not significant
Thimphu	298	6.81	285 - 312	0.796	Not significant
Thimphu Thromde	324	2.84	318 - 329	0.000	Higher
Trashigang	294	7.02	280 - 308	0.393	Not significant
Trashiyangtse	291	8.20	275 - 307	0.274	Not significant
Trongsa	306	8.75	289 - 323	0.509	Not significant
Tsirang	284	4.96	274 - 294	0.003	Lower
Wangdue Phodrang	289	5.55	279 - 300	0.073	Not significant
Zhemgang	285	6.56	272 - 298	0.027	Not significant
National	**300**	**1.90**	**296 - 304**	-	-

Figure 6.1: Mean scores for grade VI English Reading Literacy by district and gender



Notes: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution. Significance tests were not carried out for Gasa, Gelephu Thromde, Lhuentse, and S.Jongkhar Thromde because only one or two schools participated.

Figure 6.1 compares the mean English Reading Literacy scores of boys and girls within each district. It shows a statistically significant difference between genders at the national level, where girls outperformed boys by 8 points (304 vs 296). There is no statistically significant difference between genders within districts, except for Thimphu Thromde, where girls had higher English Reading Literacy scores than boys by 14 points (331 vs 317).

6.1.2. Percentile distributions

The percentile distribution illustrates how students' performance is spread across the range of possible scores. It helps indicate a student's standing relative to the rest of the group. In the context of the NEA, a percentile score represents the scale score below which a certain percentage of students fall. For example, the 5th percentile score in English Reading Literacy indicates that 5% of students scored below that value.

Percentile distributions also provide insight into the degree of variation in student performance. The range between the 25th and 75th percentiles – known as the interquartile range – captures the middle 50% of scores. Meanwhile, the range between the 5th and 95th percentiles includes 90% of all scores. A wider range suggests greater variability in performance among students, while a narrower range indicates more similarity.

Table 6.2: Percentile scores in grade VI English Reading Literacy, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	228	271	299	337	389	66	162
Male	218	263	293	327	386	63	168
National	**222**	**264**	**299**	**333**	**386**	**69**	**164**

Table 6.2 presents the percentile scores and the ranges for the NEA 2024 English Reading Literacy test, both nationally and by gender. Nationally, 50% of students scored between 264 and 333, while 90% scored between 222 and 386.

When broken down by gender, the distribution of scores for boys was slightly narrower than that of girls. The interquartile range (25th–75th percentile) for girls was 66 points, compared to 63 points for boys, and the range between the 5th and 95th percentiles was 162 points for girls, compared to 168 for boys. This indicates that boys performed marginally more similarly to one another than girls.

Table 6.3 shows the percentile score distribution by district, and Figure 6.2 visualises the distribution alongside the mean score for each district. Districts shown on Figure 6.2 are ordered from highest to lowest mean score. The results show considerable variation in score ranges across districts.

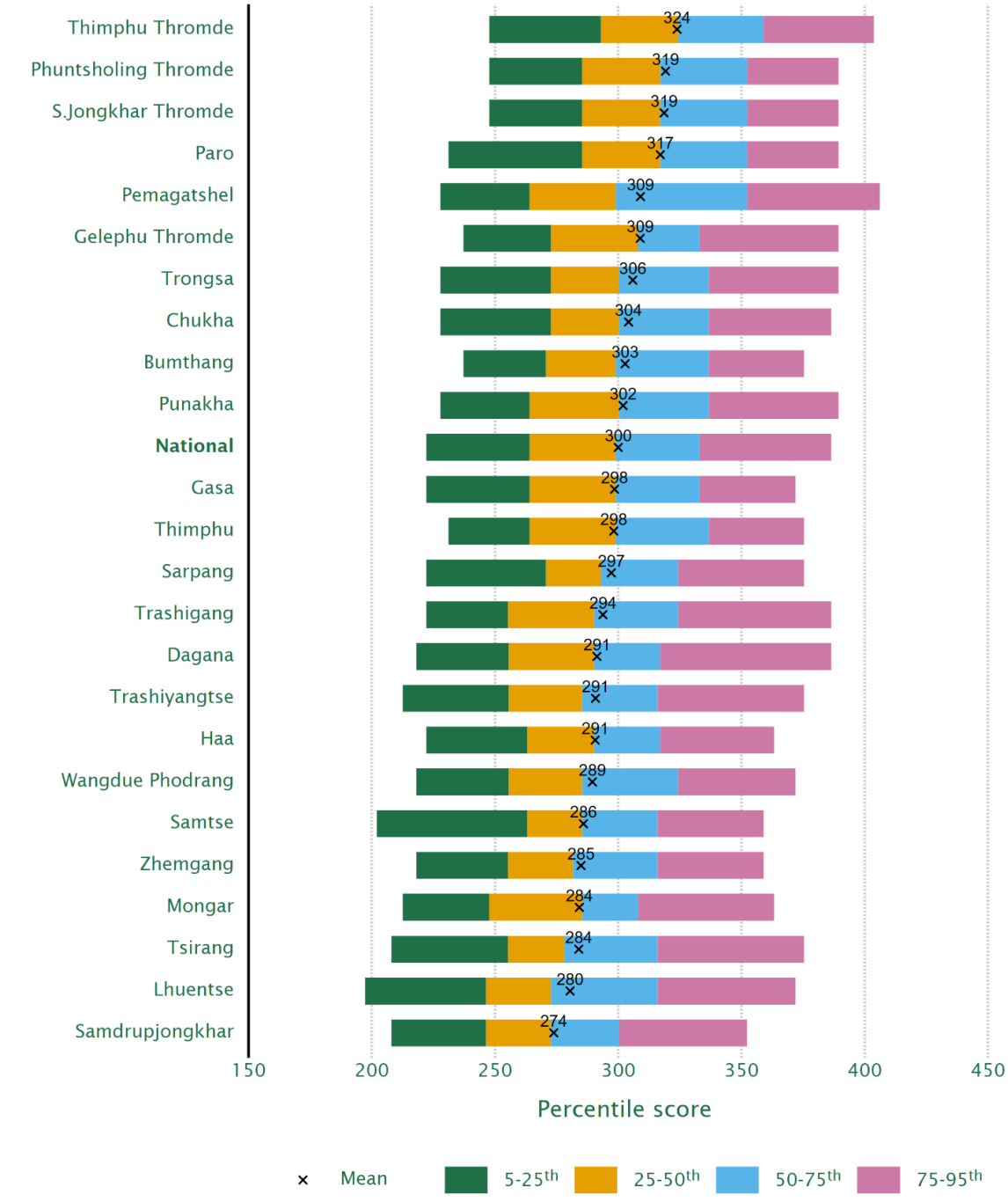
The district with the narrowest interquartile range was Samtse (53), suggesting student performance in that district was more consistent compared to the variation observed in other districts. In contrast, Pemagatshel had the widest interquartile range (88), indicating greater variability in student performance compared to other districts. For the remaining districts, the interquartile range was found to be between 54 and 73 points. The score range for the 5th–95th percentiles were also highly variable, ranging from 138 (Bumthang) to 178

(Pemagatshel).

Table 6.3: Percentile scores in grade VI English Reading Literacy, nationally and by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	237	271	299	337	375	66	138
Chukha	228	273	300	337	386	64	159
Dagana	218	256	290	317	386	62	168
Gasa	222	264	299	333	372	69	150
Gelephu Thromde	237	273	308	333	389	60	152
Haa	222	263	290	317	363	54	141
Lhuentse	197	246	273	316	372	70	175
Mongar	213	248	285	308	363	60	151
Paro	231	285	317	352	389	67	158
Pemagatshel	228	264	299	352	406	88	178
Phuntsholing Thromde	248	285	317	352	389	67	142
Punakha	228	264	300	337	389	73	162
Samdrup Jongkhar	208	246	273	300	352	54	144
S.Jongkhar Thromde	248	285	317	352	389	67	142
Samtse	202	263	285	316	359	53	157
Sarpang	222	271	293	324	375	54	153
Thimphu	231	264	299	337	375	73	144
Thimphu Thromde	248	293	324	359	404	66	156
Trashigang	222	255	290	324	386	69	164
Trashiyangtse	213	256	285	316	375	60	163
Trongsa	228	273	300	337	389	64	162
Tsirang	208	255	278	316	375	61	167
Wangdue Phodrang	218	256	285	324	372	69	154
Zhemgang	218	255	281	316	359	61	141
National	**222**	**264**	**299**	**333**	**386**	**69**	**164**

Figure 6.2: Percentile scores in grade VI English Reading Literacy, nationally and by district



6.1.3. Proficiency levels

Table 6.4 shows the proficiency levels developed to describe performance in grade VI English Reading Literacy. The lowest proficiency level is Level 1, and the highest proficiency level is Level 4. The description for each proficiency level indicates the skills and knowledge students at that level are expected to be able to demonstrate.

Table 6.4: Proficiency descriptions for grade VI English Reading Literacy

Proficiency level	Description
Level 4	Students at this level can read a wide range of text types, including descriptive, imaginative, transactional, instructional, and slightly dense informative texts. They can make complex interpretations by linking ideas across sentences and using contextual information. In addition, they can use contextual clues and prior knowledge to infer meaning at various levels. Their understanding extends to figurative language, such as personification and onomatopoeia, and they can reflect on the author's purpose. These students can recognise central themes in both familiar and global contexts and can accurately navigate text features, such as charts, graphs, and diagrams to support deep understanding.
Level 3	Students at this level can read more complex texts, including poems, articles, and unfamiliar narratives. They can locate directly stated information, even when it is presented through synonyms or paraphrased expressions. These students can interpret meaning by linking ideas across sections of the text or connecting them to prior knowledge. They can identify figurative language such as similes, metaphors, personification, and onomatopoeia. They can also distinguish fact from opinion in informational texts and are aware of the emotive effects of words. They can identify implied main ideas and are beginning to engage more deeply with the author's message. Furthermore, they can independently use features of non-continuous texts, such as charts and diagrams, to infer meaning.
Level 2	Students at this level are beginning to read short and simple texts with increasing independence. They can identify explicitly stated ideas and are starting to interpret basic text features, such as headings and diagrams. They understand the purpose of simple formal writing, including business letters and applications, and can connect the information in these texts to real-life experiences. They are also beginning to interpret implicit meanings, particularly in texts that explore familiar themes such as friendship and cooperation.
Level 1	Students at this level can identify basic elements of short stories, such as settings, characters, plot, and themes. They can match familiar words to illustrations and recognise common vocabulary related to familiar people, objects, animals, and activities. They can read simple texts, both fiction and non-fiction, for explicit meaning, relying heavily on visual support. They can also follow basic instructions but need a lot of support to use textual features and to understand formal texts such as invitations or notices.

One of the objectives of the NEA 2024 is to set a minimum proficiency level for grade VI English Reading Literacy. After a series of extensive reviews and deliberations among education stakeholders in the country, it has been decided that students are expected to reach at least Level 2 by the end of grade VI. Thus, students with scores between Level 2

and Level 4 (and above in future NEAs) are considered to have met the minimum proficiency level of grade VI.

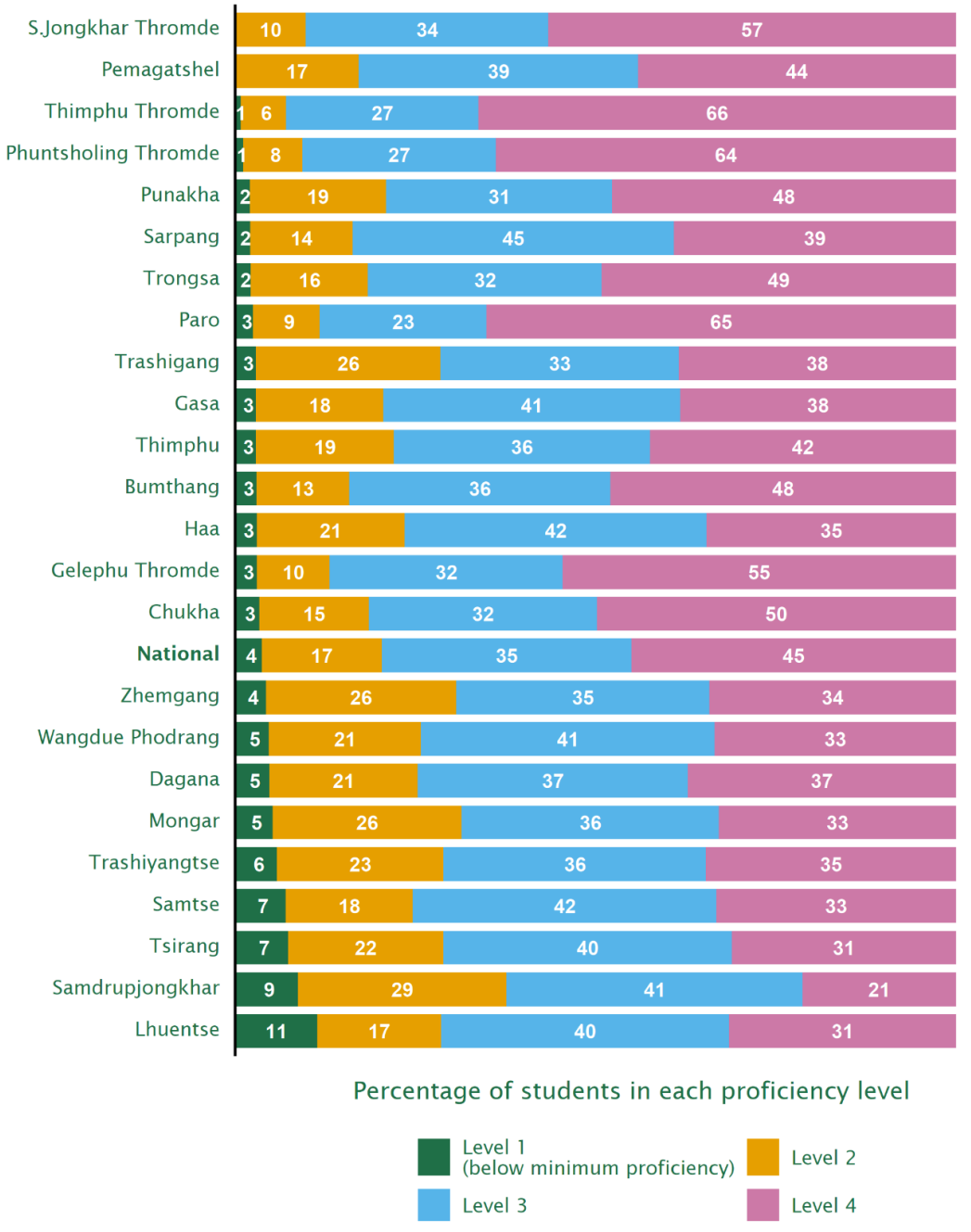
Table 6.5 shows the percentage of students at each proficiency level, and the total percentage of students who achieved the minimum level of proficiency (Level 2 and above). Figure 6.3 visualises these results, ordered from the highest to the lowest percentage of students, with the districts with the highest percentage of students meeting the minimum proficiency level at the top, and the districts with the lowest percentage of students meeting the minimum proficiency level at the bottom of the graph.

Table 6.5: Percentage of students at each proficiency level for grade VI English Reading Literacy by district

District	Percentage of students at each level				Percentage of students achieving minimum proficiency (%)
	Level 1	Level 2	Level 3	Level 4	
Bumthang	3.0	12.8	36.3	47.9	97.0
Chukha	3.4	15.2	31.7	49.8	96.6
Dagana	4.8	20.6	37.5	37.2	95.2
Gasa	2.9	17.6	41.2	38.2	97.1
Gelephu Thromde	3.0	10.1	32.3	54.5	97.0
Haa	3.0	20.5	41.9	34.5	97.0
Lhuentse	11.4	17.1	40.0	31.4	88.6
Mongar	5.2	26.2	35.7	32.8	94.8
Paro	2.5	9.2	23.2	65.1	97.5
Pemagatshel	0.0	17.2	38.7	44.1	100.0
Phuntsholing Thromde	1.1	8.2	26.9	63.8	98.9
Punakha	2.0	18.9	31.4	47.6	98.0
Samdrup Jongkhar	8.7	29.0	41.1	21.2	91.3
S.Jongkhar Thromde	0.0	9.9	33.6	56.5	100.0
Samtse	7.0	17.7	42.1	33.2	93.0
Sarpang	2.1	14.2	44.6	39.1	97.9
Thimphu	2.9	19.1	35.6	42.4	97.1
Thimphu Thromde	0.8	6.3	26.7	66.2	99.2
Trashigang	2.9	25.6	33.0	38.4	97.1
Trashiyangtse	5.8	23.1	36.4	34.6	94.2
Trongsa	2.2	16.3	32.4	49.1	97.8
Tsirang	7.4	21.6	40.0	31.1	92.6
Wangdue Phodrang	4.7	21.1	40.8	33.4	95.3
Zhemgang	4.3	26.4	35.1	34.2	95.7
National	**3.7**	**16.7**	**34.6**	**45.0**	**96.3**

Nationally, 96% of the students met the minimum proficiency level for grade VI English Reading Literacy in the NEA 2024, with 17%, 35%, and 45% of students at Level 2, Level 3, and Level 4, respectively. In other words, only 4% of the students did not meet the minimum level (i.e., Level 1).

Figure 6.3: Percentage of students at each proficiency level for grade VI English Reading Literacy by district



Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

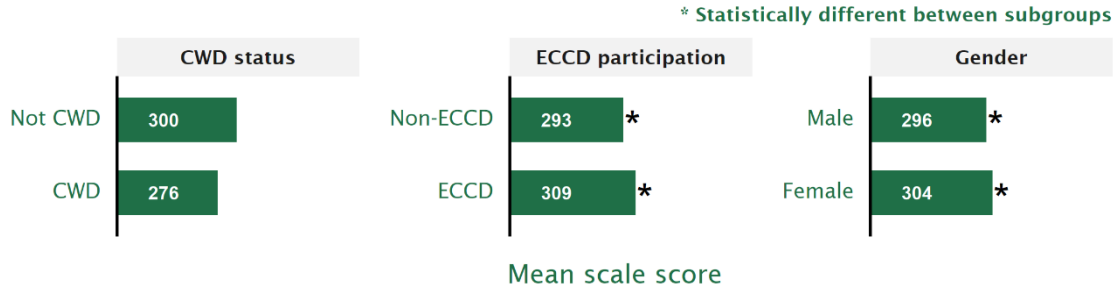
Across districts, the percentage of students who met the minimum proficiency level in English Reading Literacy ranged from 89% (Lhuentse) to 100% (Samdrup Jongkhar Thromde and Pemagatshel). The similarity of these percentages implies that most districts have comparable percentages of students meeting the minimum proficiency level in English Reading Literacy. Another implication of this result is that the percentage of students who did not meet the minimum proficiency level was a maximum of 11%. This was observed in Lhuentse, followed by Samdrup Jongkhar and Tsirang with 9% and 7% of their respective students not meeting the minimum proficiency levels. In contrast, four districts had at least 99% of students meeting the minimum proficiency level. These were Samdrup Jongkhar Thromde (100%), Pemagatshel (100%), Thimphu Thromde (99%), and Phuntsholing Thromde (99%).

6.2. Performance gaps in context

6.2.1. Performance by student characteristics

Figure 6.4 shows the mean scores for English Reading Literacy by Early Childhood Care and Development (ECCD) participation, gender, and children with disabilities (CWD) status. Firstly, the mean score for students who participated in the ECCD programme was higher than those who did not by 16 points. Secondly, the mean score for girls was noticeably higher than boys by 8 points. In both cases, the performance gap between the subgroups was statistically significantly different. Lastly, the mean score for students without disabilities was higher than for students with disabilities, however, the gap was not found to be statistically significant.

Figure 6.4: Mean scores for grade VI English Reading Literacy by student characteristics



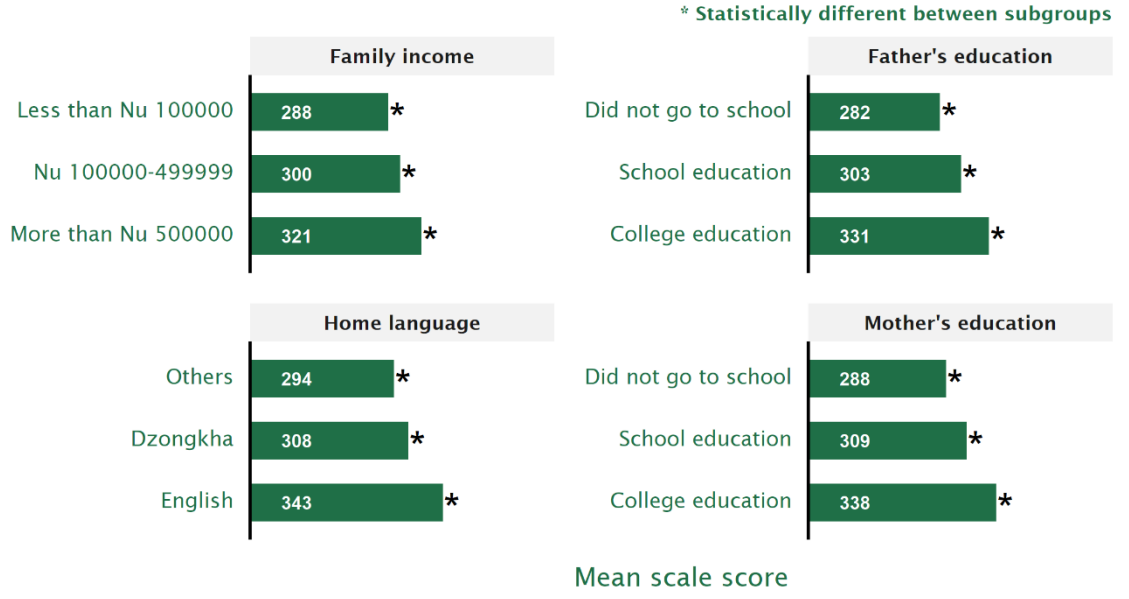
6.2.2. Performance by family characteristics

Figure 6.5 shows the mean scores for English Reading Literacy by students' family income, parental education, and main language spoken by the students at home. Firstly, students from a higher income group tended to outperform students from lower-income families. The performance gap was 33 points between students from the highest (more than Nu

500000) and lowest (less than Nu 100000) family income groups. The magnitude of difference was equivalent to more than half a standard deviation (SD).

Secondly, students whose parents did not go to school tended to underperform relative to students whose parents had received school or college education. The performance gap between students whose parents did not go to school and those with college-educated parents was 49 and 50 points, based on their father's and mother's education levels, respectively.

Figure 6.5: Mean scores for grade VI English Reading Literacy by family characteristics



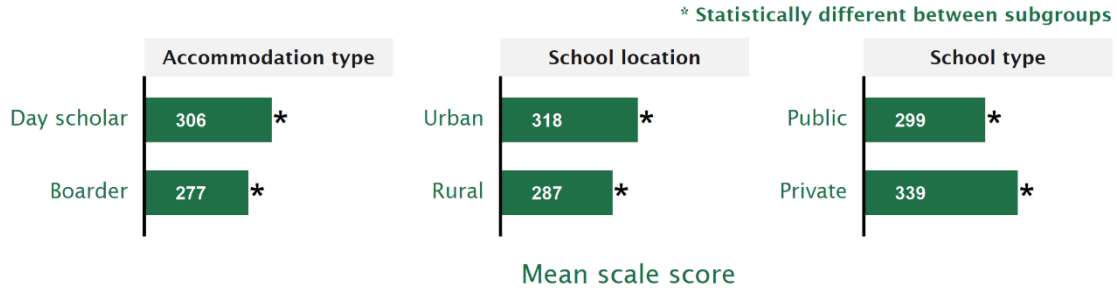
Lastly, students who spoke English as their home language scored noticeably higher than students who spoke Dzongkha or other languages. The performance gap between students who spoke English and other languages at home was 49 points.

In all four cases, the performance gaps between the subgroups were found to be statistically significant and were of a magnitude more than half a SD. These gaps suggest that student performance in English Reading Literacy is closely related to their family background characteristics.

6.2.3. Performance by school characteristics

Figure 6.6 shows the mean scores for English Reading Literacy by students' accommodation type, school location, and school type. Firstly, day scholars outperformed boarders by an average of 29 points. Secondly, students attending urban schools scored, on average, 31 points higher than those in rural schools. Lastly, students in private schools outperformed those in public schools by an average of 40 points. In all three cases, the differences in mean scores between the subgroups were statistically significant, and the magnitude of each difference was more than half a SD, indicating a noticeable disparity in performance across these subgroups.

Figure 6.6: Mean scores for grade VI English Reading Literacy by school characteristics



6.3. Summary and conclusion

This chapter presents and discusses the findings from the grade VI English Reading Literacy test. Key findings and recommendations are summarised below.

National: Given that this was the first cycle in which English Reading Literacy was tested on grade VI students in the NEA, the national mean score was at 300. About 96% of the students met the minimum proficiency level set by the various educational stakeholders. In other words, about 4% did not meet this standard. This finding highlights the need for programmes to better support students, and especially those at risk of falling behind, to build their foundational knowledge in English Reading Literacy. These efforts will also be essential to improve the national performance in grade VI English Reading Literacy.

District: Districts that performed statistically significantly better than the national cohort of students were Paro, Phuntsholing Thromde, and Thimphu Thromde. In these districts, the percentage of students who did not meet the minimum proficiency level was 3% or less. In contrast, the lowest performing districts in English Reading Literacy, found to be statistically different to the national mean, were Samdrup Jongkhar and Tsirang. In these districts, at least 9% of students did not meet the minimum proficiency level. This finding underscores the need to investigate the underlying causes of low performance in these districts. Additionally, it highlights the importance of allocating additional support, and implementing targeted policies that prioritise students from these districts.

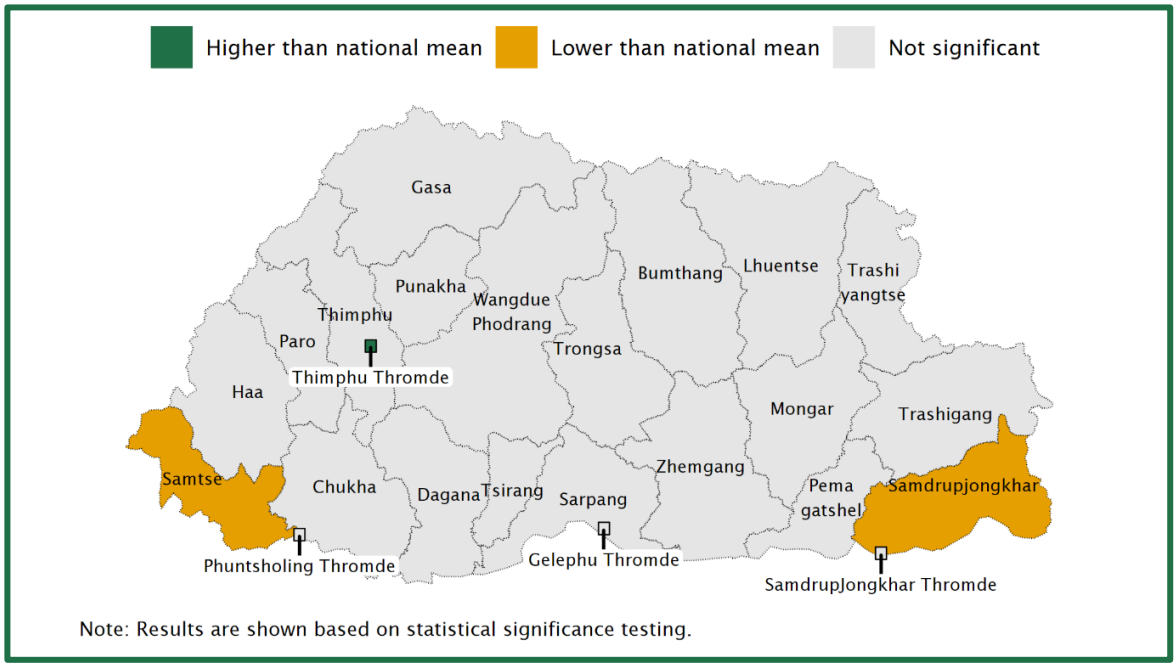
Gender: Girls outperformed boys in English Reading Literacy, and we found evidence to suggest that this gender gap is statistically significant both nationally and in Thimphu Thromde. However, these gender gaps were smaller in magnitude compared to the performance differences observed across other student characteristics.

CWD: Students without disabilities outperformed students with disabilities. However, we did not find evidence to suggest that this gap is statistically significant, potentially due to high uncertainty in the estimates for CWD students as a consequence of the small sample size.

Other characteristics: Statistically significant performance gaps were found in all other student, family, and school characteristics investigated (except CWD, as discussed above). In particular, some of the bigger performance gaps were found between students with parents who did not go to school and those with college-educated parents (based on both the mother's and the father's education), and between students who spoke English at home and those who spoke other languages. These findings suggest that family background is closely related to student performance in English Reading Literacy. One policy implication is that students from less advantaged families should be provided with additional support to help close this performance gap. This could include better access to learning resources, language support, and targeted academic interventions to ensure that all students have the same opportunities to perform well academically, regardless of their home environment.

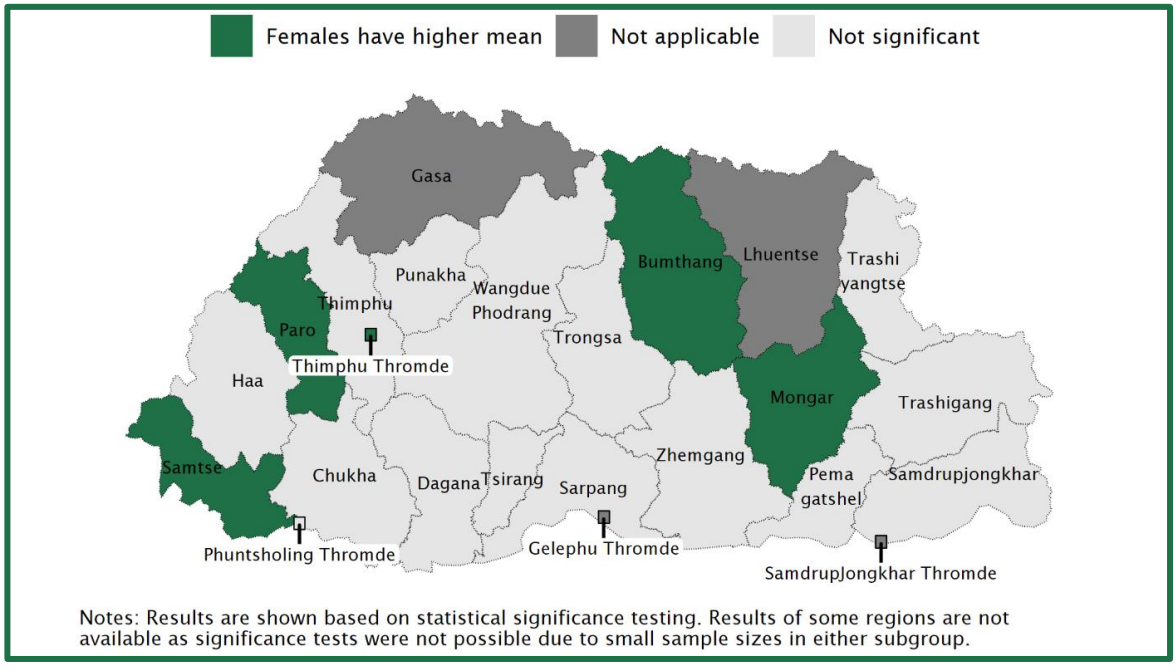
Chapter 7. Achievement of grade VI students in English Writing Literacy

Summary 7.1: Student achievement in grade VI English Writing Literacy by district



Note: Results are shown based on statistical significance testing.

Summary 7.2: Student achievement in grade VI English Writing Literacy by district and gender



Notes: Results are shown based on statistical significance testing. Results of some regions are not available as significance tests were not possible due to small sample sizes in either subgroup.

7.1. Performance

This chapter presents the achievement of grade VI students in the English Writing Literacy test of the NEA 2024. The discussion focusses on the analysis of student mean scores, percentile distributions, proficiency levels, group differences, and contextual factors affecting student performance.

7.1.1. Mean scores

Table 7.1 shows the mean scores of all of the districts, as well as the national mean. In addition to the mean scores, the standard error and 95% confidence intervals are provided for statistical comparison. These statistics are not provided for Gelephu Thromde; since only students from a single school participated in this district, it is not possible to assess how much results might have differed in other schools. T-tests were conducted to check if the mean score of each district was statistically different from the national mean. The results of these tests, including the p-values, are provided in the table. As explained in the introduction section, all significance testing in this report uses a critical value of $p<0.01$. For this reason, there are some instances in the table where the 95% confidence interval does not include 300 but the difference is not highlighted as statistically significant.

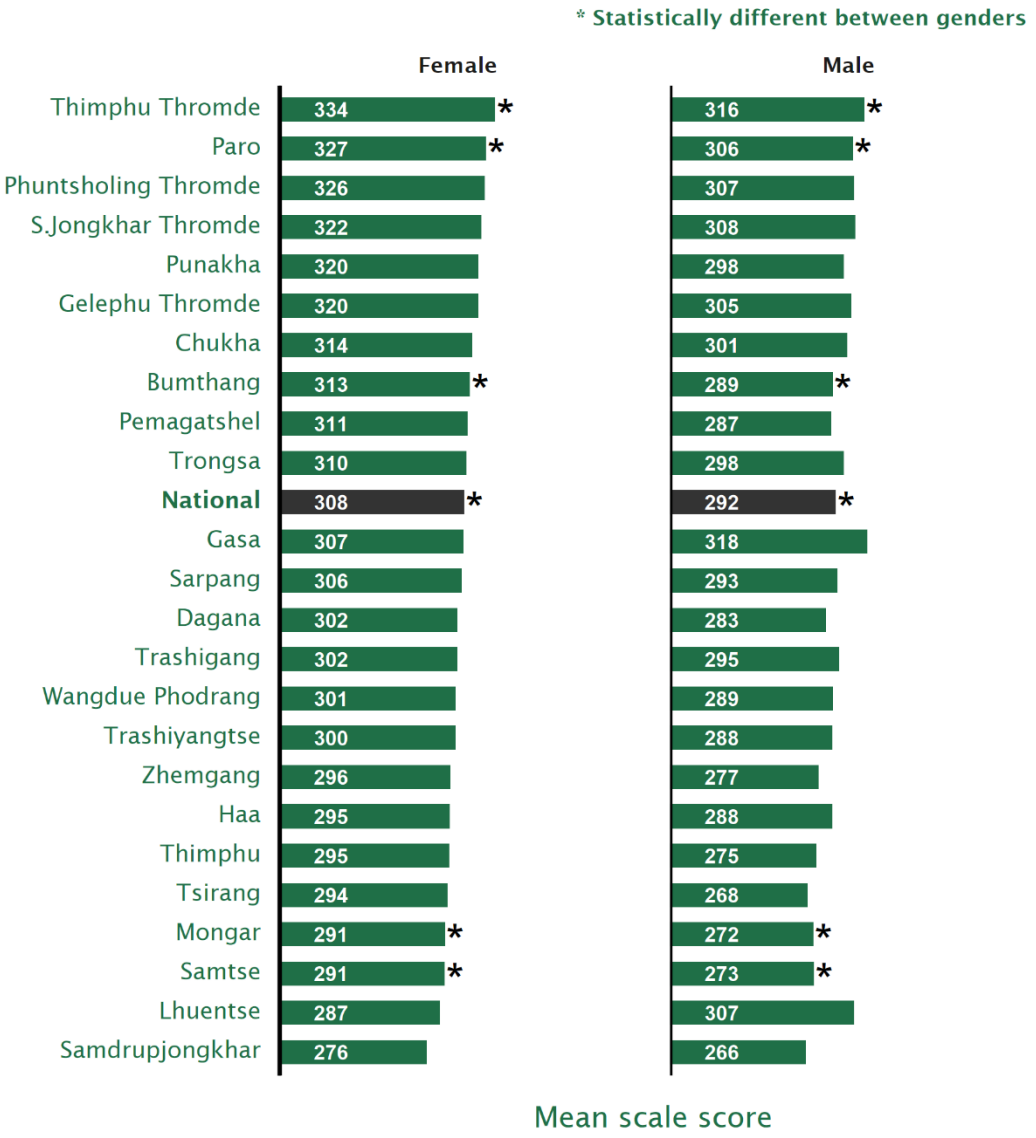
Two districts – Samdrup Jongkhar and Samtse – had mean scores that were statistically significantly lower than the national mean. Between these two districts, the lowest mean score was observed in Samdrup Jongkhar. The students from Samdrup Jongkhar performed lower than the national cohort by an average of 29 points (271 vs 300).

In contrast, one district, Thimphu Thromde, had a mean score that was statistically significantly higher than the national mean. The students from Thimphu Thromde scored 25 points higher than the national mean (325 vs 300).

Table 7.1: Mean scores for grade VI English Writing Literacy by district

District	Mean	Standard error	95% confidence interval	p-value	Statistically different than the national mean?
Bumthang	301	7.50	286 - 315	0.928	Not significant
Chukha	308	6.68	295 - 321	0.254	Not significant
Dagana	292	7.48	278 - 307	0.333	Not significant
Gasa	313	15.33	283 - 343	0.411	Not significant
Gelephu Thromde	312	-	-	-	-
Haa	292	5.59	281 - 303	0.182	Not significant
Lhuentse	295	0.96	293 - 297	0.045	Not significant
Mongar	282	8.76	265 - 300	0.052	Not significant
Paro	316	6.59	303 - 329	0.018	Not significant
Pemagatshel	299	6.68	286 - 312	0.850	Not significant
Phuntsholing Thromde	317	8.23	300 - 333	0.052	Not significant
Punakha	309	7.37	294 - 323	0.255	Not significant
Samdrup Jongkhar	271	3.32	265 - 278	0.000	Lower
S.Jongkhar Thromde	315	8.95	298 - 333	0.098	Not significant
Samtse	282	6.24	270 - 294	0.006	Lower
Sarpang	299	2.71	294 - 304	0.759	Not significant
Thimphu	285	7.23	271 - 300	0.055	Not significant
Thimphu Thromde	325	3.08	319 - 331	0.000	Higher
Trashigang	299	5.51	288 - 310	0.836	Not significant
Trashiyangtse	295	9.13	277 - 312	0.565	Not significant
Trongsa	304	8.59	287 - 321	0.626	Not significant
Tsirang	281	8.14	265 - 297	0.026	Not significant
Wangdue Phodrang	295	9.71	276 - 314	0.624	Not significant
Zhemgang	287	8.45	270 - 303	0.129	Not significant
National	**300**	**2.13**	**296 - 304**	-	-

Figure 7.1: Mean scores for grade VI English Writing Literacy by district and gender



Notes: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution. Significance tests were not carried out for Gasa, Gelephu Thromde, Lhuentse, and S.Jongkhar Thromde because only one or two schools participated.

Figure 7.1 compares the mean English Writing Literacy scores of boys and girls within each district. It shows a statistically significant difference between genders at the national level, where girls outperformed boys. In five districts – Bumthang, Mongar, Paro, Samtse, and Thimphu Thromde – girls significantly outperformed boys. In Bumthang, girls outperformed boys by 24 points (313 vs 289), while in Paro, girls outperformed boys by 21 points (327 vs 306).

7.1.2. Percentile distributions

The percentile distribution illustrates how students' performance is spread across the range of possible scores. It helps indicate a student's standing relative to the rest of the group. In the context of the NEA, a percentile score represents the scale score below which a certain percentage of students fall. For example, the 5th percentile score in English Writing Literacy indicates that 5% of students scored below that value.

Percentile distributions also provide insight into the degree of variation in student performance. The range between the 25th and 75th percentiles – known as the interquartile range – captures the middle 50% of scores. Meanwhile, the range between the 5th and 95th percentiles includes 90% of all scores. A wider range suggests greater variability in performance among students, while a narrower range indicates more similarity.

Table 7.2: Percentile scores in grade VI English Writing Literacy, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	225	278	306	344	388	66	162
Male	210	265	293	321	365	56	156
National	**220**	**271**	**299**	**329**	**376**	**57**	**156**

Table 7.2 presents the percentile scores and the ranges for the NEA 2024 English Writing Literacy test, both nationally and by gender. Nationally, 50% of students scored between 271 and 329, while 90% scored between 220 and 376.

When broken down by gender, the distribution of scores for boys was slightly narrower than that of girls. The interquartile range (25th–75th percentile) for girls was 66 points, compared to 56 points for boys, and the range between the 5th and 95th percentiles was 162 points for girls and 156 points for boys. This indicates that boys performed marginally more similarly to one another than girls.

Table 7.3 shows the percentile score distribution by district, and Figure 7.2 visualises the distribution alongside the mean score for each district. Districts shown on Figure 7.2 are ordered from highest to lowest mean score. The results show considerable variation in score ranges across districts.

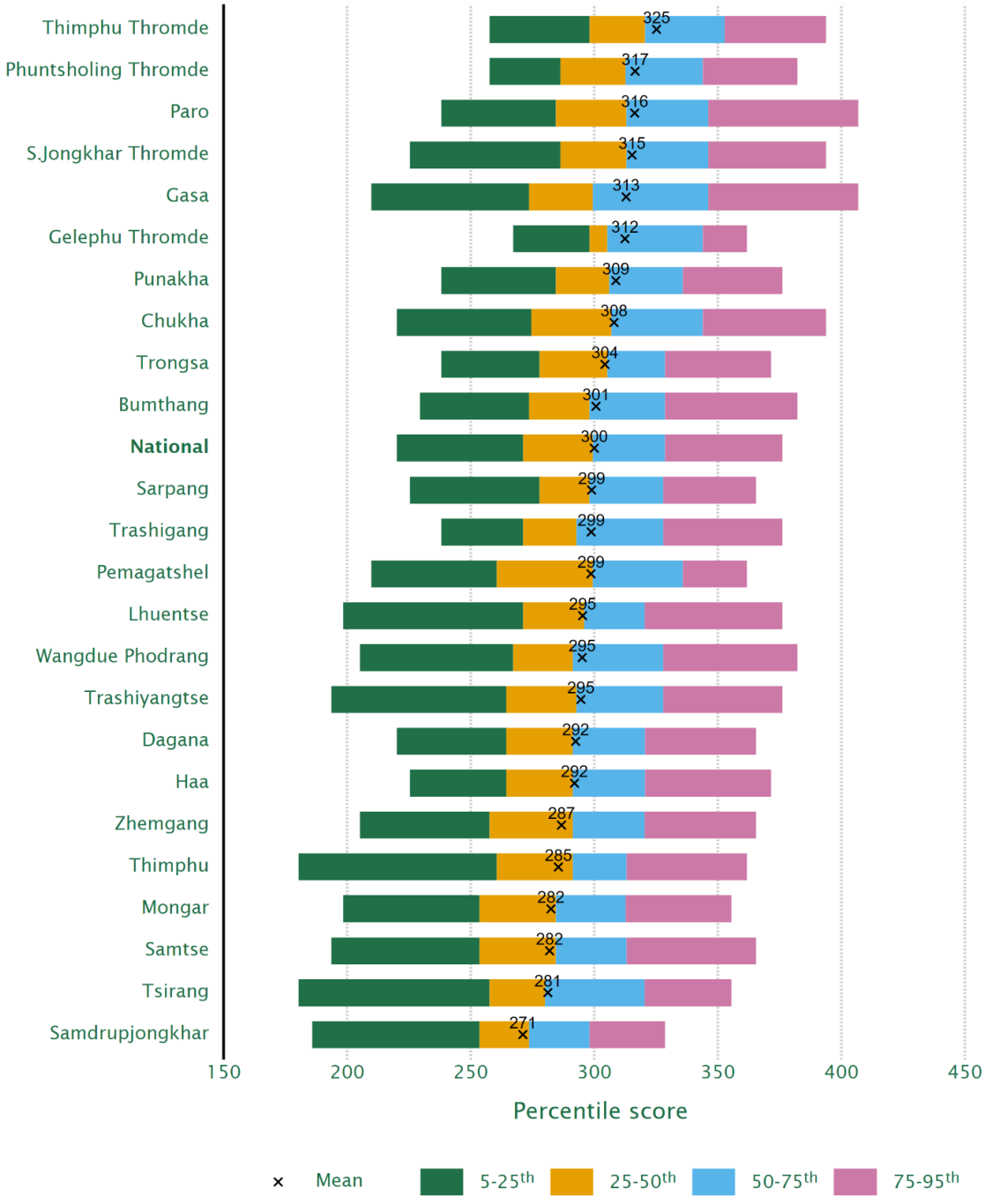
The district with the narrowest interquartile range was Samdrup Jongkhar (45), suggesting that student performance in that district was more consistent compared to the variation observed in other districts. In contrast, Pemagatshel had the widest interquartile range (75), indicating greater variability in student performance compared to other districts. For the remaining districts, the interquartile range was found to be between 46 and 72 points. The score range for the 5th–95th percentiles were also highly variable, ranging from 95 (Gelephu Thromde) to 197 (Gasa).

Table 7.3: Percentile scores in grade VI English Writing Literacy, nationally and by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	230	274	298	329	382	55	153
Chukha	220	274	307	344	394	70	174
Dagana	220	265	291	321	365	56	145
Gasa	210	274	299	346	407	72	197
Gelephu Thromde	267	298	305	344	362	46	95
Haa	225	265	291	321	372	56	146
Lhuentse	198	271	296	320	376	49	178
Mongar	198	254	284	313	355	59	157
Paro	238	284	313	346	407	62	169
Pemagatshel	210	261	299	336	362	75	152
Phuntsholing Thromde	258	286	313	344	382	58	125
Punakha	238	284	306	336	376	51	138
Samdrup Jongkhar	186	254	274	298	329	45	143
S.Jongkhar Thromde	225	286	313	346	394	60	168
Samtse	194	254	284	313	365	60	172
Sarpang	225	278	298	328	365	50	140
Thimphu	180	261	291	313	362	53	181
Thimphu Thromde	258	298	321	353	394	55	136
Trashigang	238	271	293	328	376	57	138
Trashiyangtse	194	265	293	328	376	63	183
Trongsa	238	278	305	329	372	51	133
Tsirang	180	258	280	320	355	63	175
Wangdue Phodrang	205	267	291	328	382	61	177
Zhemgang	205	258	291	320	365	63	160
National	**220**	**271**	**299**	**329**	**376**	**57**	**156**

Another observation from Figure 7.2 is that while the difference in mean scores between some districts was small, the score distribution can vary noticeably between them. One such example is Gelephu Thromde and Gasa: the mean scores between these two districts differed by just 1 point, but the scale range for the 5th–95th percentiles was much wider for Gasa. This suggests that while average performance was very similar in the two districts, Gasa had a more heterogeneous group of grade VI students in their English Writing Literacy performance than Gelephu Thromde.

Figure 7.2: Percentile scores in grade VI English Writing Literacy, nationally and by district



7.1.3. Proficiency levels

Table 7.4 shows the proficiency levels developed to describe performance in grade VI English Writing Literacy. The lowest proficiency level is Level 1, and the highest proficiency level is Level 5. The description for each proficiency level indicates the skills and knowledge students at that level are expected to be able to demonstrate.

Table 7.4: Proficiency descriptions for grade VI English Writing Literacy

Proficiency level	Description
Level 5	Students at this level demonstrate confident and fluent writing across a range of text types, including narrative, descriptive, poetic, and other creative forms. Sentence structures are varied and effectively controlled, contributing to a smooth and coherent flow of ideas. Grammar and punctuation are consistently accurate. Vocabulary is broad and well selected to suit the task, topic, and audience. The writing is well structured with appropriate paragraphing, clear transitions, and a tone that aligns with the purpose. Figurative language, such as similes, metaphors, onomatopoeia, and personification, is used purposefully across different text types to enhance expression. Handwriting is consistently clear and legible.
Level 4	Students at this level write clearly and coherently for familiar tasks. Sentences show some variety, and grammar and punctuation are mostly accurate. Vocabulary is generally appropriate and supports the intended meaning. Writing is logically organised, with a tone that is mostly appropriate to the task. Figurative language, such as similes, metaphors, and onomatopoeia, may be used with varying effectiveness across different writing tasks. Minor errors may be present, but rarely interfere with communication. Handwriting is legible and consistent.
Level 3	Students at this level express basic ideas using simple sentence structures. There is some evidence of organisation and a general sense of audience and purpose. Grammar and punctuation are used correctly with some exceptions, with errors clearly noticeable. Vocabulary is limited, but sufficient for basic communication. Attempts at using figurative or descriptive language are evident, but are underdeveloped. Despite some lapses in clarity, the overall message is generally understandable. Handwriting is mostly legible.
Level 2	Students at this level attempt to communicate using short, simple sentences. Organisation is weak, and ideas are loosely connected. Grammar and punctuation errors are frequent and occasionally interfere with communication. Vocabulary is restricted and often repetitive. Writing tends to remain on topic but lacks clarity and development. Handwriting is uneven but can be read with effort.
Level 1	Students at this level demonstrate writing that consists of words or short phrases with minimal control of sentence structure, grammar, or punctuation. Ideas are often unclear, incomplete, or unrelated to the task. Vocabulary is extremely limited and often inappropriate for the context. Persistent errors significantly interfere with communication. Handwriting is difficult to read. Significant support is required to develop basic writing skills.

One of the objectives of the NEA 2024 is to set a minimum proficiency level for grade VI English Writing Literacy. After a series of extensive reviews and deliberations among

education stakeholders in the country, it has been decided that students are expected to reach at least Level 3 at the end of grade VI. Thus, students with scores at Level 3 and above are considered to have met the minimum proficiency level of grade VI.

Table 7.5 shows the percentage of students at each proficiency level, and the total percentage of students who achieved the minimum level of proficiency (Level 3 and above). Figure 7.3 visualises these results, ordered from the highest to the lowest percentage of students, with the districts with the highest percentage of students meeting the minimum proficiency level at the top, and the districts with the lowest percentage of students meeting the minimum proficiency level at the bottom of the graph.

Table 7.5: Percentage of students at each proficiency level for grade VI English Writing Literacy by district

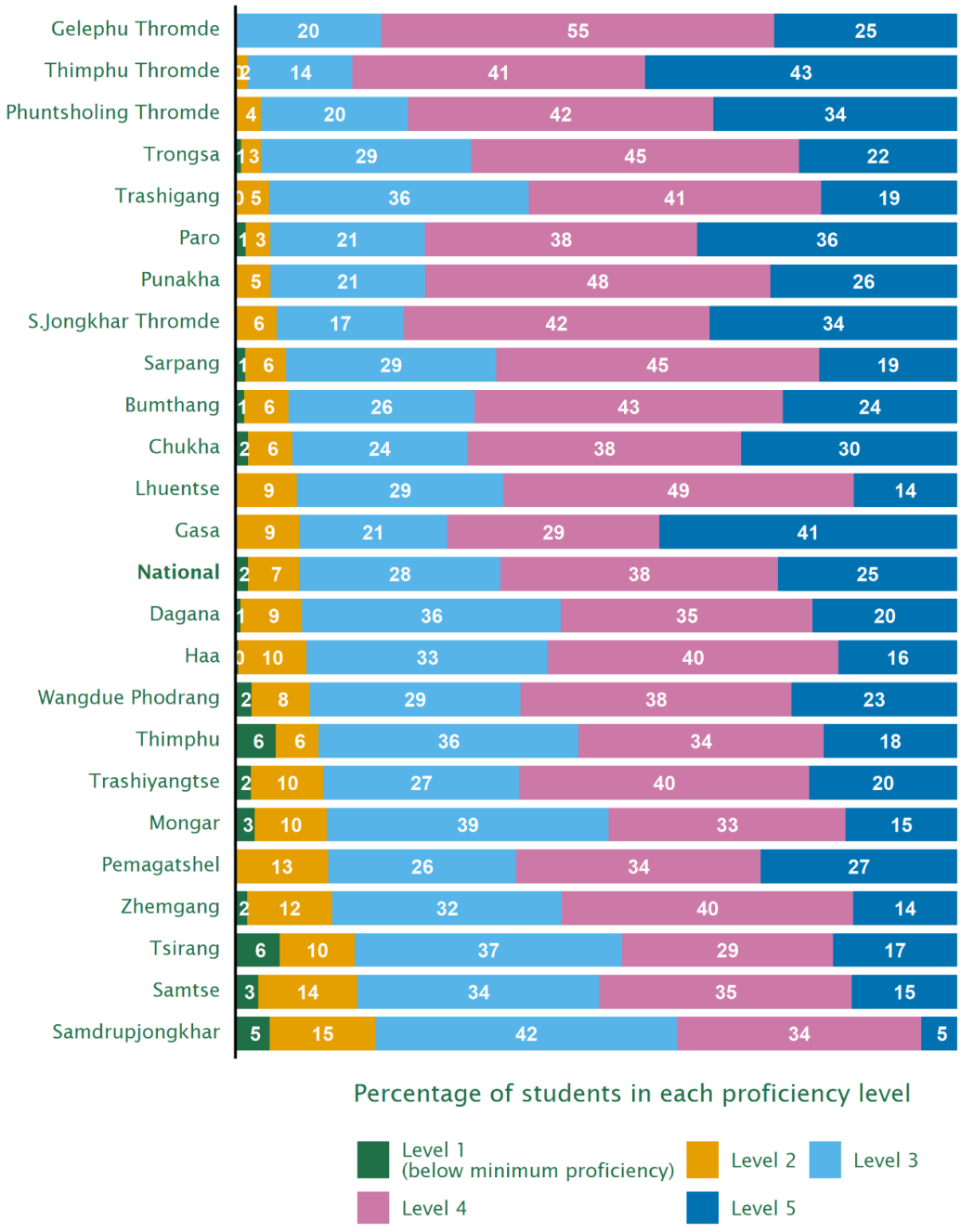
District	Percentage of students at each level					Percentage of students achieving minimum proficiency (%)
	Level 1	Level 2	Level 3	Level 4	Level 5	
Bumthang	1.3	6.1	25.8	42.7	24.1	92.6
Chukha	1.8	6.1	24.3	38.0	29.8	92.1
Dagana	0.7	8.5	35.9	34.9	20.0	90.8
Gasa	0.0	8.8	20.6	29.4	41.2	91.2
Gelephu Thromde	0.0	0.0	20.2	54.5	25.2	100.0
Haa	0.4	9.5	33.4	40.3	16.4	90.1
Lhuentse	0.0	8.6	28.6	48.6	14.3	91.4
Mongar	2.7	10.0	39.1	32.9	15.4	87.3
Paro	1.4	3.4	21.5	37.7	36.0	95.2
Pemagatshel	0.0	12.9	26.1	34.0	27.1	87.1
Phuntsholing Thromde	0.0	3.6	20.4	42.3	33.7	96.4
Punakha	0.0	4.9	21.4	47.8	25.8	95.1
Samdrup Jongkhar	4.7	14.7	41.8	33.9	4.9	80.6
S.Jongkhar Thromde	0.0	5.8	17.5	42.5	34.2	94.2
Samtse	3.2	13.8	33.6	34.9	14.5	83.1
Sarpang	1.4	5.6	29.1	44.8	19.1	93.0
Thimphu	5.7	5.9	36.1	33.9	18.5	88.5
Thimphu Thromde	0.2	1.6	14.5	40.6	43.2	98.2
Trashigang	0.2	4.5	36.0	40.5	18.8	95.3
Trashiyangtse	2.2	10.0	27.1	40.2	20.4	87.8
Trongsa	0.8	2.8	29.2	45.4	21.8	96.4
Tsirang	6.2	10.4	37.1	29.2	17.1	83.4
Wangdue Phodrang	2.2	8.1	29.3	37.6	22.9	89.7
Zhemgang	1.7	11.7	31.9	40.4	14.4	86.6
National	**1.8**	**7.1**	**27.9**	**38.5**	**24.8**	**91.1**

Nationally, 91% of the students met the minimum proficiency level for grade VI English Writing Literacy in the NEA 2024, with 28%, 38% and 25% of students at Levels 3, 4, and 5, respectively. In other words, 9% of the students did not meet the minimum level (i.e., Level 1 or Level 2).

Across districts, the percentage of students who met the minimum proficiency level in English Writing Literacy ranged from 81% (Samdrup Jongkhar) to 100% (Gelephu Thromde). This range of percentages implies that there are some differences across districts in the percentages of students meeting the minimum proficiency level in English Writing Literacy. Another implication of this result is that the percentage of students who did not meet the minimum proficiency level was a maximum of 19%. This was observed in Samdrup Jongkhar, followed by Samtse, Tsirang, and Zhemgang with 17%, 16%, and 14% of their respective students not meeting the minimum proficiency levels.

In contrast, all of the students in Gelephu Thromde met the minimum proficiency level, however this finding needs to be interpreted with caution as only one school was sampled in this district. The other three districts with relatively higher percentages of students meeting the minimum proficiency level were Thimphu Thromde (98%), Phuntsholing Thromde (96%), and Trongsa (96%).

Figure 7.3: Percentage of students at each proficiency level for grade VI English Writing Literacy by district



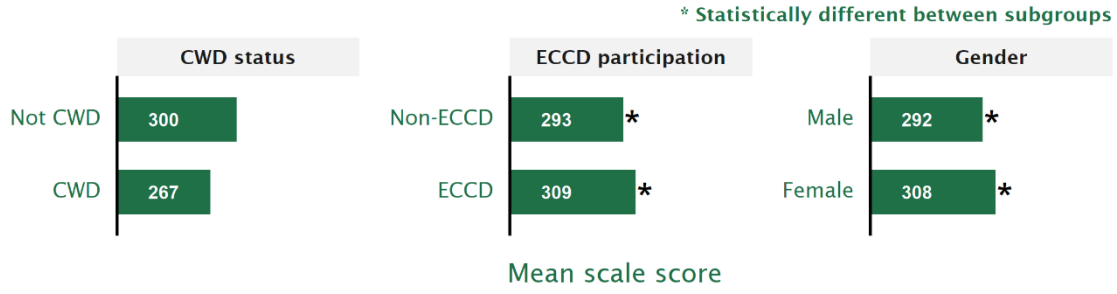
Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

7.2. Performance gaps in context

7.2.1. Performance by student characteristics

Figure 7.4 shows the mean scores for English Writing Literacy by Early Childhood Care and Development (ECCD) participation, gender, and children with disabilities (CWD) status. Firstly, the mean score for students who participated in the ECCD programme was higher than those who did not by 16 points. Secondly, the mean score for girls was noticeably higher than boys by 16 points. In both cases, the performance gap between the subgroups was statistically significantly different. Lastly, the mean score for students without disabilities was higher than for students with disabilities, however, the gap was not found to be statistically significant.

Figure 7.4: Mean scores for grade VI English Writing Literacy by student characteristics

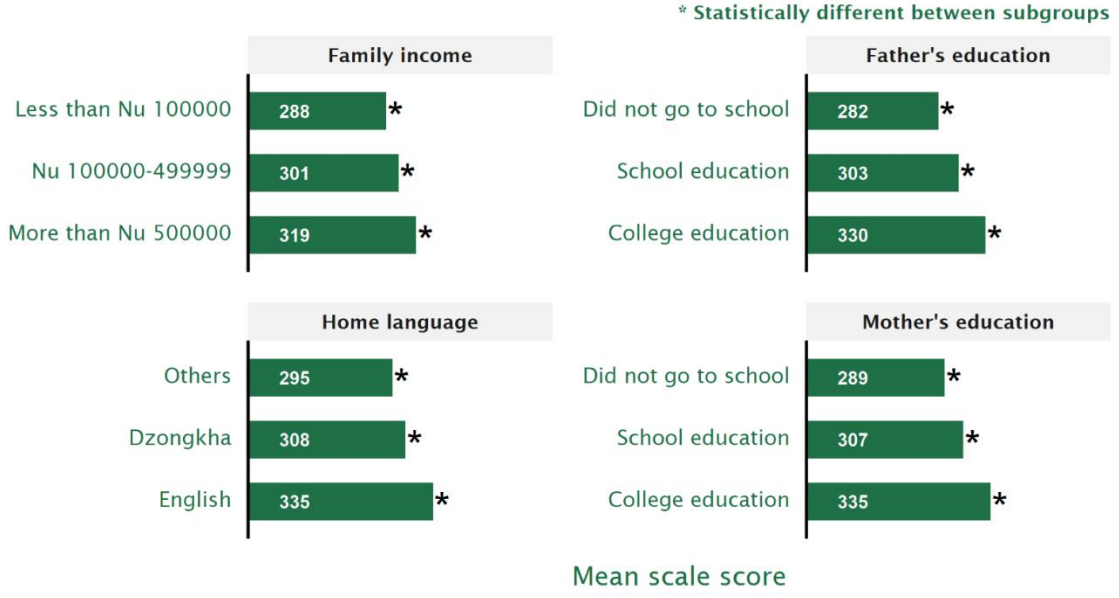


7.2.2. Performance by family characteristics

Figure 7.5 shows the mean scores for English Writing Literacy by students' family income, parental education, and main language spoken by the students at home. Firstly, students from a higher income group tended to outperform students from lower-income families. The performance gap was 31 points between students from the highest (more than Nu 500000) and lowest (less than Nu 100000) family income groups. The magnitude of difference was equivalent to slightly more than half a standard deviation (SD).

Secondly, students whose parents did not go to school tended to underperform relative to students whose parents had received school or college education. The performance gap between students whose parents did not go to school and those with college-educated parents was 48 and 46 points, based on their father's and mother's education levels, respectively.

Figure 7.5: Mean scores for grade VI English Writing Literacy by family characteristics



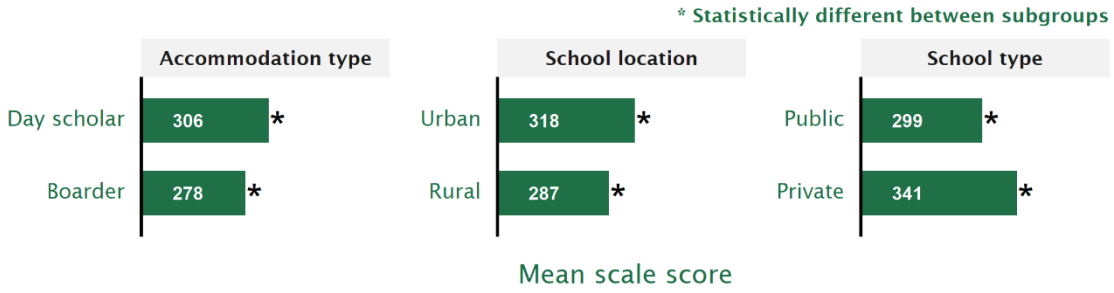
Lastly, students who spoke English as their home language scored noticeably higher than students who spoke Dzongkha or other languages. The performance gap between students who spoke English and other languages at home was 40 points.

In all four cases, the performance gaps between the subgroups were found to be statistically significant and were of a magnitude more than half a SD. These gaps suggest that student performance in English Writing Literacy is closely related to their family background characteristics.

7.2.3. Performance by school characteristics

Figure 7.6 shows the mean scores for English Writing Literacy by students' accommodation type, school location, and school type. Firstly, day scholars outperformed boarders by an average of 28 points. Secondly, students attending urban schools scored, on average, 31 points higher than those in rural schools. Lastly, students in private schools outperformed those in public schools by an average of 42 points. In all three cases, the differences in mean scores between the subgroups were statistically significant, and the magnitude of each difference was more than half a SD, indicating that school characteristics are closely related to performance in English Writing Literacy.

Figure 7.6: Mean scores for grade VI English Writing Literacy by school characteristics



7.3. Summary and conclusion

This chapter presents and discusses the findings from the grade VI English Writing Literacy test. Key findings and recommendations are summarised below.

National: Given that this was the first cycle where English Writing Literacy was tested on grade VI students in the NEA, the national mean score was at 300. About 91% of the students met the minimum proficiency level set by the various educational stakeholders. In other words, only 9% of students did not meet this standard.

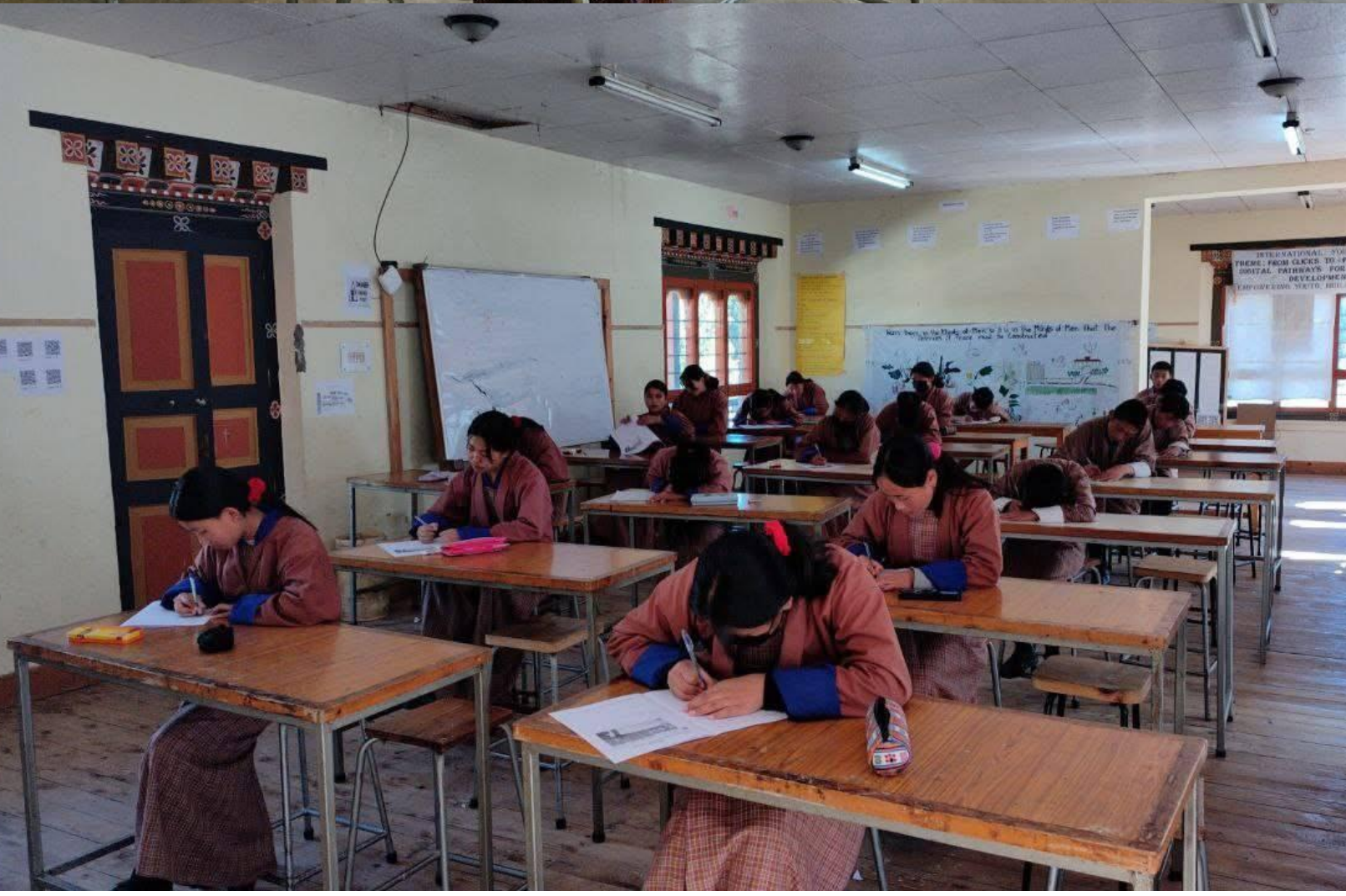
District: Only one district (Thimphu Thromde) performed statistically significantly better than the national cohort of students. In this district, the percentage of students who did not meet the minimum proficiency level was 2%. In contrast, the lowest performing districts in English Writing Literacy were Samdrup Jongkhar and Samtse. In these two districts, at least 17% of students did not meet the minimum proficiency level. This finding underscores the need to investigate the underlying causes of low performance in these districts. Additionally, it highlights the importance of allocating additional support, and implementing targeted policies that prioritise students from these districts.

Gender: Girls outperformed boys in English Writing Literacy, and we found evidence to suggest that this gender gap is statistically significant nationally and in five districts: Bumthang, Mongar, Paro, Samtse, and Thimphu Thromde.

CWD: Students without disabilities outperformed students with disabilities. However, we did not find evidence to suggest that this gap is statistically significant, potentially due to high uncertainty in the estimates for CWD students as a consequence of the small sample size.

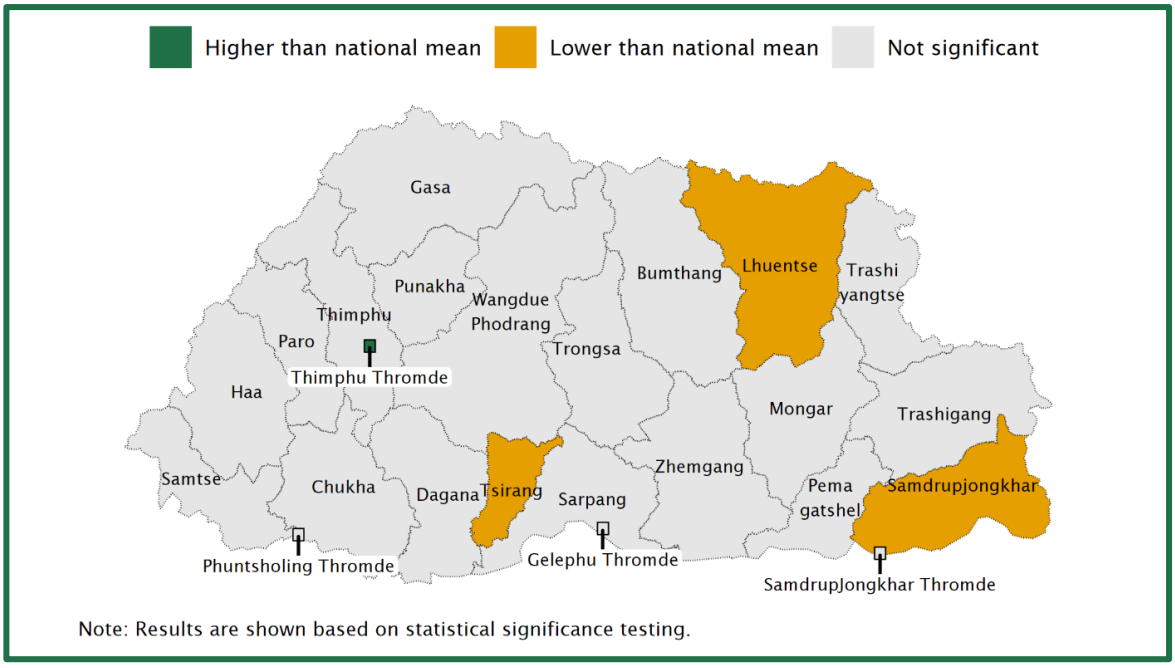
Other characteristics: Statistically significant performance gaps were found in all other student, family, and school characteristics investigated (except CWD, as discussed above). In particular, some of the bigger performance gaps were found between students with parents who did not go to school and those with college-educated parents (based on both the mother's and the father's education), between students from private and public schools, and between students who spoke English at home and those who spoke other languages.

These findings suggest that family background (e.g., education of the family and home language) is closely related to student performance in English Writing Literacy. One policy implication is that students from less advantaged families should be provided with additional support to help close this performance gap. This could include better access to learning resources, language support, and targeted academic interventions to ensure that all students have the same opportunities to perform well academically, regardless of their home environment.



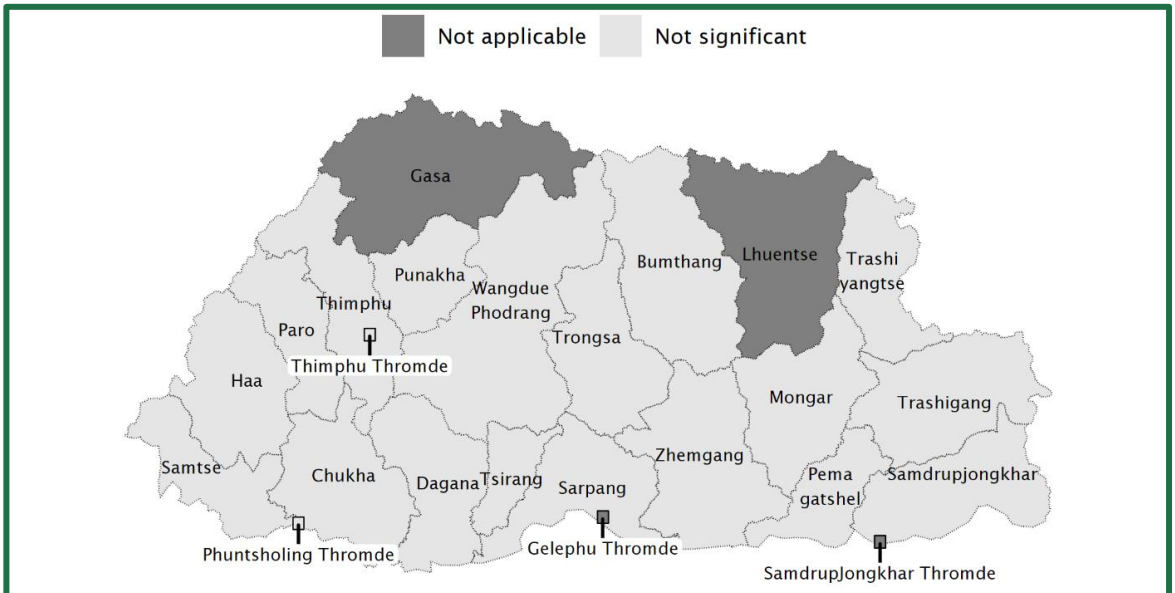
Chapter 8. Achievement of grade VI students in Mathematical Literacy

Summary 8.1: Student achievement in grade VI Mathematical Literacy by district



Note: Results are shown based on statistical significance testing.

Summary 8.2: Student achievement in grade VI Mathematical Literacy by district and gender



Notes: Results are shown based on statistical significance testing. Results of some regions are not available as significance tests were not possible due to small sample sizes in either subgroup.

8.1. Performance

This chapter presents the achievement of grade VI students in the Mathematical Literacy test of the NEA 2024. The discussion focusses on the analysis of student mean scores, percentile distributions, proficiency levels, group differences, and contextual factors affecting student performance.

8.1.1. Mean scores

Table 8.1 shows the mean scores of all of the districts, as well as the national mean. In addition to the mean scores, the standard error and 95% confidence intervals are provided for statistical comparison. These statistics are not provided for Gelephu Thromde; since only students from a single school participated in this district, it is not possible to assess how much results might have differed in other schools. T-tests were conducted to check if the mean score of each district was statistically different from the national mean. The results of these tests, including the p-values, are provided in the table. As explained in the introduction section, all significance testing in this report uses a critical value of $p<0.01$. For this reason, there are some instances in the table where the 95% confidence interval does not include 300 but the difference is not highlighted as statistically significant.

Three districts – Lhuentse[2], Samdrup Jongkhar, and Tsirang – had mean scores that were statistically significantly lower than the national mean. Among these three districts, the lowest mean score was observed in Samdrup Jongkhar. The students from Samdrup Jongkhar performed lower than the national cohort by an average of 24 points (276 vs 300).

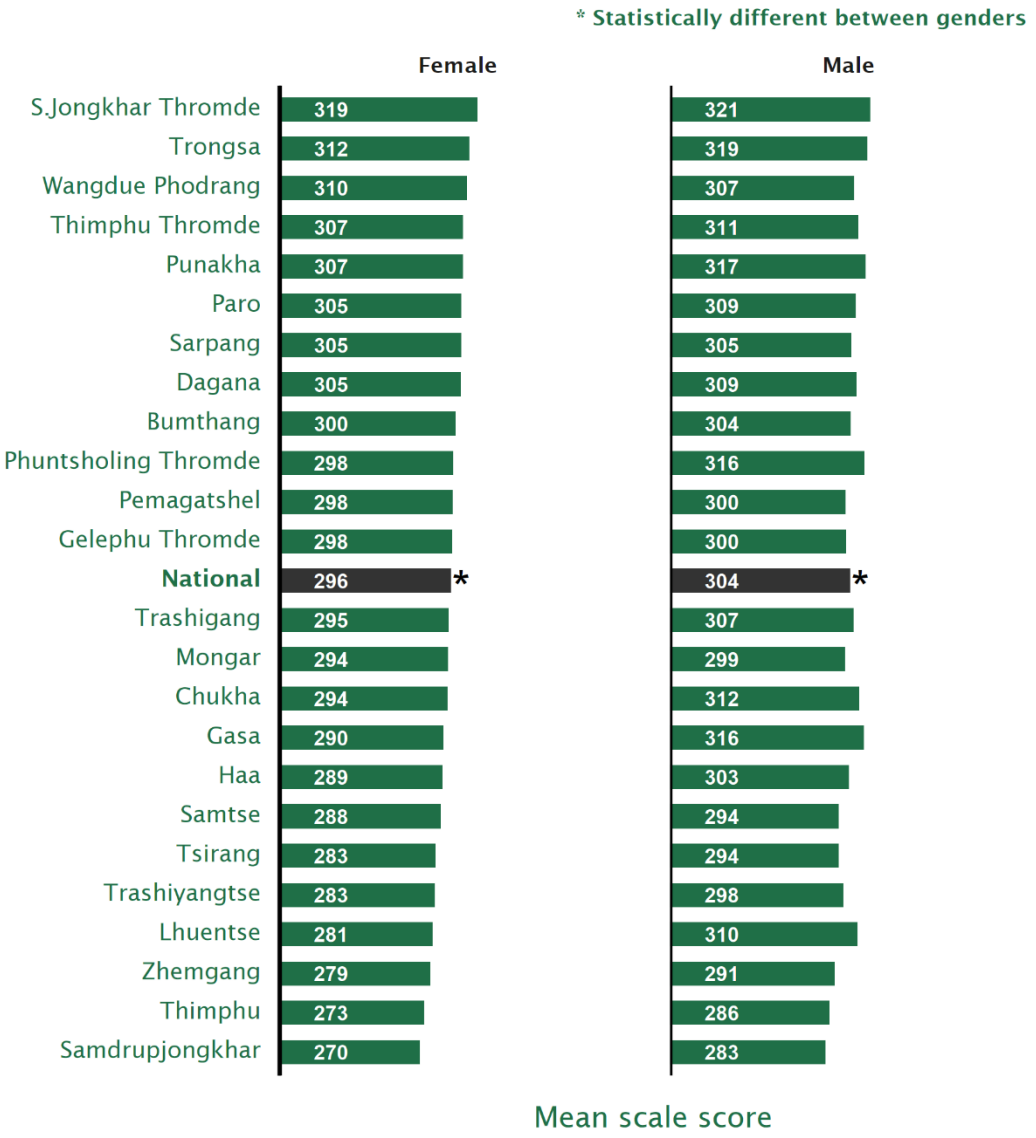
In contrast, one district, Thimphu Thromde, had a mean score that was statistically significantly higher than the national mean. The students from Thimphu Thromde scored 9 points higher than the national mean (309 vs 300).

[2] Due to the very small sample size from this district, this finding should be treated with extreme caution.

Table 8.1: Mean scores for grade VI Mathematical Literacy by district

District	Mean	Standard error	95% confidence interval	p-value	Statistically different than the national mean?
Bumthang	302	8.79	285 - 319	0.807	Not significant
Chukha	302	7.66	287 - 317	0.766	Not significant
Dagana	307	5.15	297 - 317	0.193	Not significant
Gasa	303	13.58	276 - 330	0.834	Not significant
Gelephu Thromde	299	-	-	-	-
Haa	296	6.25	283 - 308	0.506	Not significant
Lhuentse	292	0.32	292 - 293	0.000	Lower
Mongar	297	5.25	286 - 307	0.549	Not significant
Paro	307	2.92	301 - 313	0.038	Not significant
Pemagatshel	299	2.41	294 - 304	0.699	Not significant
Phuntsholing Thromde	307	6.13	295 - 319	0.263	Not significant
Punakha	312	8.01	296 - 328	0.145	Not significant
Samdrup Jongkhar	276	3.98	268 - 284	0.000	Lower
S.Jongkhar Thromde	320	9.41	302 - 338	0.037	Not significant
Samtse	291	5.56	280 - 302	0.110	Not significant
Sarpang	305	4.75	296 - 314	0.327	Not significant
Thimphu	279	9.74	260 - 299	0.038	Not significant
Thimphu Thromde	309	2.84	303 - 314	0.007	Higher
Trashigang	300	5.38	289 - 310	0.986	Not significant
Trashiyangtse	290	10.99	269 - 312	0.374	Not significant
Trongsa	315	10.43	295 - 336	0.151	Not significant
Tsirang	288	3.88	281 - 296	0.006	Lower
Wangdue Phodrang	309	5.02	299 - 319	0.096	Not significant
Zhemgang	285	6.74	271 - 298	0.027	Not significant
National	**300**	**1.60**	**297 - 303**	-	-

Figure 8.1: Mean scores for grade VI Mathematical Literacy by district and gender



Notes: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution. Significance tests were not carried out for Gasa, Gelephu Thromde, Lhuentse, and S.Jongkhar Thromde because only one or two schools participated.

Figure 8.1 compares the mean Mathematical Literacy scores of boys and girls within each district. It shows a statistically significant difference between genders at the national level. However, there were no statistically significant differences between boys and girls within any specific districts.

8.1.2. Percentile distributions

The percentile distribution illustrates how students' performance is spread across the range of possible scores. It helps indicate a student's standing relative to the rest of the group. In the context of the NEA, a percentile score represents the scale score below which a certain percentage of students fall. For example, the 5th percentile score in Mathematical Literacy indicates that 5% of students scored below that value.

Percentile distributions also provide insight into the degree of variation in student performance. The range between the 25th and 75th percentiles – known as the interquartile range – captures the middle 50% of scores. Meanwhile, the range between the 5th and 95th percentiles includes 90% of all scores. A wider range suggests greater variability in performance among students, while a narrower range indicates more similarity.

Table 8.2: Percentile scores in grade VI Mathematical Literacy, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	220	265	292	326	386	61	166
Male	224	269	301	334	395	65	171
National	**224**	**265**	**298**	**331**	**387**	**66**	**163**

Table 8.2 presents the percentile scores and the ranges for the NEA 2024 Mathematical Literacy test, both nationally and by gender. Nationally, 50% of students scored between 265 and 331, while 90% scored between 224 and 387.

When broken down by gender, the distribution of scores for girls was slightly narrower than that of boys. The interquartile range (25th–75th percentile) for girls was 61 points, compared to 65 points for boys, and the range between the 5th and 95th percentiles was 166 points for girls and 171 points for boys. This indicates that girls performed marginally more similarly to one another than boys.

Table 8.3 shows the percentile score distribution by district, and Figure 8.2 visualises the distribution alongside the mean score for each district. Districts shown on Figure 8.2 are ordered from highest to lowest mean score. The results show considerable variation in score ranges across districts.

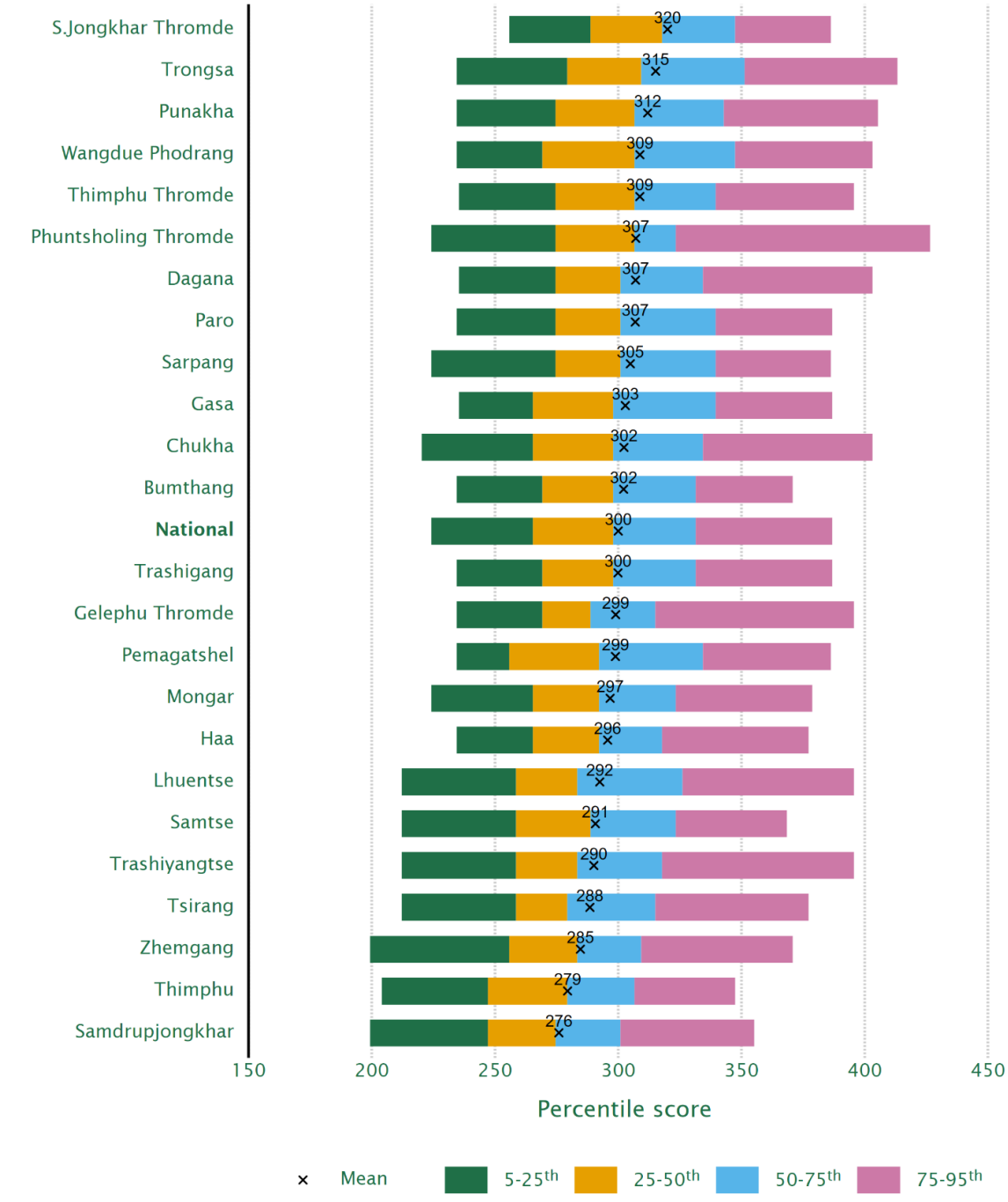
The district with the narrowest interquartile range was Gelephu Thromde (46), suggesting that student performance in that district was more consistent compared to the variation observed in other districts. In contrast, Pemagatshel had the widest interquartile range (79), indicating greater variability in student performance compared to other districts. For the remaining districts, the interquartile range was found to be between 49 and 78 points. The score range for the 5th–95th percentiles were also highly variable, ranging from 131 (Samdrup Jongkhar Thromde) to 202 (Phuntsholing Thromde).

Table 8.3: Percentile scores in grade VI Mathematical Literacy, nationally and by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	234	269	298	331	371	62	136
Chukha	220	265	298	334	403	69	183
Dagana	235	275	301	334	403	60	168
Gasa	235	265	298	339	387	74	151
Gelephu Thromde	234	269	289	315	396	46	161
Haa	234	265	292	318	377	52	143
Lhuentse	212	259	283	326	396	67	183
Mongar	224	265	292	323	379	58	155
Paro	234	275	301	339	387	65	152
Pemagatshel	234	256	292	334	386	79	152
Phuntsholing Thromde	224	275	307	323	427	49	202
Punakha	234	275	307	343	405	68	171
Samdrup Jongkhar	199	247	275	301	355	54	156
S.Jongkhar Thromde	256	289	318	347	386	59	131
Samtse	212	259	289	323	368	65	156
Sarpang	224	275	301	339	386	65	162
Thimphu	204	247	279	307	347	60	143
Thimphu Thromde	235	275	307	339	396	65	160
Trashigang	234	269	298	331	387	62	152
Trashiyangtse	212	259	283	318	396	59	183
Trongsa	234	279	309	351	413	72	179
Tsirang	212	259	279	315	377	57	165
Wangdue Phodrang	234	269	307	347	403	78	169
Zhemgang	199	256	283	309	371	54	172
National	**224**	**265**	**298**	**331**	**387**	**66**	**163**

Another observation from Figure 8.2 is that while the difference in mean scores between some districts was small, the score distribution can vary noticeably between them. One such example is Dagana and Phuntsholing Thromde: the mean scores between these two districts were the same, but the scale range for the 5th–95th percentiles was much wider for Phuntsholing Thromde. This suggests that while average performance was the same in the two districts, Phuntsholing Thromde had a more heterogeneous group of grade VI students in their Mathematical Literacy performance than Dagana.

Figure 8.2: Percentile scores in grade VI Mathematical Literacy, nationally and by district



8.1.3. Proficiency levels

Table 8.4 shows the proficiency levels developed to describe performance in grade VI Mathematical Literacy. The lowest proficiency level is Level 1, and the highest proficiency level is Level 5. The description for each proficiency level indicates the skills and knowledge students at that level are expected to be able to demonstrate.

Table 8.4: Proficiency descriptions for grade VI Mathematical Literacy

Proficiency level	Description
Level 5	Students at this level show strong conceptual understanding and fluency across number, measurement, geometry, data, and probability. They are able to confidently solve problems involving fractions, percentages, and ratios, and to apply mathematical reasoning efficiently to unfamiliar situations. They can determine side lengths of polygons, convert and compare measurement units, and calculate areas of composite shapes. Their representations and explanations of mathematical ideas are clear and well-structured, showing readiness for more complex mathematical thinking in higher grades.
Level 4	Students at this level demonstrate confident use of mathematical reasoning and problem-solving skills. Their understanding of place value, ratios, and decimals is secure and applied flexibly in new contexts. They can compare fractions, percentages, and ratios, and solve simple linear equations. They can construct triangles and nets for prisms and pyramids, and compute areas and volumes to solve real-life problems. They can explain geometric properties of shapes, including symmetry. They are able to interpret a variety of data displays and solve more complex probability problems. They effectively use diagrams, models, and representations to explain their thinking.
Level 3	Students at this level demonstrate a broader understanding of number, geometric concepts, and data relationships. They can describe place value patterns and factor numbers up to two digits. They are able to add simple fractions and can represent them visually and numerically. They can explain relationships between parts and whole using ratio, and are able to recognise quantities as percentages. They are able to plot points on all quadrants of a coordinate graph, and convert between related SI units (linear, square, and cubic). They can calculate and solve problems involving perimeters, area, and volumes, including measurement in different units. They can distinguish between perpendicular and non-perpendicular lines. They are able to interpret, compare, and organise data in graphs and plots, and to explain simple probability using percentages and fractions. Application of knowledge is becoming more independent, with multiple strategies used to solve problems.
Level 2	Students at this level demonstrate a growing understanding of mathematical concepts. They are able to interpret place value up to seven digits and basic decimal place value. They are able to investigate and describe fundamental relationships between measurement units (linear, square, and cubic) and calculate areas using appropriate units. They can explain basic geometric rules (e.g., the sum of any two triangle sides is greater than the third), identify rates as comparisons of different units, and measure basic angles using a protractor. They can interpret data in basic graphical forms, such as simple line graphs. Problem solving often relies on examples and guided contexts.
Level 1	Students at this level demonstrate a developing understanding of basic mathematical concepts. They can read and write whole numbers up to five digits;

	percentages and decimals are recognised and written in a rounded form, but are not yet consistently applied to problem solving. They are able to recognise common angles (such as 45°, 90°, and angles greater than 90°), and show an early sense of size and volume for simple shapes and measurement. They can make basic connections between volume and container capacity. They are beginning to classify shapes and tessellation, and to recognise rotational symmetry.

One of the objectives of the NEA 2024 is to set a minimum proficiency level for grade VI Mathematical Literacy. After a series of extensive reviews and deliberations among education stakeholders in the country, it has been decided that students are expected to reach at least Level 3 at the end of grade VI. Thus, students with scores between Level 3 and Level 5 (and above in future NEAs) are considered to have met the minimum proficiency level of grade VI.

Table 8.5 shows the percentage of students at each proficiency level, and the total percentage of students who achieved the minimum level of proficiency (Level 3 and above). Figure 8.3 visualises these results, ordered from the highest to the lowest percentage of students, with the districts with the highest percentage of students meeting the minimum proficiency level at the top, and the districts with the lowest percentage of students meeting the minimum proficiency level at the bottom of the graph.

Nationally, only 36% of the students met the minimum proficiency level for grade VI Mathematical Literacy in the NEA 2024, with 26%, 9%, and 2% of students at Level 3, Level 4, and Level 5, respectively. In other words, 64% of the students did not meet the minimum level set by various educational stakeholders in Bhutan (i.e., Level 1 and Level 2). It is worth noting that the majority of students in the national cohort who did not meet the minimum standard were performing at Level 2 – just below the minimum proficiency level. This suggests that, with targeted support, it's likely that more students could reach the expected standard in the near future.

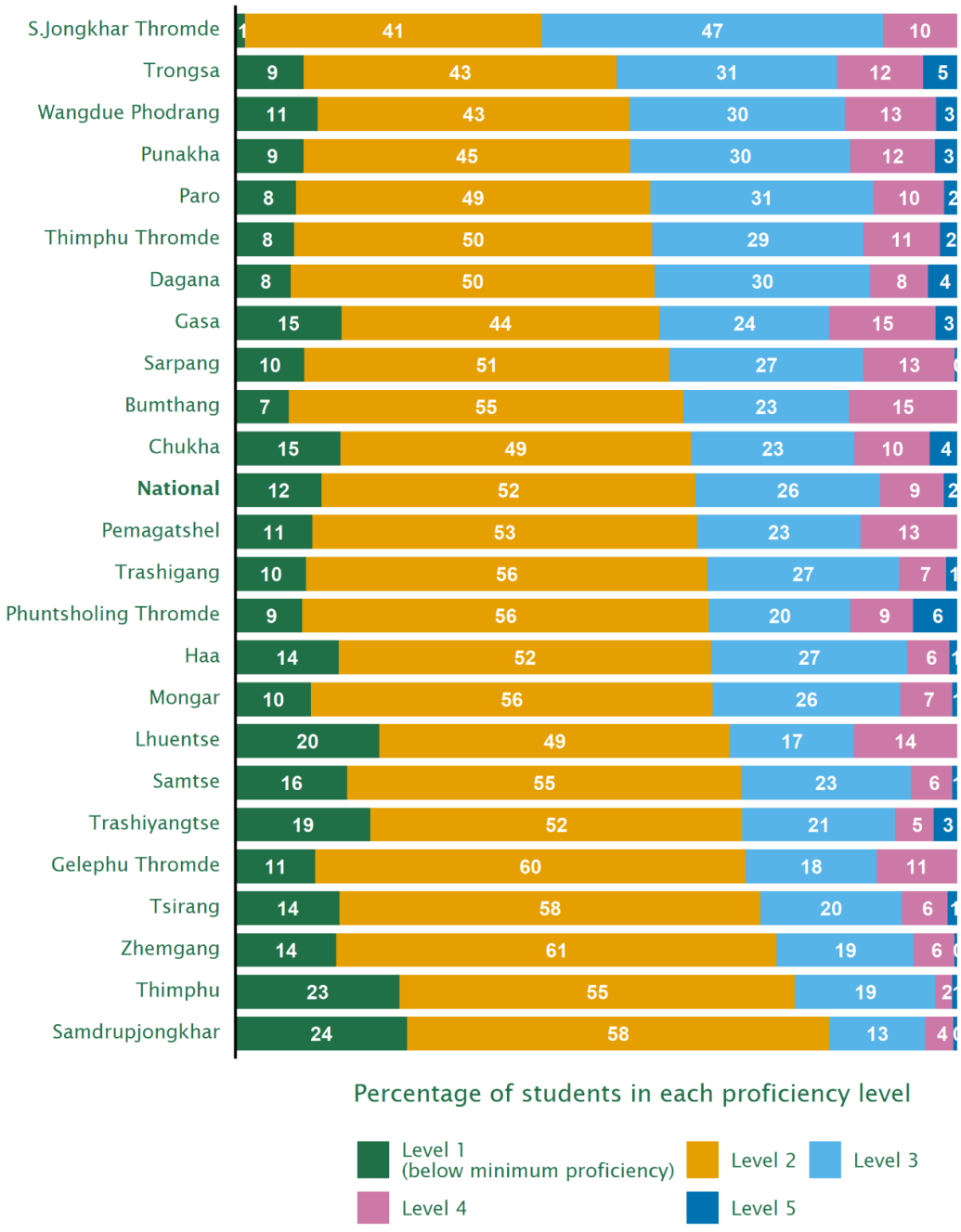
Across districts, the percentage of students who met the minimum proficiency level in Mathematical Literacy ranged from 18% (Samdrup Jongkhar) to 58% (Samdrup Jongkhar Thromde). The range of these percentages implies that the percentages of students meeting the minimum proficiency level in Mathematical Literacy vary greatly across districts, suggesting the need to tailor policies according to the needs of students in each district. Apart from Samdrup Jongkhar, Thimphu and Zhemgang were among the districts with the lowest percentages, with 22% and 25% of their students meeting the minimum proficiency levels, respectively.

In contrast, the districts with the three highest percentages of students meeting the standards were Samdrup Jongkhar Thromde (58%), Trongsa (47%), and Wangdue Phodrang (45%).

Table 8.5: Percentage of students at each proficiency level for grade VI Mathematical Literacy by district

District	Percentage of students at each level					Percentage of students achieving minimum proficiency (%)
	Level 1	Level 2	Level 3	Level 4	Level 5	
Bumthang	7.4	54.7	23.0	14.9	0.0	37.9
Chukha	14.6	48.5	22.7	10.5	3.7	36.9
Dagana	7.7	50.5	29.9	8.0	4.0	41.9
Gasa	14.7	44.1	23.5	14.7	2.9	41.2
Gelephu Thromde	11.1	59.6	18.2	11.1	0.0	29.3
Haa	14.3	51.6	27.2	5.9	1.0	34.0
Lhuentse	20.0	48.6	17.1	14.3	0.0	31.4
Mongar	10.5	55.7	26.0	7.2	0.6	33.9
Paro	8.4	49.1	30.9	9.9	1.7	42.5
Pemagatshel	10.7	53.3	22.7	13.3	0.0	36.0
Phuntsholing Thromde	9.3	56.4	19.6	8.7	6.1	34.3
Punakha	9.5	45.2	30.5	11.8	3.0	45.3
Samdrup Jongkhar	23.8	58.5	13.3	3.9	0.4	17.7
S.Jongkhar Thromde	1.4	41.1	47.3	10.2	0.0	57.5
Samtse	15.5	54.6	23.5	5.8	0.6	29.9
Sarpang	9.6	50.6	26.9	12.7	0.2	39.8
Thimphu	22.8	54.8	19.5	2.3	0.6	22.4
Thimphu Thromde	8.1	49.7	29.3	10.6	2.3	42.2
Trashigang	9.8	55.6	26.6	6.5	1.4	34.6
Trashiyangtse	18.7	51.6	21.2	5.3	3.2	29.7
Trongsa	9.5	43.4	30.5	11.9	4.7	47.1
Tsirang	14.5	58.3	19.6	6.3	1.3	27.2
Wangdue Phodrang	11.4	43.3	29.8	12.7	2.8	45.3
Zhemgang	14.0	61.1	18.9	5.6	0.3	24.9
National	**11.9**	**51.8**	**25.6**	**8.8**	**1.8**	**36.2**

Figure 8.3: Percentage of students at each proficiency level for grade VI Mathematical Literacy by district



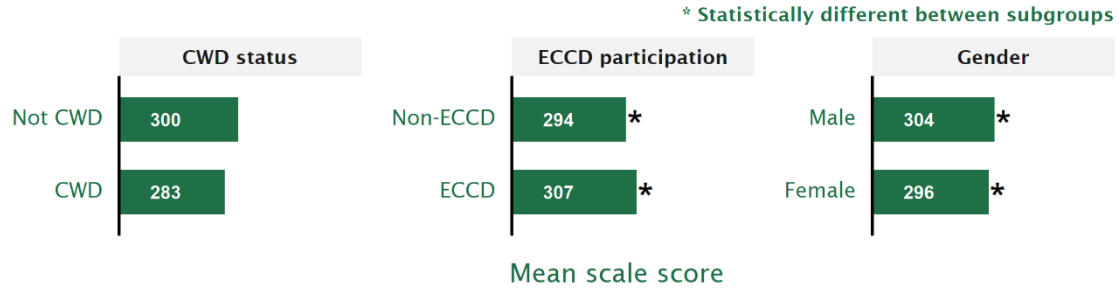
Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

8.2. Performance gaps in context

8.2.1. Performance by student characteristics

Figure 8.4 shows the mean scores for Mathematical Literacy by Early Childhood Care and Development (ECCD) participation, gender, and children with disabilities (CWD) status. Firstly, the mean score for students who participated in the ECCD programme was higher than those who did not by 13 points. Secondly, the mean score for boys was noticeably higher than girls by 8 points. In both cases, the performance gap between the subgroups was statistically significantly different. Lastly, the mean score for students without disabilities was higher than for students with disabilities, however, the gap was not found to be statistically significant.

Figure 8.4: Mean scores for grade VI Mathematical Literacy by student characteristics

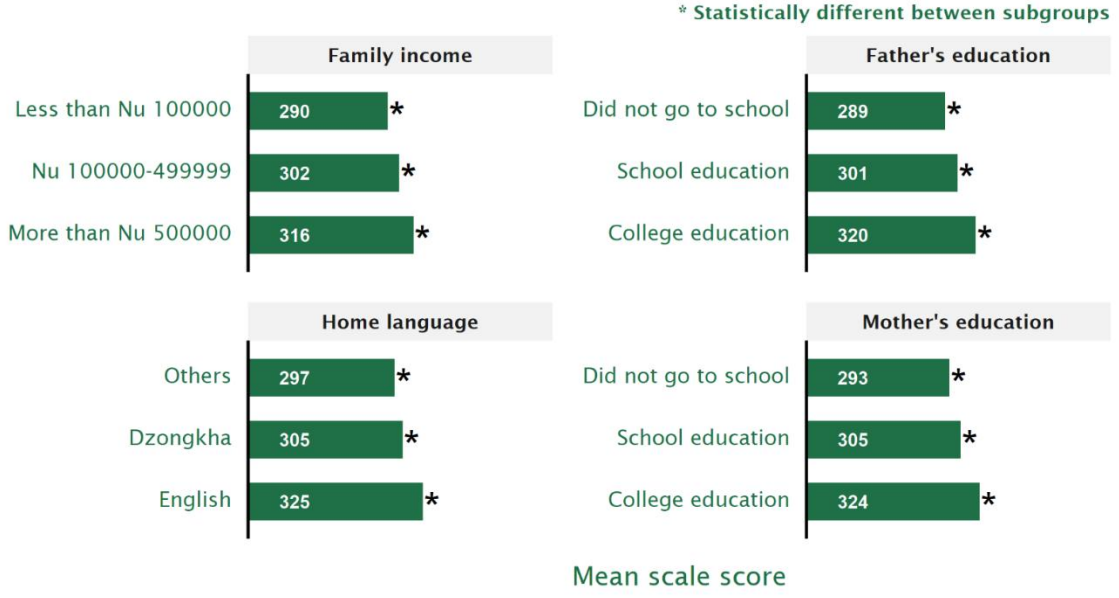


8.2.2. Performance by family characteristics

Figure 8.5 shows the mean scores for Mathematical Literacy by students' family income, parental education, and main language spoken by the students at home. Firstly, students from a higher income group tended to outperform students from lower-income families. The performance gap was 26 points between students from the highest (more than Nu 500000) and lowest (less than Nu 100000) family income groups. The magnitude of difference was equivalent to slightly more than half a standard deviation (SD).

Secondly, students whose parents did not go to school tended to underperform relative to students whose parents had received school or college education. The performance gap between students whose parents did not go to school and those with college-educated parents was 31 for both the father's and the mother's education levels.

Figure 8.5: Mean scores for grade VI Mathematical Literacy by family characteristics



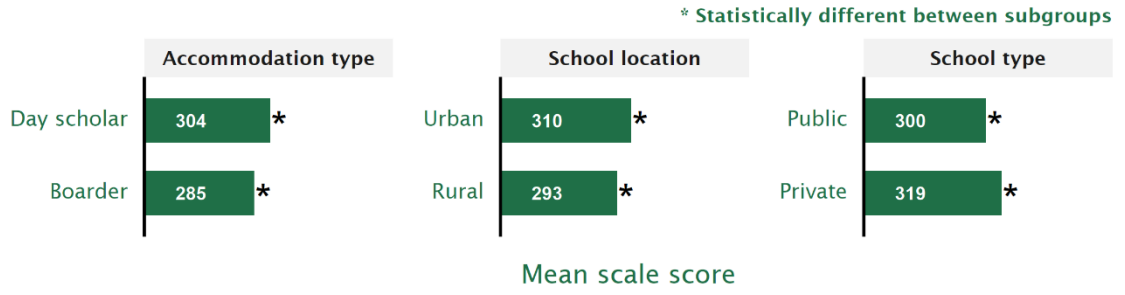
Lastly, students who spoke English as their home language scored noticeably higher than students who spoke Dzongkha or other languages. The performance gap between students who spoke English and other languages at home was 28 points.

In all four cases, the performance gaps between the subgroups were found to be statistically significant and were of a magnitude more than half a SD. These gaps suggest that student performance in Mathematical Literacy is closely related to their family background characteristics.

8.2.3. Performance by school characteristics

Figure 8.6 shows the mean scores for Mathematical Literacy by students' accommodation type, school location, and school type. Firstly, day scholars outperformed boarders by an average of 19 points. Secondly, students attending urban schools scored, on average, 17 points higher than those in rural schools. Lastly, students in private schools outperformed those in public schools by an average of 19 points. In all three cases, the differences in mean scores between the subgroups were statistically significant, though the magnitude of each difference was less than half a SD, indicating a moderate disparity in performance across these subgroups.

Figure 8.6: Mean scores for grade VI Mathematical Literacy by school characteristics



8.3. Summary and conclusion

This chapter presents and discusses the findings from the grade VI Mathematical Literacy test. Key findings and recommendations are summarised below.

National: Given that this was the first cycle where Mathematical Literacy was tested on grade VI students in the NEA, the national mean score was at 300. Only 36% of the students met the minimum proficiency level set by the various educational stakeholders. In other words, about 64% – around 6 in 10 students – did not meet this standard. However, most students who performed below the standard were at the proficiency level just below the minimum standard (Level 2). This suggests that with adequate support targeting students who are at risk of falling behind, it's likely that more students could reach the expected standard in the near future.

District: Only one district (Thimphu Thromde) performed statistically significantly better than the national cohort of students. In this district, the percentage of students who did not meet the minimum proficiency level was only 58%. In contrast, the lowest performing district in Mathematical Literacy was Samdrup Jongkhar. Performances from Lhuentse and Tsirang were also found to be statistically different to the national mean. In all three districts, at least 69% of students did not meet the minimum proficiency level. This finding underscores the need to investigate the underlying causes of low performance in these districts. Additionally, it highlights the importance of allocating additional support, and implementing targeted policies that prioritise students from these districts.

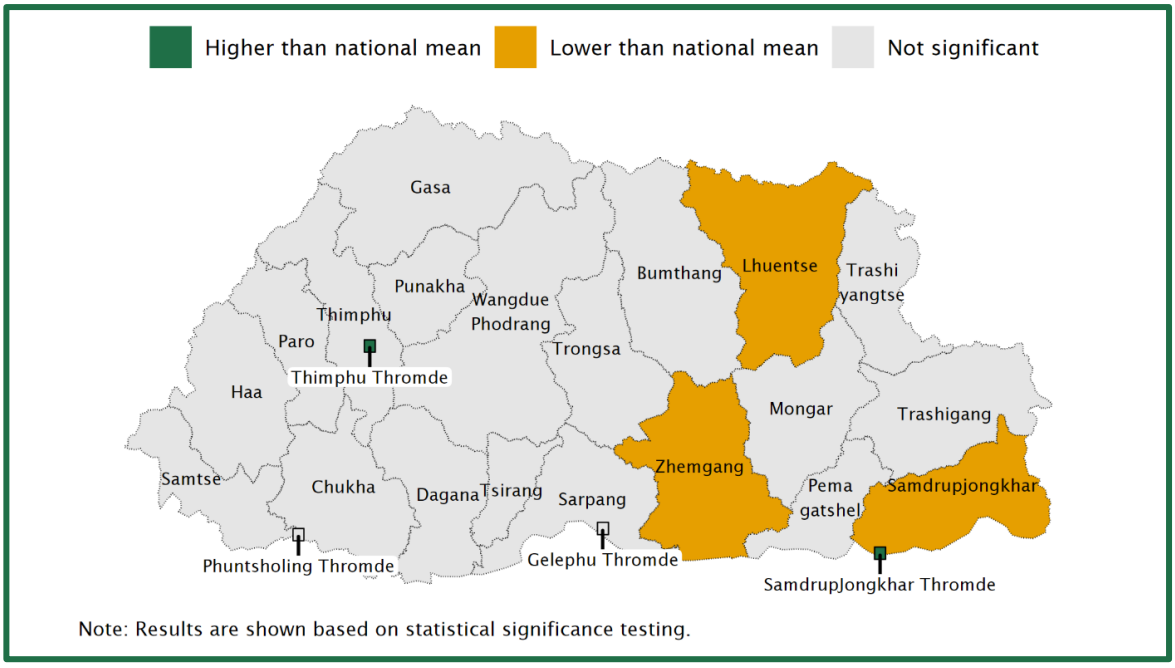
Gender: Boys statistically outperformed girls in Mathematical Literacy nationally. However, the gender gap was smaller in magnitude compared to the performance differences observed across other student characteristics.

CWD: Students without disabilities outperformed students with disabilities. However, we did not find evidence to suggest that this gap is statistically significant, potentially due to high uncertainty in the estimates for CWD students as a consequence of the small sample size.

Other characteristics: Statistically significant performance gaps were found in all other student, family, and school characteristics investigated (except CWD, as discussed above). In particular, some of the bigger performance gaps were found between students with parents who did not go to school and those with college-educated parents (based both on the mother's and the father's education), and between students who spoke English at home and those who spoke other languages. These findings suggest that family background (e.g., socio-economic status of the family) is closely related to student performance in Mathematical Literacy. One policy implication is that students from less advantaged families should be provided with additional support to help close this performance gap. This could include better access to learning resources, language support, and targeted academic interventions to ensure that all students have the same opportunities to perform well academically, regardless of their home environment.

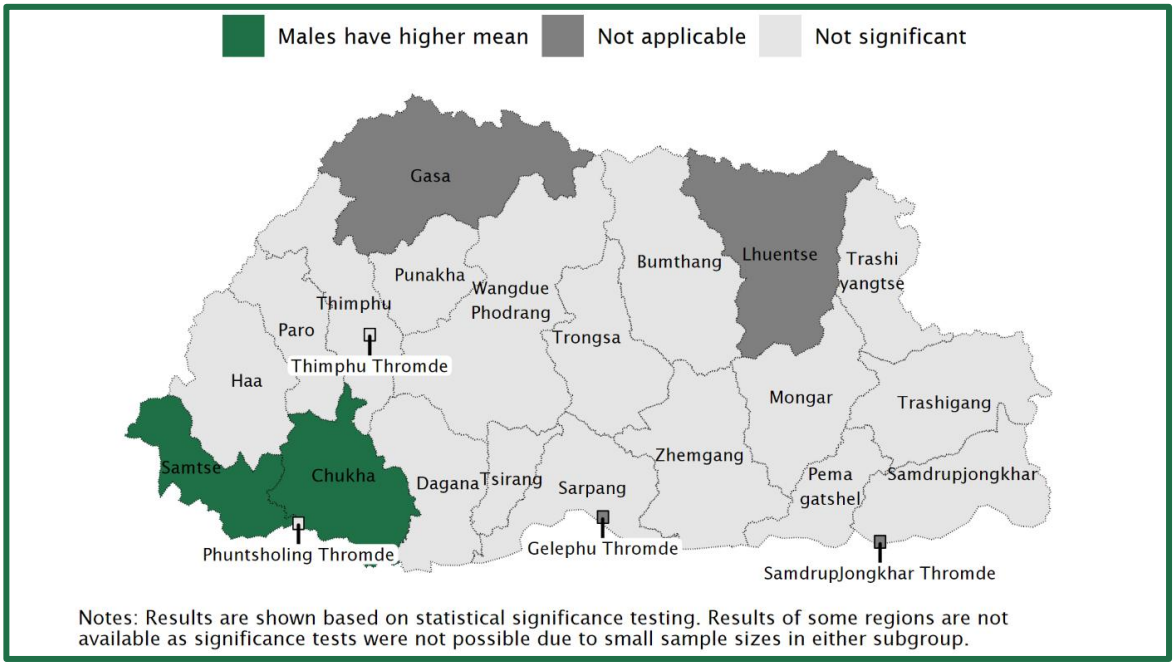
Chapter 9. Achievement of grade VI students in Scientific Literacy

Summary 9.1: Student achievement in grade VI Scientific Literacy by district



Note: Results are shown based on statistical significance testing.

Summary 9.2: Student achievement in grade VI Scientific Literacy by district and gender



Notes: Results are shown based on statistical significance testing. Results of some regions are not available as significance tests were not possible due to small sample sizes in either subgroup.

9.1. Performance

This chapter presents the achievement of grade VI students in the Scientific Literacy test of the NEA 2024. The discussion focusses on the analysis of student mean scores, percentile distributions, proficiency levels, group differences, and contextual factors affecting student performance.

9.1.1. Mean scores

Table 9.1 shows the mean scores of all of the districts, as well as the national mean. In addition to the mean scores, the standard error and 95% confidence intervals are provided for statistical comparison. These statistics are not provided for Gelephu Thromde; since only students from a single school participated in this district, it is not possible to assess how much results might have differed in other schools. T-tests were conducted to check if the mean score of each district was statistically different from the national mean. The results of these tests, including the p-values, are provided in the table. As explained in the introduction section, all significance testing in this report uses a critical value of $p<0.01$. For this reason, there are some instances in the table where the 95% confidence interval does not include 300 but the difference is not highlighted as statistically significant.

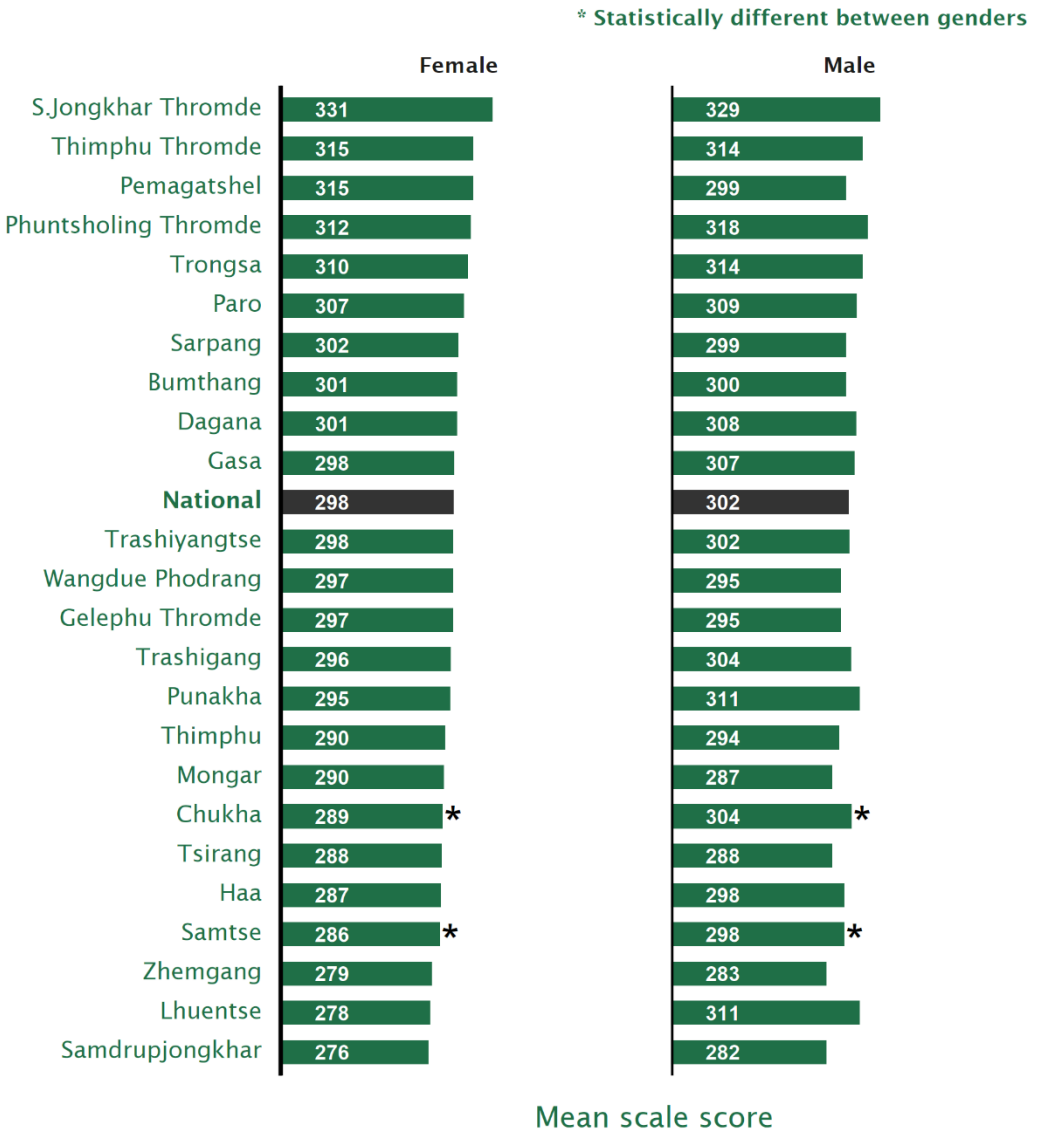
Three districts – Lhuentse, Samdrup Jongkhar, and Zhemgang – had mean scores that were statistically significantly lower than the national mean. Among these three districts, the lowest mean score was observed in Samdrup Jongkhar. The students from Samdrup Jongkhar performed lower than the national cohort by an average of 21 points (279 vs 300).

In contrast, two districts – Samdrup Jongkhar Thromde and Thimphu Thromde – had mean scores that were statistically significantly higher than the national mean. The students from Samdrup Jongkhar Thromde, in particular, scored 30 points higher than the national mean (330 vs 300).

Table 9.1: Mean scores for grade VI Scientific Literacy by district

District	Mean	Standard error	95% confidence interval	p-value	Statistically different than the national mean?
Bumthang	300	4.61	291 - 309	0.949	Not significant
Chukha	296	6.60	283 - 309	0.595	Not significant
Dagana	304	8.28	288 - 321	0.595	Not significant
Gasa	302	11.73	279 - 325	0.840	Not significant
Gelephu Thromde	296	-	-	-	-
Haa	292	3.26	286 - 299	0.038	Not significant
Lhuentse	291	2.80	286 - 297	0.008	Lower
Mongar	289	10.19	269 - 309	0.271	Not significant
Paro	308	4.29	299 - 316	0.098	Not significant
Pemagatshel	306	8.33	290 - 323	0.448	Not significant
Phuntsholing Thromde	315	7.63	300 - 330	0.054	Not significant
Punakha	303	2.02	299 - 307	0.194	Not significant
Samdrup Jongkhar	279	3.76	272 - 287	0.000	Lower
S.Jongkhar Thromde	330	9.94	311 - 350	0.003	Higher
Samtse	292	5.87	281 - 304	0.205	Not significant
Sarpang	301	5.86	289 - 312	0.922	Not significant
Thimphu	292	8.74	275 - 309	0.366	Not significant
Thimphu Thromde	314	3.20	308 - 320	0.000	Higher
Trashigang	299	5.15	289 - 309	0.879	Not significant
Trashiyangtse	300	8.29	284 - 316	0.997	Not significant
Trongsa	312	6.05	300 - 324	0.064	Not significant
Tsirang	288	4.72	278 - 297	0.015	Not significant
Wangdue Phodrang	296	6.62	283 - 309	0.578	Not significant
Zhemgang	281	4.81	271 - 290	0.000	Lower
National	**300**	**1.69**	**297 - 303**	-	-

Figure 9.1: Mean scores for grade VI Scientific Literacy by district and gender



Notes: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution. Significance tests were not carried out for Gasa, Gelephu Thromde, Lhuentse, and S.Jongkhar Thromde because only one or two schools participated.

Figure 9.1 compares the mean Scientific Literacy scores of boys and girls within each district. It shows no statistically significant difference between genders at the national level. However, in two districts – Chukha and Samtse – boys had outperformed girls. In Chukha, boys outperformed girls by 15 points (304 vs 289), while in Samtse, boys outperformed girls by 12 points (298 vs 286).

9.1.2. Percentile distributions

The percentile distribution illustrates how students' performance is spread across the range of possible scores. It helps indicate a student's standing relative to the rest of the group. In the context of the NEA, a percentile score represents the scale score below which a certain percentage of students fall. For example, the 5th percentile score in Scientific Literacy indicates that 5% of students scored below that value.

Percentile distributions also provide insight into the degree of variation in student performance. The range between the 25th and 75th percentiles – known as the interquartile range – captures the middle 50% of scores. Meanwhile, the range between the 5th and 95th percentiles includes 90% of all scores. A wider range suggests greater variability in performance among students, while a narrower range indicates more similarity.

Table 9.2: Percentile scores in grade VI Scientific Literacy, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	223	265	298	329	388	64	166
Male	223	269	298	336	388	67	166
National	**223**	**265**	**298**	**332**	**388**	**67**	**166**

Table 9.2 presents the percentile scores and the ranges for the NEA 2024 Scientific Literacy test, both nationally and by gender. Nationally, 50% of students scored between 265 and 332, while 90% scored between 223 and 388.

When broken down by gender, the distribution of scores for girls was slightly narrower than that of boys. The interquartile range (25th–75th percentile) for girls was 64 points, compared to 67 points for boys, indicating that girls performed marginally more similarly to one another than boys. Having said this, the range between the 5th and 95th percentiles was the same for both boys and girls.

Table 9.3 shows the percentile score distribution by district, and Figure 9.2 visualises the distribution alongside the mean score for each district. Districts shown on Figure 9.2 are ordered from highest to lowest mean score. The results show considerable variation in score ranges across districts.

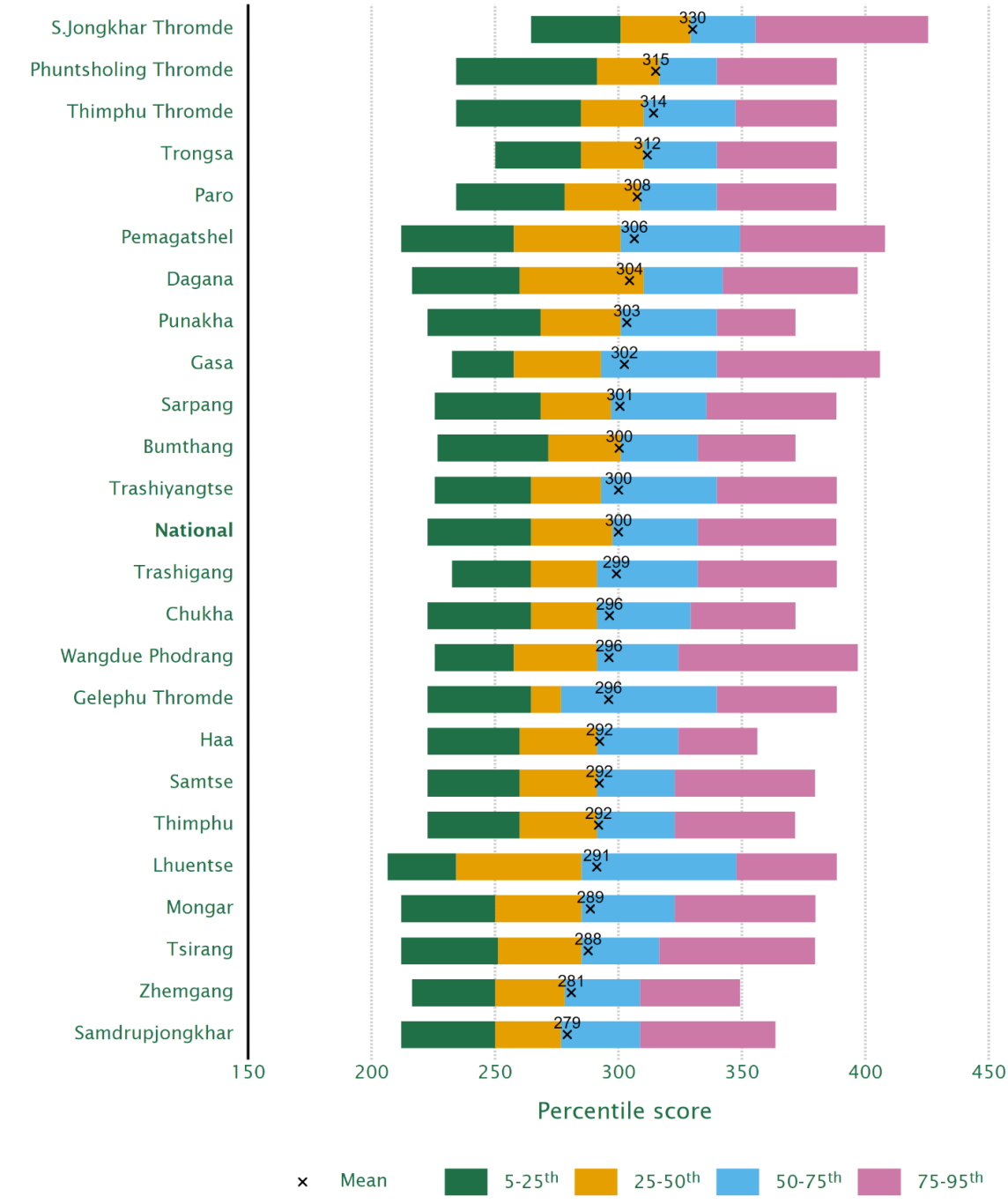
The district with the narrowest interquartile range was Phuntsholing Thromde (49), suggesting that student performance in that district was more consistent compared to the variation observed in other districts. In contrast, Lhuentse had the widest interquartile range (113), indicating greater variability in student performance compared to other districts. For the remaining districts, the interquartile range was found to be between 55 and 92 points. The score range for the 5th–95th percentiles were also highly variable, ranging from 133 (Zhemgang) to 196 (Pemagatshel).

Table 9.3: Percentile scores in grade VI Scientific Literacy, nationally and by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	227	272	301	332	372	60	145
Chukha	223	265	291	329	372	64	149
Dagana	216	260	310	342	397	82	181
Gasa	233	258	293	340	406	82	173
Gelephu Thromde	223	265	277	340	388	75	166
Haa	223	260	291	324	356	64	134
Lhuentse	206	234	285	348	388	113	182
Mongar	212	250	285	323	380	73	168
Paro	234	278	309	340	388	62	154
Pemagatshel	212	258	301	349	408	92	196
Phuntsholing Thromde	234	291	316	340	388	49	154
Punakha	223	269	301	340	372	71	149
Samdrup Jongkhar	212	250	277	309	364	59	152
S.Jongkhar Thromde	265	301	329	356	425	55	161
Samtse	223	260	291	323	380	63	157
Sarpang	226	269	297	336	388	67	163
Thimphu	223	260	291	323	371	63	149
Thimphu Thromde	234	285	310	347	388	63	154
Trashigang	233	265	291	332	388	67	156
Trashiyangtse	226	265	293	340	388	75	163
Trongsa	250	285	310	340	388	55	138
Tsirang	212	251	285	317	380	65	168
Wangdue Phodrang	226	258	291	324	397	67	171
Zhemgang	216	250	278	309	349	59	133
National	**223**	**265**	**298**	**332**	**388**	**67**	**166**

Another observation from Figure 9.2 is that while the difference in mean scores between some districts was small, the score distribution can vary noticeably between them. One such example is Paro and Pemagatshel: the mean scores between these two districts only differed by 2 points, but the scale range for the 5th–95th percentiles was much wider for Pemagatshel. This suggests that while average performance was very similar in the two districts, Pemagatshel had a more heterogeneous group of grade VI students in their Scientific Literacy performance than Paro.

Figure 9.2: Percentile scores in grade VI Scientific Literacy, nationally and by district



9.1.3. Proficiency levels

Table 9.4 shows the proficiency levels developed to describe performance in grade VI Scientific Literacy. The lowest proficiency level is Level 1, and the highest proficiency level is Level 5. The description for each proficiency level indicates the skills and knowledge students at that level are expected to be able to demonstrate.

Table 9.4: Proficiency descriptions for grade VI Scientific Literacy

Proficiency level	Description
Level 5	Students at this level demonstrate a comprehensive understanding and consistent application of scientific concepts, inquiry skills, and problem solving in new and unfamiliar contexts. They can communicate their findings clearly and logically using appropriate scientific vocabulary.
Level 4	Students at this level show good understanding of key scientific concepts and processes. They can apply inquiry skills effectively in familiar situations and communicate their findings clearly. They may demonstrate minor errors in interpretation or application.
Level 3	Students at this level demonstrate a basic understanding of scientific concepts. They can carry out guided inquiry and basic investigations with some support. The communication of their findings may lack clarity or precision.
Level 2	Students at this level display a limited understanding of scientific concepts. They require frequent support to complete tasks. They show difficulty in applying inquiry skills and interpreting findings. Their communication is minimal or inaccurate.
Level 1	Students at this level have a minimal understanding of scientific concepts and skills. They struggle significantly, even with support. They are unable to complete tasks or communicate their findings effectively.

One of the objectives of the NEA 2024 is to set a minimum proficiency level for grade VI Scientific Literacy. After a series of extensive reviews and deliberations among education stakeholders in the country, it has been decided that students are expected to reach at least Level 3 at the end of grade VI. Thus, students with scores between Level 3 and Level 5 (and above in future NEAs) are considered to have met the minimum proficiency level of grade VI.

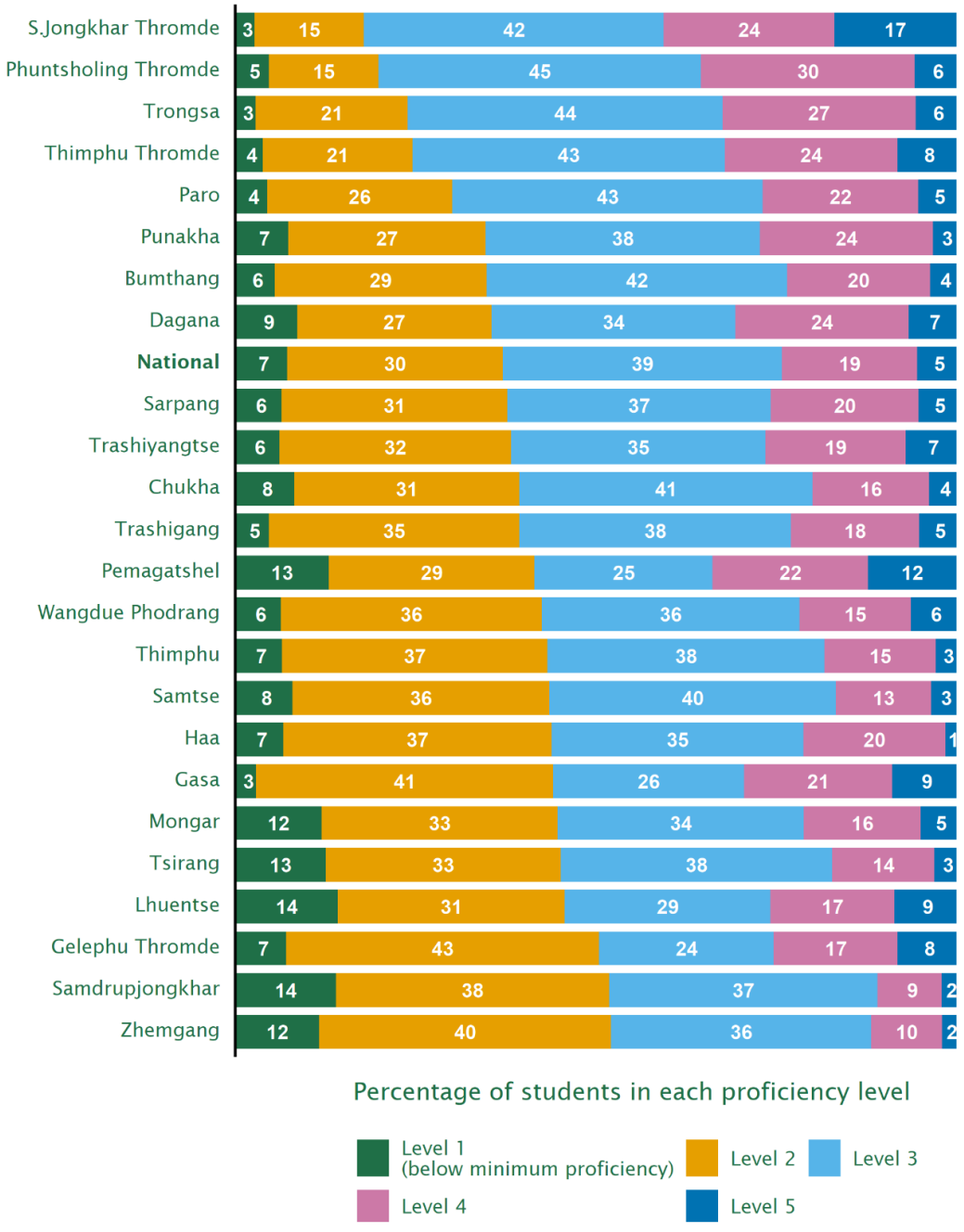
Table 9.5 shows the percentage of students at each proficiency level, and the total percentage of students who achieved the minimum level of proficiency (Level 3 and above). Figure 9.3 visualises these results, ordered from the highest to the lowest percentage of students, with the districts with the highest percentage of students meeting the minimum proficiency level at the top, and the districts with the lowest percentage of students meeting the minimum proficiency level at the bottom of the graph.

Table 9.5: Percentage of students at each proficiency level for grade VI Scientific Literacy by district

District	Percentage of students at each level					Percentage of students achieving minimum proficiency (%)
	Level 1	Level 2	Level 3	Level 4	Level 5	
Bumthang	5.5	29.4	41.7	19.8	3.6	65.1
Chukha	8.2	31.2	40.7	16.2	3.7	60.6
Dagana	8.6	26.9	33.9	24.0	6.6	64.4
Gasa	2.9	41.2	26.5	20.6	8.8	55.9
Gelephu Thromde	7.1	43.4	24.3	17.2	8.1	49.5
Haa	6.7	37.2	34.9	19.7	1.5	56.1
Lhuentse	14.3	31.4	28.6	17.1	8.6	54.3
Mongar	12.0	32.7	34.2	16.2	4.9	55.2
Paro	4.4	25.7	43.1	21.5	5.3	69.9
Pemagatshel	13.0	28.6	24.7	21.6	12.2	58.4
Phuntsholing Thromde	4.7	15.2	44.8	29.6	5.7	80.1
Punakha	7.4	27.4	38.1	24.0	3.2	65.2
Samdrup Jongkhar	14.0	37.9	37.3	8.9	2.0	48.1
S.Jongkhar Thromde	2.7	15.1	41.6	23.6	16.9	82.1
Samtse	8.0	35.6	39.8	13.2	3.5	56.4
Sarpang	6.5	31.3	36.6	20.5	5.2	62.3
Thimphu	6.5	36.8	38.4	15.4	2.8	56.7
Thimphu Thromde	3.9	20.7	43.3	24.0	8.1	75.4
Trashigang	4.7	34.7	37.7	17.8	5.1	60.6
Trashiyangtse	6.2	32.1	35.3	19.4	7.0	61.7
Trongsa	2.9	21.1	43.6	26.8	5.6	76.0
Tsirang	12.6	32.6	37.7	14.2	3.0	54.8
Wangdue Phodrang	6.4	36.2	35.8	15.5	6.3	57.5
Zhemgang	11.7	40.4	36.1	9.8	1.9	47.9
National	**7.2**	**29.9**	**38.7**	**18.8**	**5.4**	**62.9**

Nationally, 63% of the students met the minimum proficiency level for grade VI Scientific Literacy in the NEA 2024, with 39%, 19%, and 5% of students at Level 3, Level 4, and Level 5, respectively. In other words, 37% of the students did not meet the minimum level (i.e., Level 1 and Level 2).

Figure 9.3: Percentage of students at each proficiency level for grade VI Scientific Literacy by district



Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

Across districts, the percentage of students who met the minimum proficiency level in Scientific Literacy ranged from 48% (Zhemgang and Samdrup Jongkhar) to 82% (Samdrup Jongkhar Thromde). The range of these percentages implies that the percentages of students meeting the minimum proficiency level in Mathematical Literacy vary greatly across

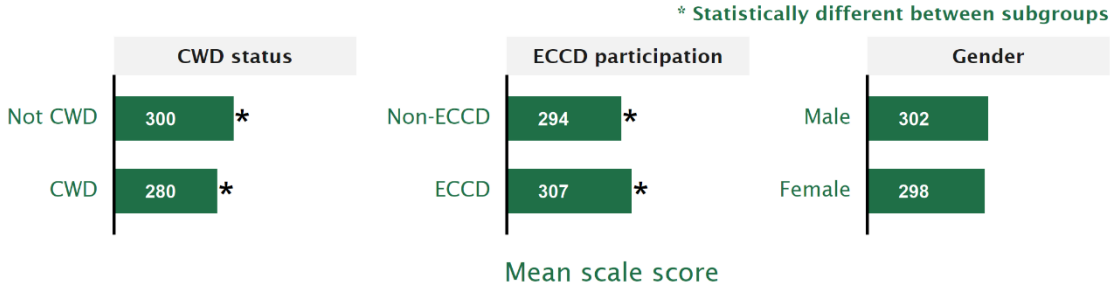
districts, suggesting the need to tailor policies according to the needs of students in each district. In Zhemgang, Samdrup Jongkhar, and Gelephu Thromde, less than half of the students met the minimum proficiency levels. In contrast, two districts had at least 80% of students meeting the minimum proficiency level. These were Phuntsholing Thromde (80%) and Samdrup Jongkhar Thromde (82%).

9.2. Performance gaps in context

9.2.1. Performance by student characteristics

Figure 9.4 shows the mean scores for Scientific Literacy by Early Childhood Care and Development (ECCD) participation, gender, and children with disabilities (CWD) status. Firstly, the mean score for students who participated in the ECCD programme was higher than those who did not by 13 points. Secondly, the mean score for students without disabilities was noticeably higher than for students with disabilities by 20 points. In both cases, the performance gap between the subgroups was statistically significantly different. Lastly, the mean score for boys was marginally higher than girls, however, the gender gap was not found to be statistically significant.

Figure 9.4: Mean scores for grade VI Scientific Literacy by student characteristics



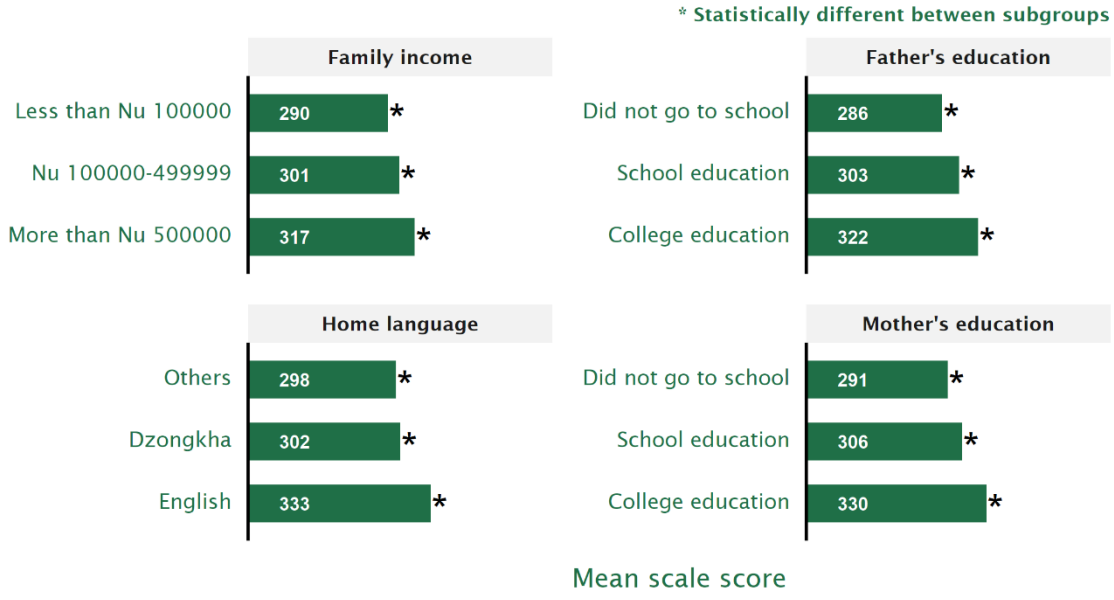
9.2.2. Performance by family characteristics

Figure 9.5 shows the mean scores for Scientific Literacy by students' family income, parental education, and main language spoken by the students at home. Firstly, students from a higher income group tended to outperform students from lower-income families. The performance gap was 27 points between students from the highest (more than Nu 500000) and lowest (less than Nu 100000) family income groups. The magnitude of difference was equivalent to slightly more than half a standard deviation (SD).

Secondly, students whose parents did not go to school tended to underperform relative to students whose parents had received school or college education. The performance

gap between students whose parents did not go to school and those with college-educated parents was 36 and 39 points based on the father's and mother's education levels, respectively.

Figure 9.5: Mean scores for grade VI Scientific Literacy by family characteristics



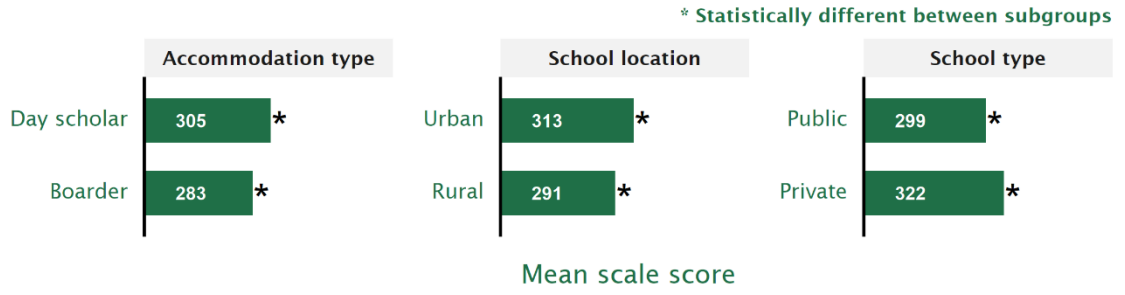
Lastly, students who spoke English as their home language scored noticeably higher than students who spoke Dzongkha or other languages. The performance gap between students who spoke English and other languages at home was 35 points.

In all four cases, the performance gaps between the subgroups were found to be statistically significant and were of a magnitude more than half a SD. These gaps suggest that student performance in Scientific Literacy is closely related to their family background characteristics.

9.2.3. Performance by school characteristics

Figure 9.6 shows the mean scores for Scientific Literacy by students' accommodation type, school location, and school type. Firstly, day scholars outperformed boarders by an average of 22 points. Secondly, students attending urban schools scored, on average, 22 points higher than those in rural schools. Lastly, students in private schools outperformed those in public schools by an average of 23 points. In all three cases, the differences in mean scores between the subgroups were statistically significant, though the magnitude of each difference was less than half a SD, indicating a moderate disparity in performance across these subgroups.

Figure 9.6: Mean scores for grade VI Scientific Literacy by school characteristics



9.3. Summary and conclusion

This chapter presents and discusses the findings from the grade VI Scientific Literacy test. Key findings and recommendations are summarised below.

National: Given that this was the first cycle where Scientific Literacy was tested on grade VI students in the NEA, the national mean score was at 300. About 63% of the students met the minimum proficiency level set by the various educational stakeholders. In other words, about 36% – nearly 2 in 5 students – did not meet this standard. This finding highlights the need for programmes to better support students, and especially those at risk of falling behind, to build their foundational knowledge in Scientific Literacy. These efforts will also be essential to improve the national performance in grade VI Scientific Literacy.

District: Two districts – Samdrup Jongkhar Thromde and Thimphu Thromde – performed statistically significantly better than the national cohort of students. In both of these districts, the percentage of students who did not meet the minimum proficiency level was 25%or less. In contrast, the lowest performing district in Scientific Literacy was Samdrup Jongkhar. Performances from Zhemgang and Lhuentse were also found to be statistically different to the national mean. In all three districts, at least 46% of students did not meet the minimum proficiency level. This finding underscores the need to investigate the underlying causes of low performance in these districts. Additionally, it highlights the importance of allocating additional support, and implementing targeted policies that prioritise students from these districts.

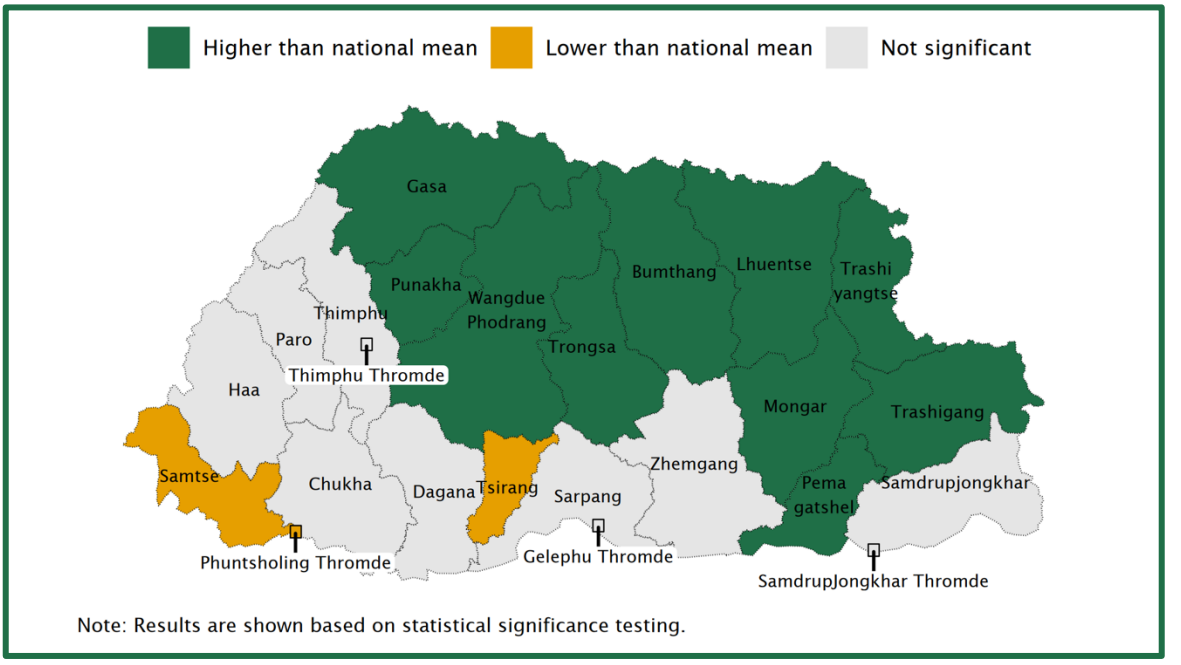
Gender: While boys marginally outperformed girls in Scientific Literacy, we did not find evidence to suggest that this gender gap is statistically significant, both nationally and for most districts. In Samtse and Chukha, the performance of boys was statistically significantly higher than girls, however, these gender gaps were smaller in magnitude compared to the performance differences observed across other student characteristics.

CWD: Students with disabilities statistically significantly underperformed relative to students without disabilities by an average of 20 points. This magnitude of difference was comparable to the difference between students from public and private schools, and between students from urban and rural schools. This finding highlights the need for more inclusive support for CWD students.

Other characteristics: Statistically significant performance gaps were found in all other student, family, and school characteristics investigated (except gender, as discussed above). In particular, some of the bigger performance gaps were found between students with parents who did not go to school and those with college-educated parents (based both on the mother's and the father's education), and between students who spoke English at home and those who spoke other languages. These findings suggest that family background (e.g., socio-economic status of the family) is closely related to student performance in Scientific Literacy. One policy implication is that students from less advantaged families should be provided with additional support to help close this performance gap. This could include better access to learning resources, language support, and targeted academic interventions to ensure that all students have the same opportunities to perform well academically, regardless of their home environment.

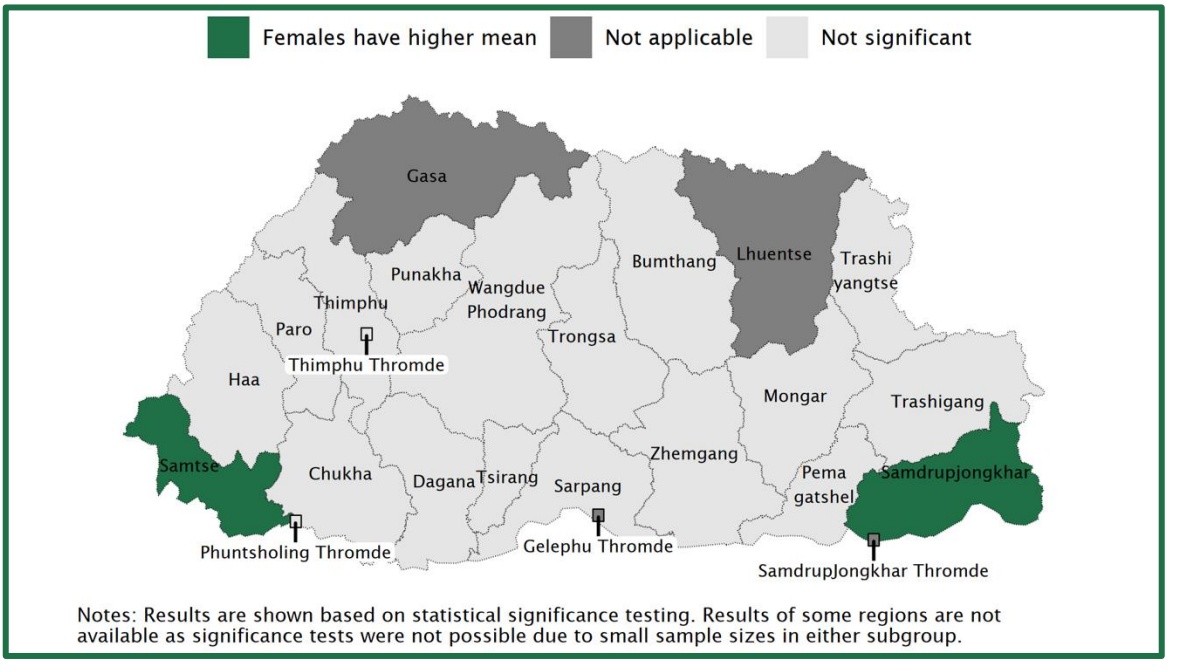
Chapter 10. Achievement of grade VI students in Dzongkha Reading Literacy

Summary 10.1: Student achievement in grade VI Dzongkha Reading Literacy by district



Note: Results are shown based on statistical significance testing.

Summary 10.2: Student achievement in grade VI Dzongkha Reading Literacy by district and gender



Notes: Results are shown based on statistical significance testing. Results of some regions are not available as significance tests were not possible due to small sample sizes in either subgroup.

10.1. Performance

This chapter presents the achievement of grade VI students in the Dzongkha Reading Literacy test of the NEA 2024. The discussion focusses on the analysis of student mean scores, percentile distributions, proficiency levels, group differences, and contextual factors affecting student performance.

10.1.1. Mean scores

Table 10.1 shows the mean scores of all of the districts, as well as the national mean. In addition to the mean scores, the standard error and 95% confidence intervals are provided for statistical comparison. These statistics are not provided for Gelephu Thromde; since only students from a single school participated in this district, it was not possible to assess how much results might have differed in other schools. T-tests were conducted to check if the mean score of each district was statistically different from the national mean. The results of these tests, including the p-values, are provided in Table 10.1. As explained in the introduction section, all significance testing in this report uses a critical value of $p<0.01$. For this reason, there are some instances in Table 10.1 where the 95% confidence interval does not include 300 but the difference is not highlighted as statistically significant.

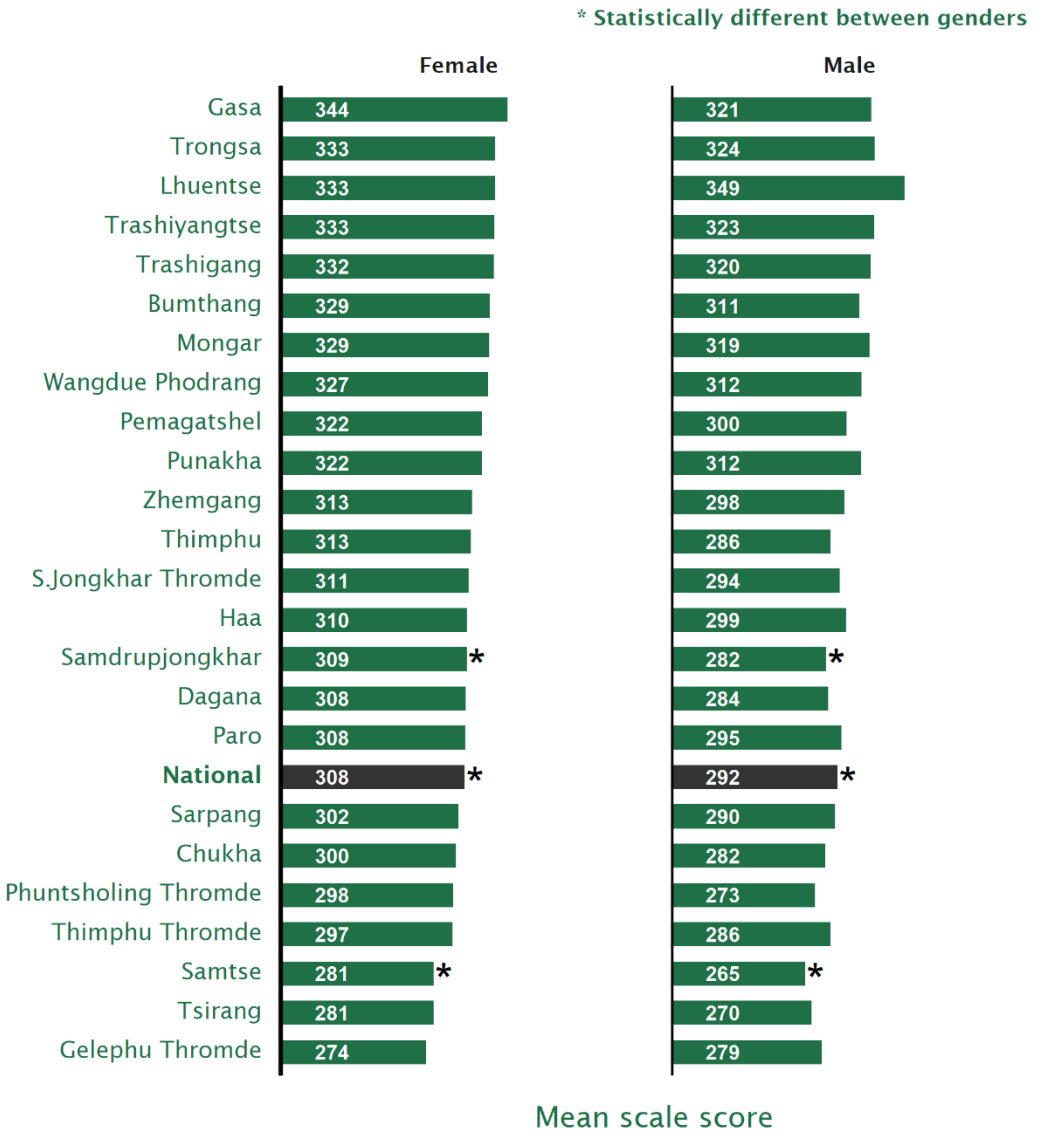
Three districts – Phuntsholing Thromde, Samtse, and Tsirang – had mean scores that were statistically significantly lower than the national mean. Between these three districts, the lowest mean score was observed in Samtse. The students from Samtse performed lower than the national cohort by an average of 27 points (273 vs 300).

In contrast, ten districts – Bumthang, Gasa, Lhuentse, Mongar, Pemagatshel, Punakha, Trashigang, Trashiyangtse, Trongsa, and Wangdue Phodrang – had mean scores that were statistically significantly higher than the national mean. The students from Lhuentse, in particular, scored 40 points higher than the national mean (340 vs 300).

Table 10.1: Mean scores for grade VI Dzongkha Reading Literacy by district

District	Mean	Standard error	95% confidence interval	p-value	Statistically different than the national mean?
Bumthang	320	2.78	314 - 325	0.000	Higher
Chukha	291	4.31	283 - 300	0.056	Not significant
Dagana	296	6.4	284 - 309	0.563	Not significant
Gasa	333	7.94	317 - 348	0.000	Higher
Gelephu Thromde	277	-	-	-	-
Haa	305	5.86	293 - 316	0.447	Not significant
Lhuentse	340	1.04	338 - 342	0.000	Higher
Mongar	324	4.38	316 - 333	0.000	Higher
Paro	302	3.29	295 - 308	0.673	Not significant
Pemagatshel	310	3.18	304 - 316	0.006	Higher
Phuntsholing Thromde	285	1.16	283 - 288	0.000	Lower
Punakha	317	5.24	307 - 327	0.003	Higher
Samdrup Jongkhar	297	5.91	285 - 308	0.572	Not significant
S.Jongkhar Thromde	302	7.47	288 - 317	0.759	Not significant
Samtse	273	4.73	263 - 282	0.000	Lower
Sarpang	296	6.06	284 - 308	0.498	Not significant
Thimphu	300	6.04	288 - 312	0.967	Not significant
Thimphu Thromde	291	3.44	285 - 298	0.029	Not significant
Trashigang	327	4.18	319 - 335	0.000	Higher
Trashiyangtse	328	4.19	320 - 336	0.000	Higher
Trongsa	329	6.6	316 - 342	0.000	Higher
Tsirang	276	3	270 - 281	0.000	Lower
Wangdue Phodrang	320	4.78	311 - 329	0.000	Higher
Zhemgang	306	7.96	290 - 322	0.465	Not significant
National	**300**	**1.90**	**296 - 304**	-	-

Figure 10.1: Mean scores for grade VI Dzongkha Reading Literacy by district and gender



Notes: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution. Significance tests were not carried out for Gasa, Gelephu Thromde, Lhuentse, and S.Jongkhar Thromde because only one or two schools participated.

Figure 10.1 compares the mean Dzongkha Reading Literacy scores of boys and girls within each district. At the national level, there is a statistically significant gender difference, with girls outperforming boys by 16 points (308 vs 292). Within individual districts, no statistically significant gender differences were observed, except in Samdrup Jongkhar and Samtse. In these two districts, girls scored significantly higher than boys by 27 points (309 vs 282) and 16 points (281 vs 265), respectively.

10.1.2. Percentile distributions

The percentile distribution illustrates how students' performance is spread across the range of possible scores. It helps indicate a student's standing relative to the rest of the group. In the context of the NEA, a percentile score represents the scale score below which a certain percentage of students fall. For example, the 5th percentile score in Dzongkha Reading Literacy indicates that 5% of students scored below that value.

Percentile distributions also provide insight into the degree of variation in student performance. The range between the 25th and 75th percentiles – known as the interquartile range – captures the middle 50% of scores. Meanwhile, the range between the 5th and 95th percentiles includes 90% of all scores. A wider range suggests greater variability in performance among students, while a narrower range indicates more similarity.

Table 10.2: Percentile scores in grade VI Dzongkha Reading Literacy, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	227	274	305	337	385	62	158
Male	212	255	294	328	376	74	164
National	**223**	**264**	**303**	**336**	**379**	**72**	**156**

Table 10.2 presents the percentile scores and the ranges for the NEA 2024 Dzongkha Reading Literacy test, both nationally and by gender. At the national level, the interquartile range is 72 points (from 264 to 336), meaning that the middle 50% of students scored within this range. The 5th–95th percentile range spans 156 points (from 223 to 379), covering the scores of 90% of students.

Among female students, the interquartile range is 62 points (from 274 to 337), the narrowest of the three groups. Their 5th–95th percentile range is 158 points (from 227 to 385), indicating a broadly similar spread to the national range.

For male students, the interquartile range is 74 points (from 255 to 328), which was wider than the range observed for female students. Their 5th–95th percentile range is 164 points (from 212 to 376), which is also the broadest of the three groups, suggesting more variability in performance, especially at the lower and upper ends of the score distribution.

The results show that male students exhibited a slightly wider variation in Dzongkha Reading Literacy scores compared to female students, both in the middle and full performance range. Female students, in contrast, performed more consistently in the middle 50%, with scores marginally more tightly clustered around the median. These findings suggest that while female performance is more concentrated, male performance is relatively more dispersed, particularly at the extreme ends of the score distribution.

Table 10.3 shows the percentile score distribution by district, and Figure 10.2 visualises the distribution alongside the mean score for each district. Districts shown on Figure 10.2 are ordered from highest to lowest mean score. The results show considerable variation in score ranges across districts.

The district with the narrowest interquartile range was Bumthang (48), suggesting student performance in that district was more consistent compared to the variation observed in other districts. In contrast, Chukha had the widest interquartile range (74), followed closely by Sarpang (72), indicating greater variability in student performance in these districts compared to other districts. For the remaining districts, the interquartile range was found to be between 52 and 67 points. The score range for the 5th–95th percentiles varied noticeably across dzongkhags, ranging from 123 (Samdrup Jongkhar Thromde) to 194 (Gasa). Gasa, in particular, had a noticeably wide range of scores in the 75th–95th percentiles, suggesting there was a high level of variation at the top-end of the performance range, with a few individuals scoring much higher than the rest.

Table 10.3: Percentile scores in grade VI Dzongkha Reading Literacy, nationally and by district

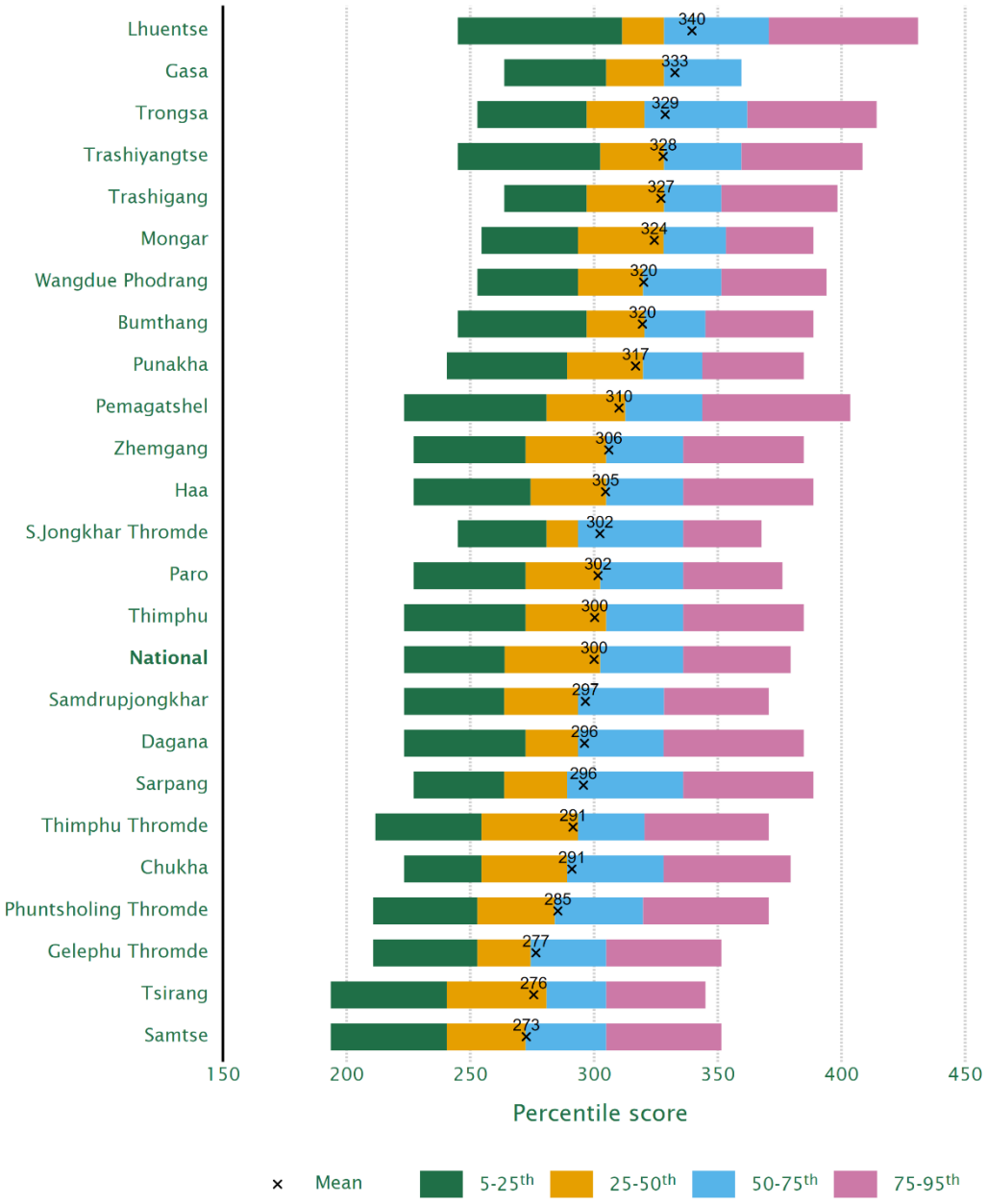
District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	245	297	320	345	389	48	144
Chukha	223	255	289	328	379	74	156
Dagana	223	272	294	328	385	56	162
Gasa	264	305	328	360	458	55	194
Gelephu Thromde	211	253	274	305	352	52	141
Haa	227	274	305	336	389	62	162
Lhuentse	245	311	328	371	431	59	186
Mongar	255	294	328	353	389	60	134
Paro	227	272	303	336	376	64	149
Pemagatshel	223	281	313	344	404	63	180
Phuntsholing Thromde	211	253	284	320	371	67	160
Punakha	241	289	320	344	385	55	144
Samdrup Jongkhar	223	264	294	328	371	65	147
S.Jongkhar Thromde	245	281	294	336	368	55	123
Samtse	194	241	272	305	352	64	158
Sarpang	227	264	289	336	389	72	162
Thimphu	223	272	305	336	385	64	162
Thimphu Thromde	212	255	294	320	371	66	159
Trashigang	264	297	328	352	398	55	135
Trashiyangtse	245	303	328	360	408	57	164
Trongsa	253	297	320	362	414	65	161
Tsirang	194	241	281	305	345	64	151
Wangdue Phodrang	253	294	320	352	394	58	141
Zhemgang	227	272	305	336	385	64	158

National	223	264	303	336	379	72	156

Another observation from Figure 10.2 is that while the difference in mean scores between some districts was small, the score distribution can vary noticeably between them. One such example is Haa and S.Jongkhar Thromde: the mean scores for these two districts differed by just 3 points, but the scale range for the 5th–95th percentiles was much wider for Haa.

This suggests that while average performance was similar in the two districts, Haa had a more heterogeneous group of grade VI students in their Dzongkha Reading Literacy performance than Samdrup Jongkhar Thromde.

Figure 10.2: Percentile scores in grade VI Dzongkha Reading Literacy, nationally and by district



10.1.3. Proficiency levels

Table 10.4 shows the proficiency levels developed to describe performance in grade VI Dzongkha Reading Literacy. The lowest proficiency level is Level 1, and the highest proficiency level is Level 4. The description for each proficiency level indicates the skills and knowledge students at that level are expected to be able to demonstrate.

Table 10.4: Proficiency descriptions for grade VI Dzongkha Reading Literacy

Proficiency level **མཐར་ཕྱིན་གྱི་གནས་རིམ།**	**Description** **འགྲེལ་བཤད།**
བཞི་པ།	དབྱེ་ཁག་བཞི་པ་ནང་གི་ སློབ་ཕྲུག་ཚུ་ལུ་ འཕེལ་སྐྱེད་ཅན་གྱི་ལྷག་རིག་ལྡནམ་ལས། ཡིག་ཐྲིསམ་རྣམ་པ་ མ་འདྲཝ་ཚུ་ ལྷག་སྟེ་ རང་སྟོབས་ཀྱིས་ བརྡ་དོན་ འཚོལ་ནི། རྟེས་མཐོང་ བསྐྱེད་ནི། སྐྱོན་དང་ཡོན་ཏན་གྱི་ བསམ་འཆར་ཚུ་བཀོད་ནི་ཚུ་ལུ་ གོམས་སྦྱང་ ཚུད་ཡོད་པའི་རྟགས་ མངོན་གསལ་ འབྱུང་ཚུགསཔ་མ་ཚད། རང་གི་ གནས་སྟངས་ དང་གཅིག་ཁར་ འབྲེལ་བ་ བཟོ་ཚུགས་པའི་ཁར་ སྙན་གཏམ། སྙོར་གཏམ། དཔེ་གཏམ། ཞེ་ས་དང་ཕལ་སྐད་ཀྱི་ ཐ་སྙད་ལག་ལེན་ འཐབ་ ཡོད་མི་ཚུ་ གོ་བ་ལེན་ཏེ་ བརྡ་སྦྱོད་ཚུགས། དོན་ཚན་གྱི་ཐོག་ལུ་ བསྒྱུར་ཞིབ་འབད་དེ་ བཅུད་དོན་བཏོན་ནི། གནས་སྐབས་ཀྱི་ཐོག་ལས་ ཤེས་ཡོན་དང་བརྡ་དོན་ཚུ་ ལེན་ཚུགས། གཞན་ཡང་ ཐ་སྙད་ གསརཔ་ འགོ་ཐོག་མཐོང་མི་ཚུ་ གོ་བ་ལེན་ཏེ་ འགྲེལ་བཤད་རྒྱབ་ནི། སྐབས་དོན་དང་འབྲེལ་ ལག་ལེན་འཐབ་ཚུགས། ཡིག་ཐྲིསམ་གི་ ནང་དོན་ཚུ་ རྒྱས་བཤད་རྒྱབ་ནི། བཅུད་བསྡུ་ནི། དོན་ཕྲན་ཚུ་ འཕྲི་བསྣོན་གྱི་ རིགས་ཚུ་ཡང་ འབད་ཚུགས། བསྡུ་བ་ཅིན་ ཡིག་ཐྲིསམ་ཚུ་ དབྱེ་ཞིབ་འབད་ཚུགས་པའི་ འཛིན་ཐངས་དང་། གོ་རྟོགས་ཀྱི་ རིག་རྩལ་དྲག་ཤོས་ཚུ་ གསལ་སྟོན་ འབད་ཚུགསཔ་ཨིན།
གསུམ་པ།	དབྱེ་ཁག་གསུམ་པ་ནང་གི་ སློབ་ཕྲུག་ཚུ་ལུ་ ལྷག་ནིའི་རིག་རྩལ་དང་ལྡནམ་ལས། ཡིག་ཐྲིསམ་ཚུ་ལྷག་སྟེ་ རྫོང་ཁའི་ ཡིག་རིགས་མ་འདྲཝ་ཚུ་ ཚུལ་བཞིན་དུ་ ལྷག་སྟེ་ བརྡ་དོན་ འཚོལ་ནི་དང་ བརྟེས་མཐོང་བསྐྱེད་ནི། སྐྱོན་དང་དང་ཡོན་ཏན་ཏན་གྱི་ བསམ་འཆར་ཚུ་བཀོད་ཚུགས། དཔེ་གཏམ། ཞེ་ས་ དང་ ཕལ་སྐད་ཀྱི་རྣམ་གཞག་ཚུ་ ཏ་གོ་སྟེ་ གནས་སྟངས་ནང་ ལག་ལེན་ འཐབ་ཚུགས། དོན་མཚམས་ བསྒྱུར་ཞིབ་འབད་དེ་ བཅུད་དོན་བཏོན་ནི། ཐབས་ཤེས་ཀྱི་ ཐོག་ལས་ ཤེས་ཡོན་རིག་རྩལ་ ལེན་ཚུགས། གནས་ཚད་དང་ བསྟུན་ བསམ་ཞིབ་དང་ དབྱེ་ཞིབ་འབད་དེ་ ཡིག་ཐྲིས་མའི་ ནང་དོན་ཚུ་ བཅུད་བསྡུ་ནི། དོན་ཕྲན་ཚུ་ ཁག་དབྱེ་ཚུགས་པའི་ཁར་ མིང་ཚིག་གསརཔ་ཚུ་ཡང་ ལག་ལེན་འཐབ་ཚུགསཔ་ཨིན། བསྡུ་བ་ཅིན་ རྫོང་ཁའི་ཡིག་རིགས་ཚུ་ ལྷག་སྟེ་ ངོས་འཛིན་འབད་ནི། ཏ་གོ་ནི་དང་ བསམ་འཆར་བཤད་ནི་ཚུ་ འོས་འབབ་ཅན་སྦ་ འབད་ཚུགས།
གཉིས་པ།	དབྱེ་ཁག་གཉིས་པ་ནང་གི་ སློབ་ཕྲུག་ཚུ་ལུ་ ལྷག་རིག་གི་ གཞི་རྟེན་གྱི་རིག་རྩལ་དང་ ལྡནམ་ལས་ ཡིག་ཐྲིསམ་གི་ རིགས་ཚུ་ལྷག་སྟེ་ གོ་དོན་ཚུ་ལེན་ནི། བརྡ་དོན་འཚོལ་ཏེ་ བཤད་པ་ རྒྱབ་ཚུགས་པའི་ཁར་ མིང་ཚིག་ཚུ་ངོས་འཛིན་འབད་དེ་ གདམ་ཁ་རྒྱབ་ནི། མིང་ཚིག་བརྡ་སྦྱར་འབད་ནི། བཅུད་དོན་བཏོན་ནི། བརྡ་དོན་ལུ་ བསམ་བཤད་དང་ འབྲི་རྩོམ་གྱི་ ཁྱད་རྣམ་ཚུ་བཤད་ཚུགས། བརྗོད་དོན་ཚུ་ དབྱེ་བ་དཔྱད་དེ་ བཟང་ངན་གྱི་དབྱེ་བ་ཕྱེ་ནི་དང་། མཛོ་དོན་ཚུ་ བརྡ་སྦྱོད་ འབད་ཚུགས། གནས་ཚད་དང་མཐུན་པའི་ དོན་ཚན་ཚུ་ལུ་ བཤད་པ་ཐུང་ཀུ་རེ་རྒྱབ་སྟེ་ ལམ་སྟོན་ལུ་ ཡིད་ཆེས་བསྐྱེད་ཚུགས་ནི་དང་། མཐོང་ཐོས་ཡོད་པའི་བརྡ་དོན་ཚུ་ལུ་ བཤད་པ་རྒྱབ་ཚུགས། བསྡུ་བ་ཅིན་ རྫོང་ཁའི་ མིང་ཚིག་ཚུ་ལྷག་ནི་དང་ ཏ་གོ་ཚུགས་པའི་ གཞི་རྟེན་གྱི་ རིག་རྩལ་ཚུ་ གསལ་སྟོན་ འབད་ཚུགསཔ་ཨིན།
དང་པ།	དབྱེ་ཁག་དང་པ་འདི་ནང་གི་ སློབ་ཕྲུག་ཚུ་ ལྷག་རིག་ཚད་འཛིན་ཅན་གྱི་གྲངས་སུ་འབདཝ་ལས་ ཡིག་ཐྲིསམ་འཇམ་ཏོག་ཏོ་ཚུ་ལྷག་སྟེ་ འདི་ནང་ལས་ གོ་དོན་ཚུ་ལེན་ནི། བརྡ་དོན་ འཚོལ་ནི། ལེགས་ཆ་ཚུ་ ལེན་ཚུགས་པའི་ཁར་ གནས་ཚད་དང་མཐུན་པའི་ འབྲི་རྩོམ་ཚུ་གི་ཁྱད་རྣམ་དང་ གནས་ཚུལ་ཚུ་ ཏ་གོ་ཚུགསཔ་མ་ཚད་ དོན་ཚན་གྱི་ཐོག་ལུ་ གོ་བ་ ལེན་ཏེ་བཤད་པ་ཐུང་ཀུ་རེ་རྒྱབ་སྟེ་ ལམ་སྟོན་ལུ་ཡིད་ཆེས་བསྐྱེད་དེ་ཤེས་ཡོན་ལེན་ཚུགས། མིང་ཚིག་ཚུ་ལག་ལེན་འཐབ་སྟེ་རྫོད་ཚིག་ཚུ་བཟོ་ཚུགསཔ་ཨིན། བསྡུ་བ་ཅིན་ རྫོང་ཁའི་ མིང་ཚིག་ཚུ་ལྷག་སྟེ་གོ་བ་ཚད་ཅིག་ལས་བརྒལ་ཏེ་ལེན་མི་ཚུགས། དེ་འབདཝ་ལས་པ་ལས་ རིག་རྩལ་ཚུ་ཚད་འཛིན་ཅན་ཅིག་འབད་ཚུགསཔ་ཨིན།

One of the objectives of the NEA 2024 is to set a minimum proficiency level for grade VI Dzongkha Reading Literacy. After a series of extensive reviews and deliberations among education stakeholders in the country, it has been decided that students are expected to reach at least Level 2 by the end of grade VI. Thus, students with scores between Level 2 and Level 4 are considered to have met the minimum proficiency level of grade VI.

Table 10.5 shows the percentage of students at each proficiency level, and the total

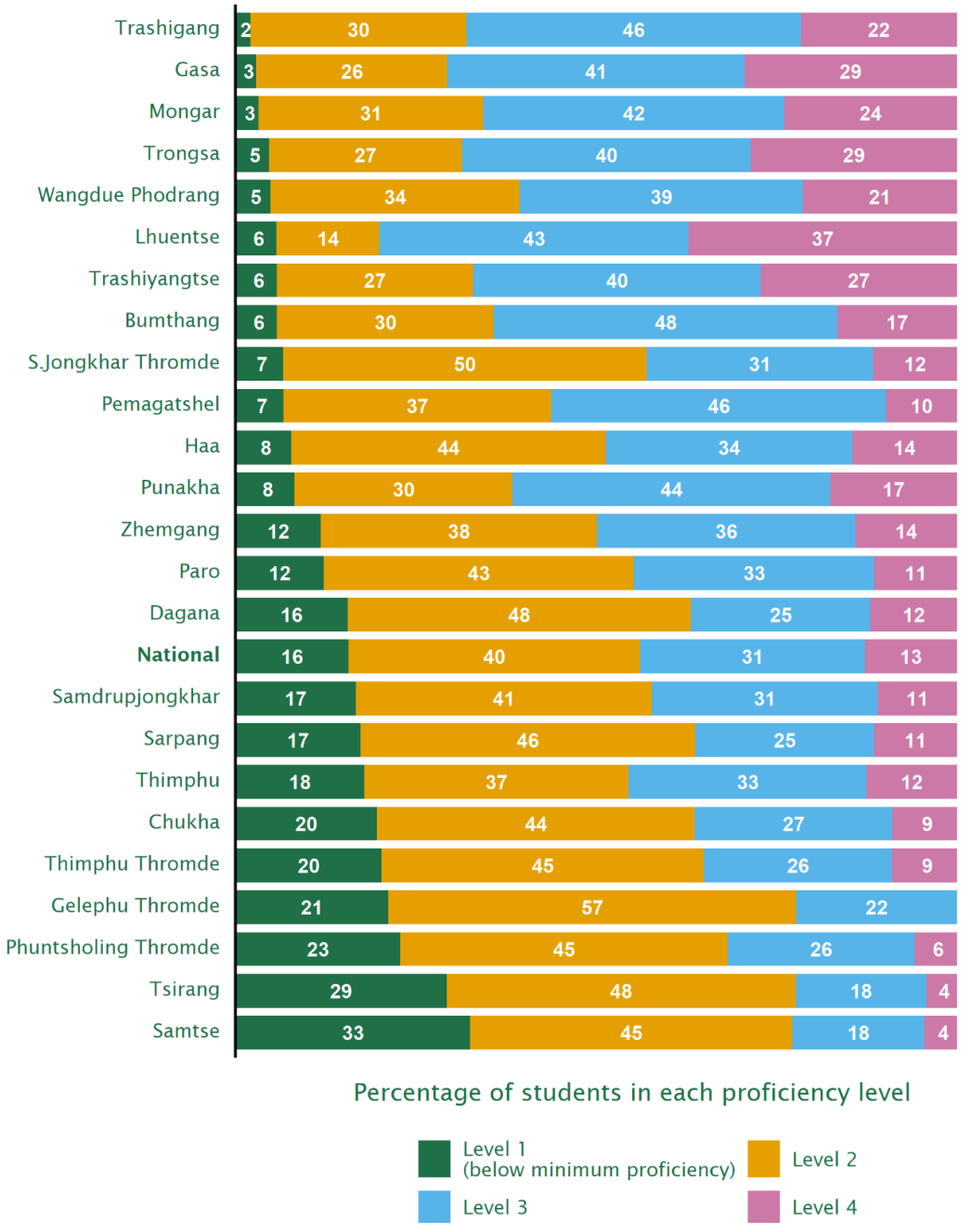
percentage of students who achieved the minimum level of proficiency (Level 2 and above). Figure 10.3 visualises these results, ordered from the highest to the lowest percentage of students, with the districts with the highest percentage of students meeting the minimum proficiency level at the top, and the districts with the lowest percentage of students meeting the minimum proficiency level at the bottom of the graph.

Table 10.5: Percentage of students at each proficiency level for grade VI Dzongkha Reading Literacy by district

District	Percentage of students at each level				Percentage of students achieving minimum proficiency (%)
	Level 1	Level 2	Level 3	Level 4	
Bumthang	5.8	30.1	47.6	16.5	94.2
Chukha	19.7	44.1	27.4	8.9	80.3
Dagana	15.6	47.6	24.9	11.9	84.4
Gasa	2.9	26.5	41.2	29.4	97.1
Gelephu Thromde	21.2	56.6	22.2	0	78.8
Haa	7.7	43.6	34.1	14.5	92.3
Lhuentse	5.7	14.3	42.9	37.1	94.3
Mongar	3.3	31.1	41.8	23.9	96.7
Paro	12.3	43	33.4	11.4	87.7
Pemagatshel	6.7	37.1	46.5	9.7	93.3
Phuntsholing Thromde	22.9	45.4	25.9	5.8	77.1
Punakha	8.2	30.2	44.1	17.5	91.8
Samdrup Jongkhar	16.7	41	31.4	10.9	83.3
S.Jongkhar Thromde	6.7	50.4	31.4	11.6	93.3
Samtse	32.6	44.6	18.3	4.4	67.4
Sarpang	17.4	46.4	24.8	11.4	82.6
Thimphu	17.9	36.6	33	12.5	82.1
Thimphu Thromde	20.3	44.6	26.1	8.9	79.7
Trashigang	2.1	29.9	46.4	21.6	97.9
Trashiyangtse	5.7	27.2	39.9	27.1	94.3
Trongsa	4.7	26.8	40.1	28.5	95.3
Tsirang	29.3	48.4	18.1	4.2	70.7
Wangdue Phodrang	4.9	34.5	39.3	21.3	95.1
Zhemgang	11.9	38.3	35.8	14	88.1
National	**15.7**	**40.4**	**31.2**	**12.7**	**84.3**

Nationally, 84% of the students met the minimum proficiency level for grade VI Dzongkha Reading Literacy in the NEA 2024, with 40%, 31%, and 13% of students at Level 2, Level 3, and Level 4, respectively. In other words, 16% of the students did not meet the minimum level (i.e., Level 1).

Figure 10.3: Percentage of students at each proficiency level for grade VI Dzongkha Reading Literacy by district



Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

Across districts, the percentage of students who met the minimum proficiency level in Dzongkha Reading Literacy ranged from 67% (Samtse) to 98% (Trashigang). This 31-percentage-point difference suggests notable disparities in performance across districts, and indicates that some regions may face greater challenges in ensuring students reach the minimum proficiency level. In some districts, a significant proportion of students did not meet the minimum proficiency level in Dzongkha Reading Literacy. In Samtse, this figure

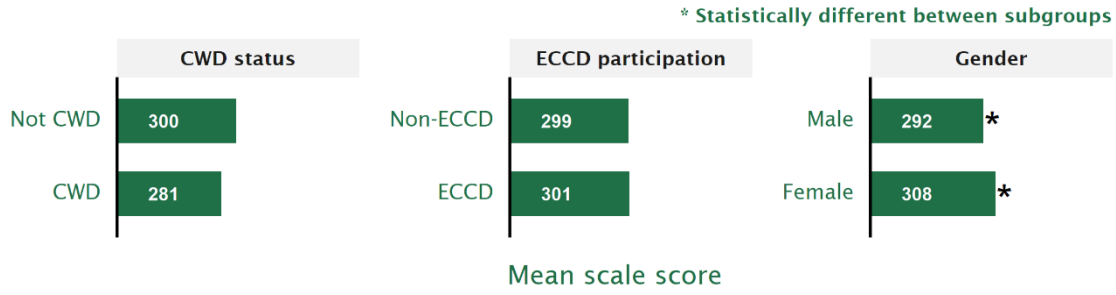
was as high as 33%, meaning roughly one in three students performed below the expected level. Similarly, around 3 in 10 students in Tsirang (29%) and nearly 1 in 4 students in Phuntsholing Thromde (23%) did not meet the minimum standard. In contrast, in three districts – Trashigang (98%), Gasa (97%), and Mongar (97%) – almost all students achieved the minimum proficiency level.

10.2. Performance gaps in context

10.2.1. Performance by student characteristics

Figure 10.4 shows the mean scores for Dzongkha Reading Literacy by Early Childhood Care and Development (ECCD) participation, gender, and children with disabilities (CWD) status. The mean score for girls was noticeably higher than that of boys by 16 points, and this performance gap was statistically significant. Students who participated in the ECCD programme also had slightly higher mean scores than those who did not. Similarly, students without disabilities scored higher, on average, than those with disabilities. However, in both of the latter cases, the differences were not statistically significant.

Figure 10.4: Mean scores for grade VI Dzongkha Reading Literacy by student characteristics



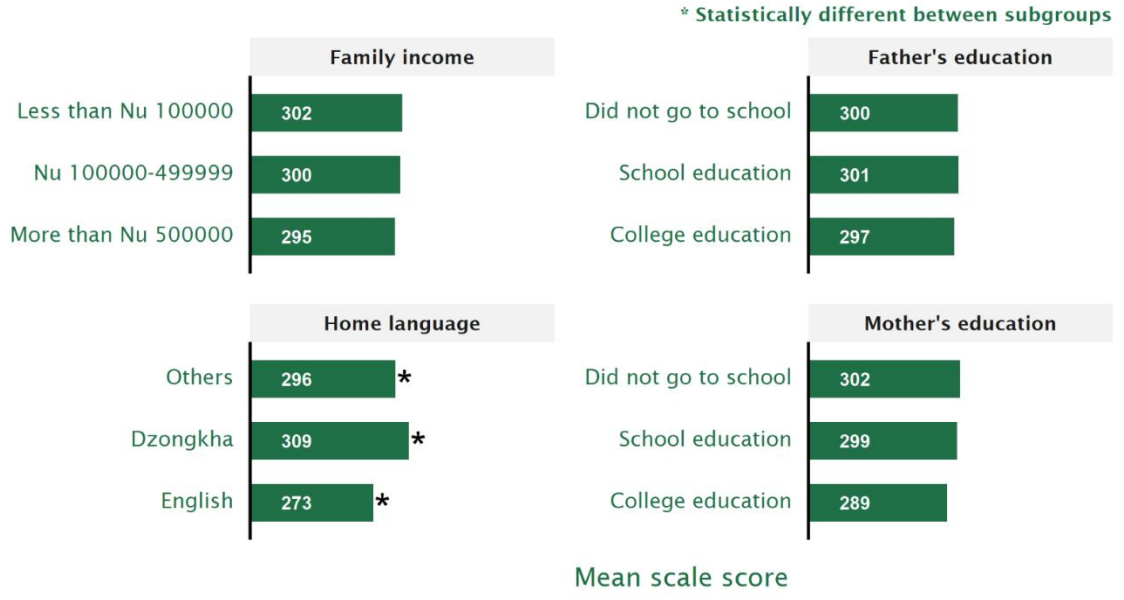
10.2.2. Performance by family characteristics

Figure 10.5 shows the mean scores for Dzongkha Reading Literacy by students' family income, parental education, and main language spoken by the students at home. Interestingly, students from lower-income families tended to outperform those from higher-income households. The mean score difference between students from the lowest income group (less than Nu 100000) and those from the highest income group (more than Nu 500000) was 7 points. This difference, though contrary to typical expectations, was not statistically significant, suggesting that income level alone may not be a strong predictor of performance in Dzongkha Reading Literacy.

When looking at parental education, students whose fathers had a school education

performed better than those whose fathers did not attend school or college. However, in contrast, students whose mothers had no formal schooling scored, on average, higher than those whose mothers had attended school or college. These mixed patterns may reflect the influence of other contextual or household factors, but again, the observed performance gaps were not statistically significant in either case.

Figure 10.5: Mean scores for grade VI Dzongkha Reading Literacy by family characteristics



There was a much clearer relationship between student performance and the language spoken at home. Students who reported speaking Dzongkha as their primary home language scored significantly higher than those who spoke English or other local languages at home. The performance gap between students who spoke Dzongkha and those who spoke English at home was substantial (at 36 points), and this difference was statistically significant. These findings suggest that familiarity with the language through the home environment plays an important role in student success in Dzongkha Reading Literacy.

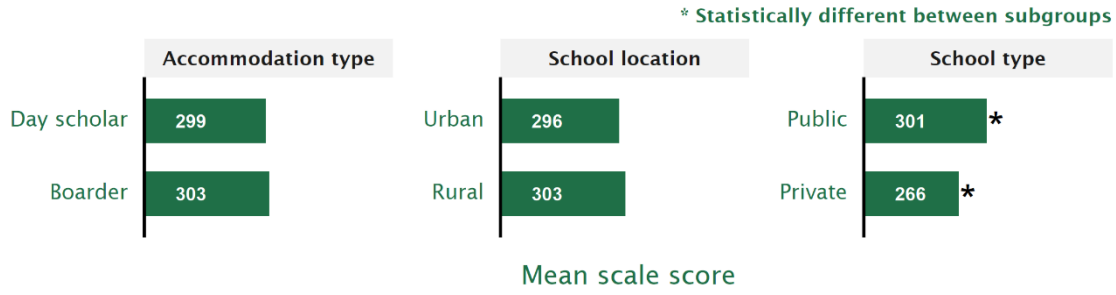
10.2.3. Performance by school characteristics

Figure 10.6 shows the mean scores for Dzongkha Reading Literacy by students' accommodation type, school location, and school type. Students residing in boarding facilities scored, on average, 4 points higher than day scholars. Similarly, students attending rural schools performed better than those in urban schools, with an average difference of 7 points. However, these differences were not statistically significant, suggesting that there is no clear or consistent relationship between these factors and student performance at the population level.

In contrast, a notable difference was observed between school types. Students in public schools outperformed those in private schools by a substantial margin of 35 points.

This difference was statistically significant, suggesting that school type is a meaningful factor associated with student performance in Dzongkha Reading Literacy.

Figure 10.6: Mean scores for grade VI Dzongkha Reading Literacy by school characteristics



10.3. Summary and conclusion

This chapter presents and discusses the findings from the grade VI Dzongkha Reading Literacy test. Key findings and recommendations are summarised below.

National: Given that this was the first cycle in which Dzongkha Reading Literacy was tested on grade VI students in the NEA, the national mean score was at 300. About 84% of the students met the minimum proficiency level set by the various educational stakeholders. In other words, about 16% (1 in 6 students) did not meet this standard. While the majority of students are performing at or above the expected level, the proportion of students below proficiency is still notable. This finding highlights the need for targeted programmes to support those at risk of falling behind and to strengthen foundational skills in Dzongkha Reading Literacy. Such efforts will be essential for improving national performance in future cycles.

District: Several districts performed statistically significantly better than the national cohort of students, with the top three being Lhuentse, Gasa, and Trongsa. In these districts, the percentage of students who did not meet the minimum proficiency level was 6% or less. In contrast, the lowest performing districts in Dzongkha Reading Literacy, which were significantly different from the national mean, included Phuntsholing Thromde, Samtse, and Tsirang. In Samtse, about 1 in 3 students (33%) did not meet the minimum proficiency level, while in Tsirang nearly 3 in 10 students (29%) fell below this standard. Phuntsholing Thromde also had a significant proportion falling below the standard, with 23% not meeting proficiency levels. These findings underscore the urgent need to investigate the underlying causes of low performance in these districts. Additionally, they highlight the importance of allocating additional support, and implementing targeted policies that prioritise students from these districts.

Gender: Girls outperformed boys in Dzongkha Reading Literacy by 16 points, and we found evidence to suggest that this gender gap is statistically significant both nationally and in Samdrup Jongkhar and Samtse. However, these gender gaps were comparatively smaller in magnitude compared to the performance differences observed across other student characteristics.

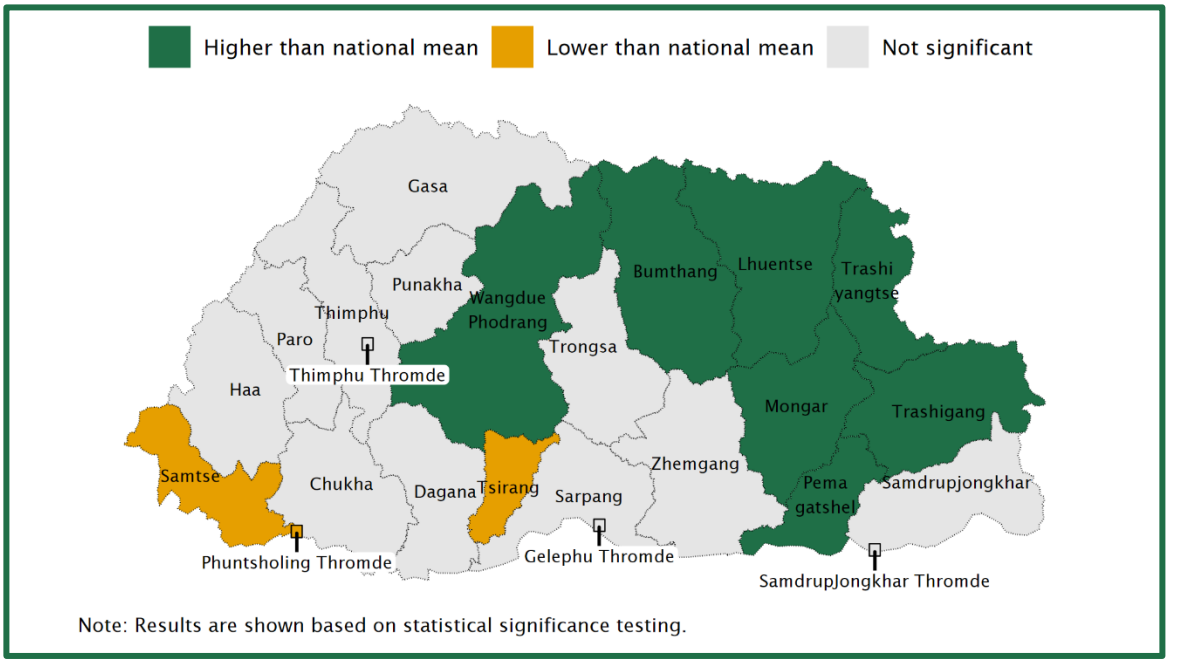
CWD: Students without disabilities outperformed students with disabilities. However, we did not find evidence to suggest that this gap is statistically significant, potentially due to high uncertainty in the estimates for CWD students as a consequence of the small sample size.

Other characteristics: Statistically significant performance gaps were observed in home language and school type. In particular, one of the bigger performance gaps was found between students who spoke Dzongkha at home and those who spoke English. These findings suggest that familiarity with the language of the test plays an important role in student success in Dzongkha Reading Literacy. Furthermore, students in public schools outperformed those in private schools by a substantial margin of 35 points.

Policy implications: To improve student outcomes in Dzongkha Reading Literacy, targeted language support should be provided to students who do not speak Dzongkha at home. This could include additional Dzongkha language instruction, reading support programmes, and teacher-led interventions focused on building foundational language skills. Schools, particularly private schools, should also be encouraged to strengthen Dzongkha language instruction and ensure alignment with curriculum standards.

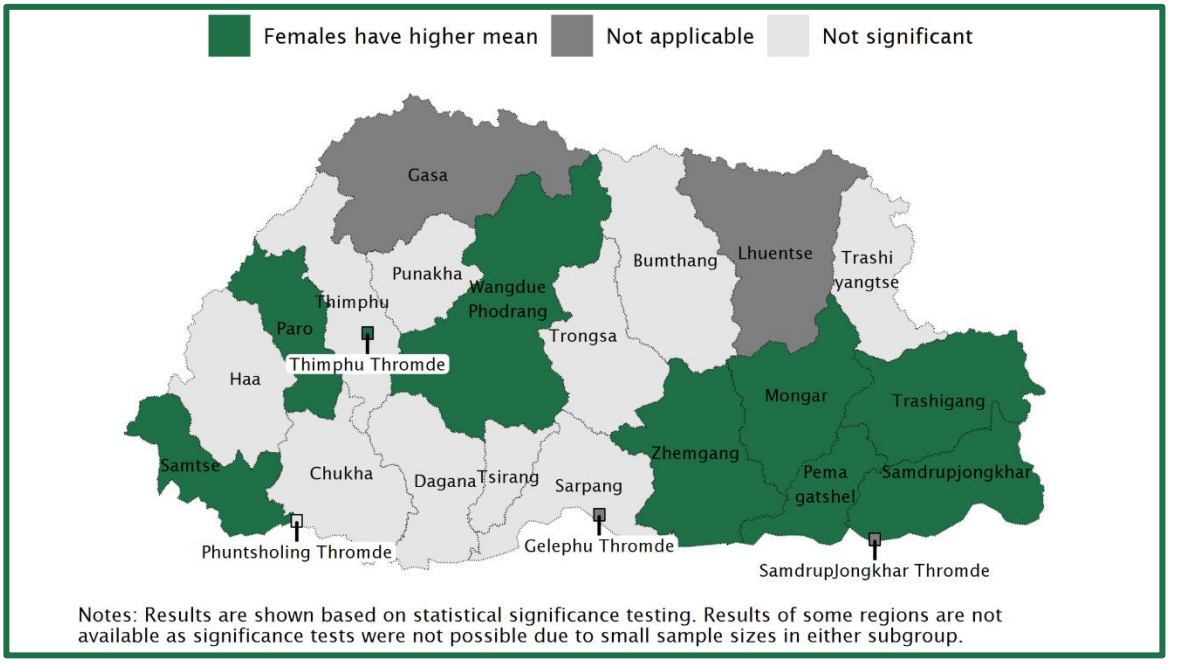
Chapter 11. Achievement of grade VI students in Dzongkha Writing Literacy

Summary 11.1: Student achievement in grade VI Dzongkha Writing Literacy by district



Note: Results are shown based on statistical significance testing.

Summary 11.2: Student achievement in grade VI Dzongkha Writing Literacy by district and gender



Notes: Results are shown based on statistical significance testing. Results of some regions are not available as significance tests were not possible due to small sample sizes in either subgroup.

11.1. Performance

This chapter presents the achievement of grade VI students in the Dzongkha Writing Literacy test of the NEA 2024. The discussion focusses on the analysis of student mean scores, percentile distributions, proficiency levels, group differences, and contextual factors affecting student performance.

11.1.1. Mean scores

Table 11.1 shows the mean scores of all of the districts, as well as the national mean. In addition to the mean scores, the standard error and 95% confidence intervals are provided for statistical comparison. These statistics are not provided for Gelephu Thromde; since only students from a single school participated in this district, it was not possible to assess how much results might have differed in other schools. T-tests were conducted to check if the mean score of each district was statistically different from the national mean. The results of these tests, including the p-values, are provided in Table 11.1. As explained in the introduction section, all significance testing in this report uses a critical value of $p<0.01$. For this reason, there are some instances in Table 11.1 where the 95% confidence interval does not include 300 but the difference is not highlighted as statistically significant.

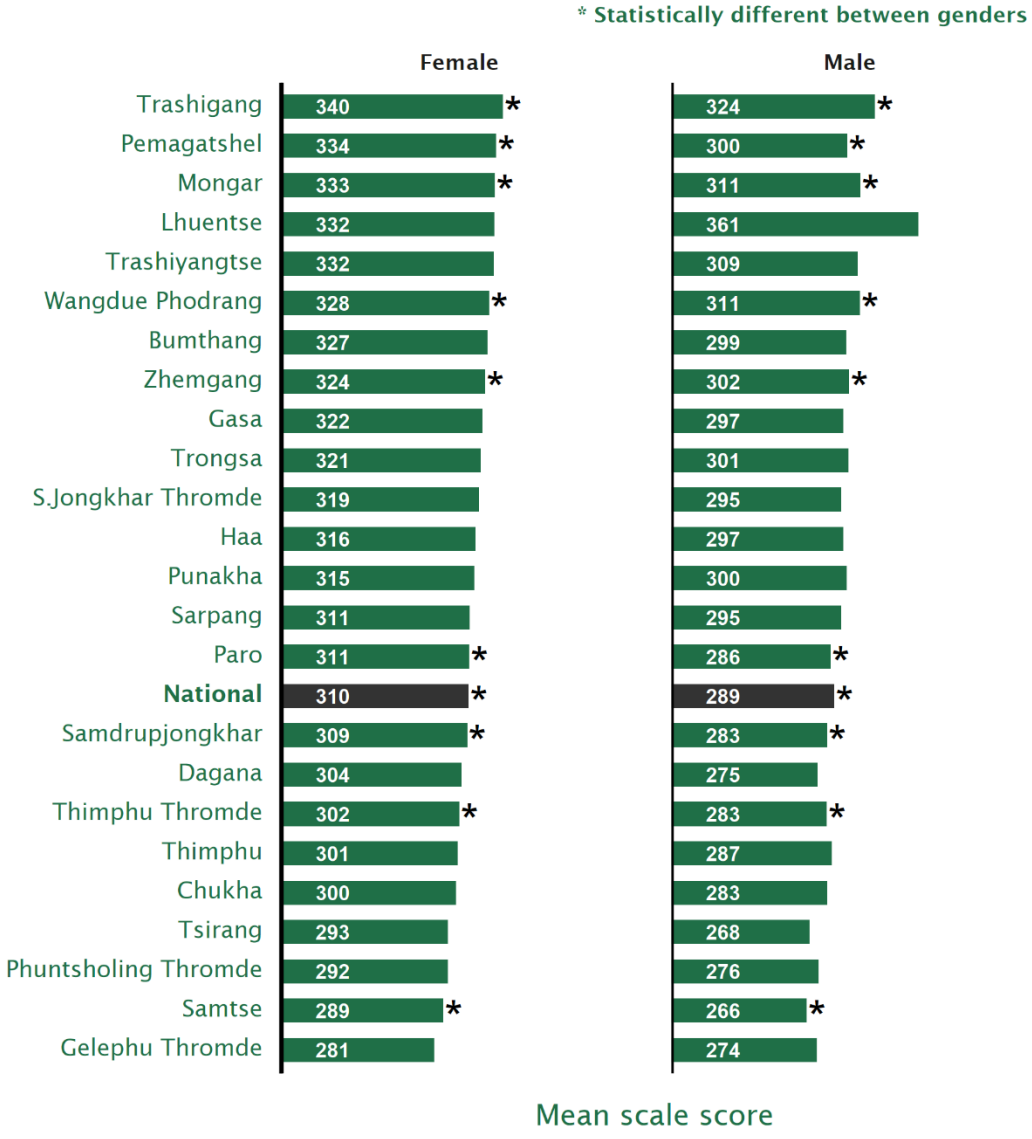
Three districts – Phuntsholing Thromde, Samtse, and Tsirang – had mean scores that were statistically significantly lower than the national mean. Between these three districts, the lowest mean score was observed in Samtse. The students from Samtse performed lower than the national cohort by an average of 23 points (277 vs 300).

In contrast, seven districts – Bumthang, Lhuentse, Mongar, Pemagatshel, Trashigang, Trashiyangtse, and Wangdue Phodrang – had mean scores that were statistically significantly higher than the national mean. The students from Lhuentse, in particular, scored 44 points higher than the national mean (344 vs 300).

Table 11.1: Mean scores for grade VI Dzongkha Writing Literacy by district

District	Mean	Standard error	95% confidence interval	p-value	Statistically different than the national mean?
Bumthang	313	4.43	304 - 321	0.008	Higher
Chukha	292	5.37	281 - 302	0.144	Not significant
Dagana	289	8.58	273 - 306	0.226	Not significant
Gasa	309	8.75	292 - 327	0.300	Not significant
Gelephu Thromde	278	-	-	-	-
Haa	307	6.05	295 - 319	0.275	Not significant
Lhuentse	344	7.43	329 - 358	0.000	Higher
Mongar	323	7.05	309 - 337	0.002	Higher
Paro	298	4.64	289 - 307	0.750	Not significant
Pemagatshel	316	4.23	308 - 325	0.000	Higher
Phuntsholing Thromde	284	2.28	280 - 289	0.000	Lower
Punakha	307	7.74	292 - 322	0.371	Not significant
Samdrup Jongkhar	297	6.39	284 - 309	0.620	Not significant
S.Jongkhar Thromde	307	3.02	301 - 313	0.046	Not significant
Samtse	277	4.98	267 - 287	0.000	Lower
Sarpang	303	8.65	286 - 319	0.776	Not significant
Thimphu	294	3.99	287 - 302	0.206	Not significant
Thimphu Thromde	293	4.67	283 - 302	0.142	Not significant
Trashigang	333	4.15	325 - 341	0.000	Higher
Trashiyangtse	320	6.88	307 - 334	0.004	Higher
Trongsa	312	6.86	298 - 325	0.104	Not significant
Tsirang	281	2.89	275 - 286	0.000	Lower
Wangdue Phodrang	320	5.12	310 - 330	0.000	Higher
Zhemgang	313	7.26	299 - 328	0.073	Not significant
National	**300**	**1.92**	**296 - 304**	-	-

Figure 11.1: Mean scores for grade VI Dzongkha Writing Literacy by district and gender



Notes: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution. Significance tests were not carried out for Gasa, Gelephu Thromde, Lhuentse, and S.Jongkhar Thromde because only one or two schools participated.

Figure 11.1 compares the mean Dzongkha Writing Literacy scores of boys and girls within each district. At the national level, girls significantly outperformed boys by 21 points. The largest gender gap was observed in Pemagatshel, where girls scored 34 points higher than boys, followed by Samdrup Jongkhar with a difference of 26 points. Five other districts recorded significant gaps ranging from 19 to 24 points in favour of girls: Paro (25 points), Samtse (23 points), Mongar and Zhemgang (22 points each), and Thimphu Thromde (19 points). Wangdue Phodrang and Trashigang recorded relatively smaller but still statistically significant differences of 17 and 16 points, respectively. These findings highlight consistent gender-based performance differences in Dzongkha Writing Literacy across multiple regions.

11.1.2. Percentile distributions

The percentile distribution illustrates how students' performance is spread across the range of possible scores. It helps indicate a student's standing relative to the rest of the group. In the context of the NEA, a percentile score represents the scale score below which a certain percentage of students fall. For example, the 5th percentile score in Dzongkha Writing Literacy indicates that 5% of students scored below that value.

Percentile distributions also provide insight into the degree of variation in student performance. The range between the 25th and 75th percentiles – known as the interquartile range – captures the middle 50% of scores. Meanwhile, the range between the 5th and 95th percentiles includes 90% of all scores. A wider range suggests greater variability in performance among students, while a narrower range indicates more similarity.

Table 11.2: Percentile scores in grade VI Dzongkha Writing Literacy, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	222	279	311	343	386	63	164
Male	210	260	292	321	367	61	157
National	**213**	**272**	**300**	**331**	**376**	**59**	**164**

Table 11.2 presents the percentile scores and the ranges for the NEA 2024 Dzongkha Writing Literacy test, both nationally and by gender. Nationally, 50% of students scored between 272 and 331, while 90% scored between 213 and 376.

When broken down by gender, the distribution of scores for boys was slightly narrower than that of girls. The interquartile range (25th–75th percentile) for girls was 63 points, compared to 61 points for boys; the range between the 5th and 95th percentiles was 164 points for girls, compared to 157 points for boys. This indicates that boys performed marginally more similarly to one another than girls.

Table 11.3 shows the percentile score distribution by district, and
Figure 11.2 visualises the distribution alongside the mean score for each district. Districts shown on
Figure 11.2 are ordered from highest to lowest mean score. The results show considerable variation in score ranges across districts.

The districts with the narrowest interquartile ranges were Trashigang (41) and Trongsa (42), suggesting that student performance in these districts was more consistent compared to the variation observed in other districts. Although Gelephu Thromde recorded the widest interquartile range (83), this finding should be interpreted with caution, as the data is based on a single school and may not reflect district-wide performance.

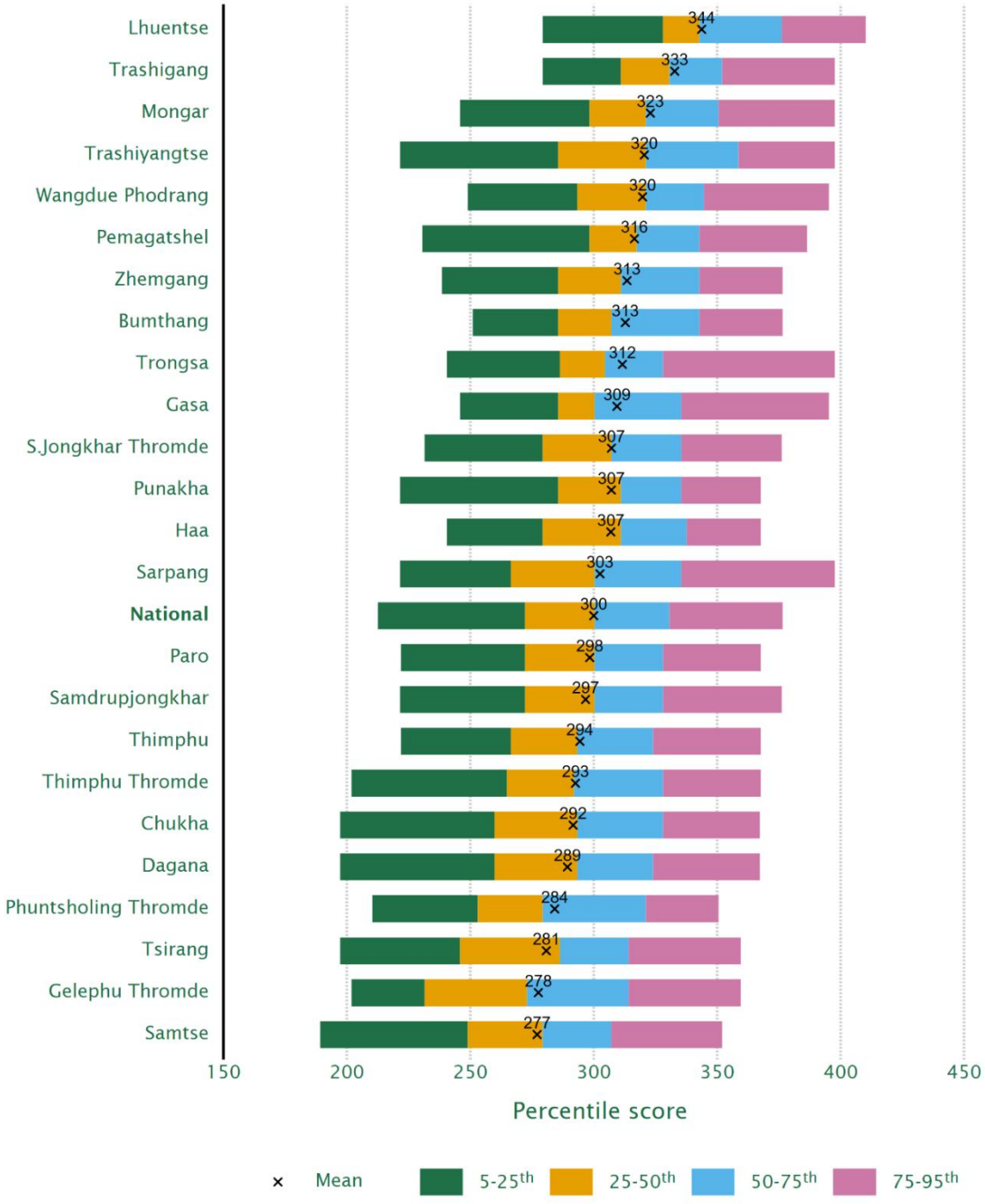
Excluding Gelephu Thromde, the widest interquartile range was observed in Trashiyangtse (73), indicating greater variability in student performance compared to other districts. For the remaining districts, the interquartile range ranged from 45 to 69 points, suggesting moderate differences in how student scores were distributed within districts.

The score range between the 5th and 95th percentiles also varied notably across districts, with the narrowest range observed in Trashigang (118) and the widest in Sarpang and Trashiyangtse (176). These variations reflect significant differences in the overall spread of student achievement levels across districts.

Table 11.3: Percentile scores in grade VI Dzongkha Writing Literacy, nationally and by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	251	286	307	343	376	57	126
Chukha	197	260	293	328	367	68	170
Dagana	197	260	293	324	367	64	170
Gasa	246	286	300	335	395	50	149
Gelephu Thromde	202	231	273	314	360	83	158
Haa	241	279	311	338	368	58	127
Lhuentse	279	328	343	376	410	48	131
Mongar	246	298	321	351	398	52	152
Paro	222	272	300	328	368	56	146
Pemagatshel	231	298	317	343	386	45	156
Phuntsholing Thromde	210	253	279	321	351	68	140
Punakha	222	286	311	335	368	50	146
Samdrup Jongkhar	222	272	300	328	376	56	155
S.Jongkhar Thromde	231	279	307	335	376	56	145
Samtse	189	249	279	307	352	58	163
Sarpang	222	266	300	335	398	69	176
Thimphu	222	266	293	324	368	58	146
Thimphu Thromde	202	265	292	328	368	63	166
Trashigang	279	311	331	352	398	41	118
Trashiyangtse	222	286	321	359	398	73	176
Trongsa	241	286	305	328	398	42	157
Tsirang	197	246	286	314	360	68	162
Wangdue Phodrang	249	293	321	345	395	51	146
Zhemgang	238	286	311	343	376	57	138
National	**213**	**272**	**300**	**331**	**376**	**59**	**164**

Figure 11.2: Percentile scores in grade VI Dzongkha Writing Literacy, nationally and by district



11.1.3. Proficiency levels

Table 11.4 shows the proficiency levels developed to describe performance in grade VI Dzongkha Writing Literacy. The lowest proficiency level is Level 1, and the highest proficiency level is Level 4. The description for each proficiency level indicates the skills and knowledge students at that level are expected to be able to demonstrate.

Table 11.4: Proficiency descriptions for grade VI Dzongkha Writing Literacy

Proficiency level མཐར་ཕྱིན་གྱི་གནས་རིམ།	Description འགྲེལ་བཤད།
བཞི་པ།	གནས་རིམ་འདི་ནང་ཚུད་མི་ སློབ་ཕྲུག་ཚུ་གིས་ འགྲེལ་བཤད་དང་ ལོ་རྒྱུས་ཚུ་ རྩོམ་རིགས་ཚུ་འབྲི་སྐབས་ཚིག་མཚམས་དང་ བརྗོད་མཚམས་ དོན་མཚམས་ཚུ་ལེགས་ཤོམ་སྦེ་བཅད་དེ་བྲི་ཚུགས། གནད་དོན་རིམ་སྒྲིག་འབད་དེ་བྲི་ནི་ཚུ་ལེགས་ཤོམ་ཡོད་ པའི་ཁར་ ནང་དོན་ཚུ་ ཁ་གསལ་ཏོག་ཏོ་དང་ འཛོན་ཐངས་ཅན་སྦེ་ བྲི་ཚུགས། རྩོམ་རིགས་ཚུ་འབྲི་བའི་སྐབས་ གསར་ གཏོད་ཅན་དང་ ཁ་གསལ་ཏོག་ཏོ་སྦེ་བྲི་ཚུགསཔ་མ་ཚད་ རྫོང་ཁ་ཚིག་གི་གོ་རིམ་ཚུ་ རྫོང་ཁའི་ངག་གཤིས་དང་ མཐུན་ཏོག་ ཏོ་དང་ འབྲེལ་བ་ཡོདཔ་སྦེ་ བྲི་ཚུགས། འབྲེལ་ཡོད་ཀྱི་ཡིག་འགྲུལ་ཚུ་ ཡུལ་དང་ གནད་དོན་དང་བསྟུན་པའི་འཛོབ་ལམ་དང་འཁྲིལ་ཏེ་ རང་སྟོབས་ཀྱིས་ ལེགས་ཤོམ་སྦེ་ བྲི་ཚུགས། རྫོང་ཁའི་མིང་ཚིག་གི་ཐ་སྙད་ཚུ་ མང་ཆེ་བ་ གནས་སྐབས་བསྟུན་ཏེ་ལག་ལེན་འཐབ་ཚུགས་པའི་ཁར་ ཕྲད་དང་རྣམ་དབྱེ་དང་ དུས་གསུམ་གྱི་བྱ་ཚིག་ ཡིག་སྡེབ་ ཚག་ཤད་ཚུ་ འཛོལ་བ་མེད་པར་བྲི་ཚུགས། སྙན་རྩོམ་གྱི་རིགས་ཚུ་འབྲི་བའི་སྐབས་ ཚིག་འབྲུ་ཆ་ཡ་བསྒྲིག་ནི་དང་ ཚིག་རྐང་འདྲན་འདྲ་ བཟོ་སྟེ་ སྙན་ཚིག་ལྡན་པའི་རྩོམ་རྐྱབ་ཚུགས།
གསུམ་པ།	གནས་རིམ་འདི་ནང་ཚུད་མི་ སློབ་ཕྲུག་ཚུ་གིས་ རྩོམ་རིགས་ཚུ་འབྲི་བའི་སྐབས་ ཚིག་མཚམས་དང་ བརྗོད་མཚམས་ དོན་ མཚམས་ལེགས་ཤོམ་སྦེ་བཅད་དེ་བྲི་ཚུགས། གནད་དོན་དང་ ནང་དོན་གྱི་རིམ་སྒྲིག་ལ་ལུ་ཅིག་ལེགས་ཤོམ་ཡོད་རུང་ འགྱུར་ ཟློག་འོང་། དོན་ཚན་དང་ ཧ་ལམ་འབྲེལ་བ་ཡོད་པའི་ཁར་ ཧ་གོ་ཚུགསཔ་སྦེ་བྲི་ཚུགས་རུང་ གཏིང་ཟབ་དྲགས་སྦེ་ བྲི་ མི་ཚུགས། འབྲེལ་ཡོད་ཀྱི་ཡིག་འགྲུལ་མང་ཆེ་བ་ ཡུལ་དང་ གནད་དོན་དང་བསྟུན་པའི་འཛོབ་ལམ་དང་འཁྲིལ་ཏེ་ ཧ་ ལམ་ཅིག་ བྲི་ཚུགས། མིང་ཚིག་གི་ཐ་སྙད་ཧ་ལམ་ཅིག་ གནས་སྐབས་འཁྲིལ་ཏེ་ ལག་ལེན་འཐབ་ཚུགས་པའི་ཁར་ ཕྲད་ དང་རྣམ་དབྱེ་དང་ དུས་གསུམ་གྱི་བྱ་ཚིག་ ཡིག་སྡེབ་དང་ ཚག་ཤད་འཐེན་ནི་ཚུ་ ཧ་ལམ་ཚད་འཛིན་འབད་དེ་བྲི་ཚུགས། སྙན་རྩོམ་གྱི་རིགས་ཚུ་འབྲི་བའི་སྐབས་ ཚིག་འབྲུ་ཆ་ཡ་བཟོ་ནི་དང་ ཚིག་རྐང་འདྲན་འདྲ་སྦེ་བཟོ་སྟེ་ སྙན་ཚིག་ཧ་ལམ་ ཅིག་ཡོད་པའི་ རྩོམ་རྐྱབ་ཚུགས།
གཉིས་པ།	གནས་རིམ་འདི་ནང་ཚུད་མི་ སློབ་ཕྲུག་ཚུ་ལུ་ རྩོམ་རིག་མ་འདྲཝ་ཚུ་འབྲི་བའི་སྐབས་ ཚིག་མཚམས་དང་ བརྗོད་མཚམས་ དོན་མཚམས་ཧ་ལམ་བཅད་དེ་བྲི་ཚུགས། གནད་དོན་རིམ་སྒྲིག་གི་རིག་རྩལ་ཨ་ཙི་རེ་ཡོད་པའི་ཁར་ དོན་ཚན་དང་འབྲེལ་བ་ ཧ་ ལམ་ཡོདཔ་སྦེ་བྲི་ཚུགས། འབྲེལ་ཡོད་ཀྱི་ཡིག་འགྲུལ་ལ་ལུ་ཅིག་ ཡུལ་དང་ གནད་དོན་དང་བསྟུན་པའི་ འཛོབ་ལམ་ དང་འཁྲིལ་ཏེ་ ཧ་ལམ་ཅིག་ བྲི་ཚུགས། མིང་ཚིག་ཐ་སྙད་ཚུ་གནས་སྐབས་དང་བསྟུན་ཏེ་ ཨ་ཙི་རེ་ལག་ལེན་འཐབ་ཚུགས་པའི་ ཁར་ ཕྲད་དང་རྣམ་དབྱེ་དང་ དུས་གསུམ་གྱི་བྱ་ཚིག་ ཡིག་སྡེབ་ དེ་ལས་ ཚག་ཤད་ཚུ་ ཧ་ལམ་ཅིག་འཛོལ་བ་མེད་པར་ བྲི་ཚུགས། སྙན་རྩོམ་གྱི་རིགས་ཚུ་འབྲི་སྐབས་ ཚིག་འབྲུ་ཆ་ཡ་བཟོ་ནི་དང་ ཚིག་རྐང་འདྲན་འདྲ་སྦེ་བཟོ་སྟེ་ སྙན་ཚིག་ཨ་ཙི་རེ་ བསྡུགས་ཐོག་ལས་ རྩོམ་ཐུང་ཀུ་རེ་ རྐྱབ་ཚུགས།
དང་པ།	གནས་རིམ་འདི་ནང་ཚུད་མི་ སློབ་ཕྲུག་གིས་ འགྲེལ་བཤད་དང་ ལོ་རྒྱུས་ཚུ་ཁྱད་རྣམ་དང་འཁྲིལ་ཏེ་ སྤྱིར་ཚིག་ཨ་ཙི་རེ་ བསྡུགས་ཐོག་ལས་ བྲི་ཚུགས། འབྲེལ་ཡོད་ཞུ་ཡིག་གི་རིགས་ འཇམ་སམ་རེ་ བྲི་ཚུགས། དུས་རྒྱུན་ལག་ལེན་ འཐབ་ དགོ་པའི་ མིང་ཚིག་གི་ཐ་སྙད་དང་ ཕྲད་དང་རྣམ་དབྱེ་དང་དུས་གསུམ་གྱི་བྱ་ཚིག་གི་ ཡིག་སྡེབ་མང་ཆེ་བ་མ་འཛོལ་བར་ བྲི་ཚུགས། ཚིག་འབྲུ་ཆ་ཡ་བསྒྲིགས་ཏེ་ ཚིག་རྐང་མ་སྨོམས་པའི་ རྩོམ་ཐུང་ཀུ་རེ་ རྐྱབ་ཚུགས།

One of the objectives of the NEA 2024 is to set a minimum proficiency level for grade VI Dzongkha Writing Literacy. After a series of extensive reviews and deliberations among education stakeholders in the country, it has been decided that students are expected to reach at least Level 2 by the end of grade VI. Thus, students with scores between Level 2 and Level 4 are considered to have met the minimum proficiency level of grade VI.

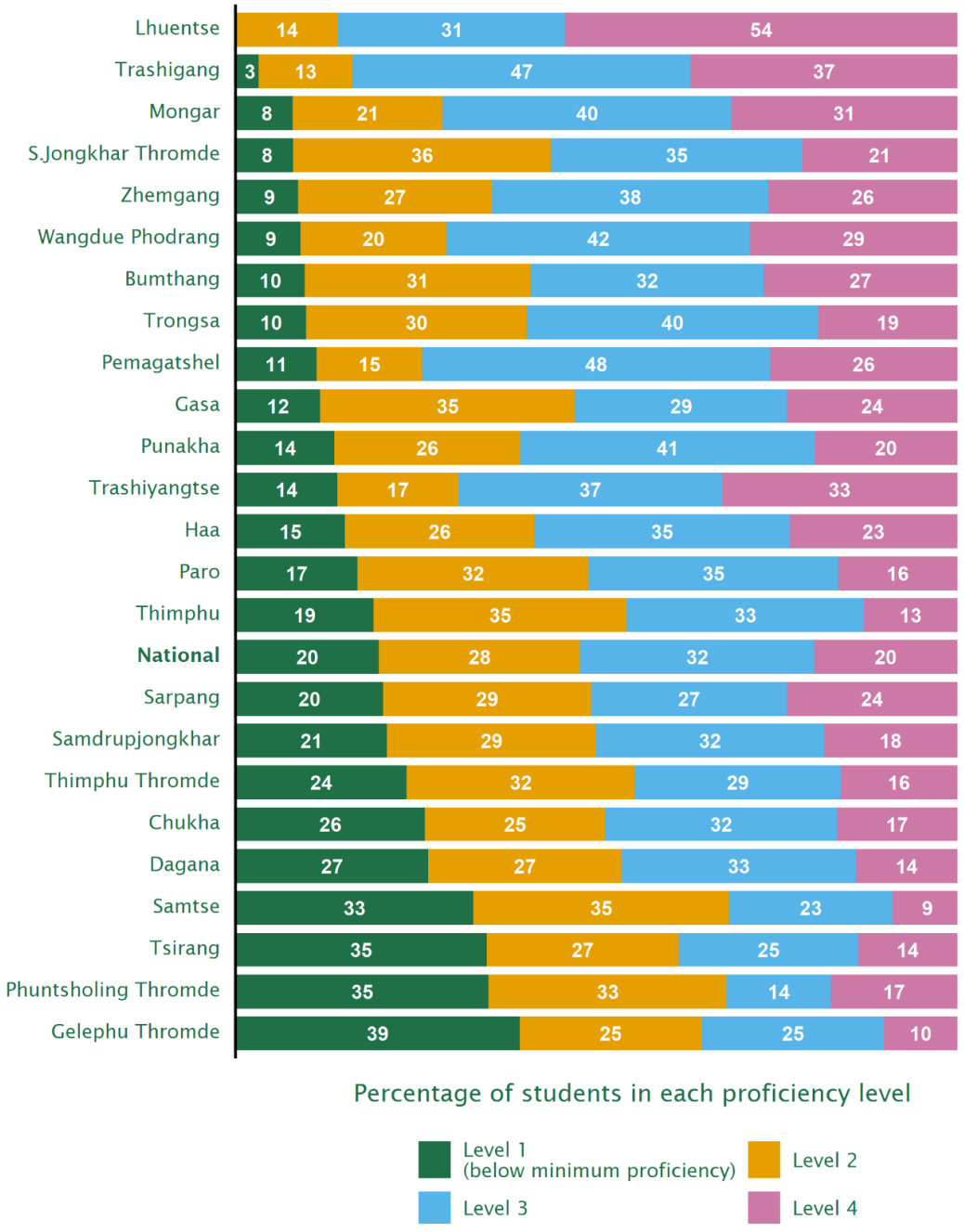
Table 11.5 shows the percentage of students at each proficiency level, and the total percentage of students who achieved the minimum level of proficiency (Level 2 and above). Figure 11.3 visualises these results, ordered from the highest to the lowest percentage of students, with the districts with the highest percentage of students meeting the minimum proficiency level at the top, and the districts with the lowest percentage of students meeting the minimum proficiency level at the bottom of the graph.

Table 11.5: Percentage of students at each proficiency level for grade VI Dzongkha Writing Literacy by district

District	Percentage of students at each level				Percentage of students achieving minimum proficiency (%)
	Level 1	Level 2	Level 3	Level 4	
Bumthang	9.6	31.2	32.4	26.8	90.4
Chukha	26.3	24.9	32.2	16.6	73.7
Dagana	26.8	26.7	32.5	14.0	73.2
Gasa	11.8	35.3	29.4	23.5	88.2
Gelephu Thromde	39.4	25.2	25.2	10.1	60.6
Haa	15.2	26.2	35.4	23.2	84.8
Lhuentse	0.0	14.3	31.4	54.3	100.0
Mongar	7.9	20.8	39.9	31.3	92.1
Paro	17.0	32.0	34.6	16.5	83.0
Pemagatshel	11.3	14.6	48.2	25.9	88.7
Phuntsholing Thromde	35.1	32.9	14.5	17.5	64.9
Punakha	13.7	25.8	40.8	19.7	86.3
Samdrup Jongkhar	21.1	28.9	31.6	18.4	78.9
S.Jongkhar Thromde	8.0	35.7	34.9	21.4	92.0
Samtse	33.0	35.4	22.6	9.0	67.0
Sarpang	20.5	28.8	27.1	23.6	79.5
Thimphu	19.2	35.0	32.9	12.9	80.8
Thimphu Thromde	23.8	31.6	28.5	16.1	76.2
Trashigang	3.2	13.0	46.9	36.9	96.8
Trashiyangtse	14.1	16.7	36.5	32.6	85.9
Trongsa	9.9	30.5	40.4	19.2	90.1
Tsirang	34.8	26.6	24.9	13.7	65.2
Wangdue Phodrang	9.0	20.2	42.1	28.7	91.0
Zhemgang	8.7	26.9	38.3	26.1	91.3
National	**19.9**	**27.9**	**32.4**	**19.8**	**80.1**

In the NEA 2024, 80% of grade VI students met the minimum proficiency level for Dzongkha Writing Literacy. Specifically, 28% achieved Level 2, 32% reached Level 3, and 20% attained Level 4. The remaining 20% of students were classified at Level 1, indicating they did not meet the minimum proficiency threshold.

Figure 11.3: Percentage of students at each proficiency level for grade VI Dzongkha Writing Literacy by district



Note: Only one school from Gelephu Thromde participated in NEA 2024. Results for this region should therefore be interpreted with caution.

Across districts, the percentage of students who met the minimum proficiency level in Dzongkha Writing Literacy ranged from 61% (Gelephu Thromde) to 100% (Lhuentse). Lhuentse's exceptional performance was also marked by the highest proportion of students at Level 4 (54%), indicating not just basic competence but advanced writing proficiency. Trashigang followed closely, with 97% meeting the standard and 37% reaching Level 4.

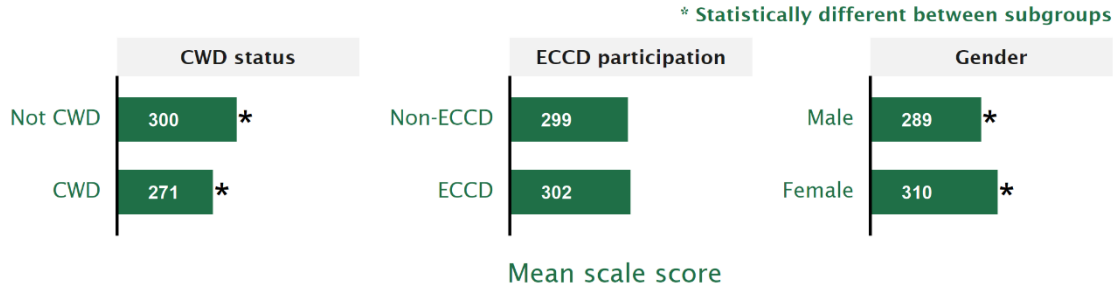
At the lower end, Gelephu Thromde's 61% of students who met the standard should be interpreted with caution, as results are based on data from only one school. The other districts at the lower end are Tsirang and Phuntsholing Thromde (65% each), followed by Samtse (67%). These regions also had some of the smallest shares of top performers.

11.2. Performance gaps in context

11.2.1. Performance by student characteristics

Figure 11.4 shows the mean scores for Dzongkha Writing Literacy by Early Childhood Care and Development (ECCD) participation, gender, and children with disabilities (CWD) status. Students without disabilities scored 29 points higher than those with disabilities, while girls outperformed boys by 21 points; both differences were statistically significant. Students who participated in the ECCD programme scored slightly higher than their non-ECCD peers by 3 points, but this difference is not statistically significant.

Figure 11.4: Mean scores for grade VI Dzongkha Writing Literacy by student characteristics



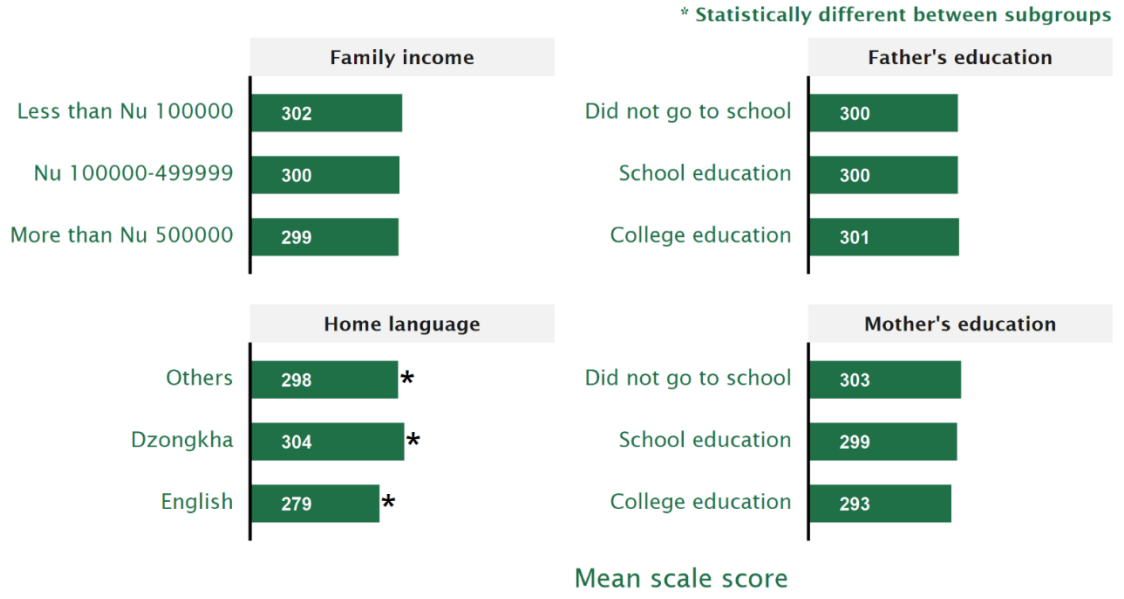
11.2.2. Performance by family characteristics

Figure 11.5 shows the mean scores for Dzongkha Writing Literacy by students' family income, parental education, and main language spoken by the students at home. Firstly, students from families earning less than Nu 100000 had a slightly higher mean score (302) than those from the highest income group (more than Nu 500000), who had a mean score of 299. This 3-point difference was not statistically significant, suggesting that family income was not associated with student performance in Dzongkha Writing Literacy in the NEA 2024.

Secondly, parental education did not show a statistically significant association with Dzongkha Writing Literacy performance. Students scored similarly, irrespective of whether their fathers had no formal education, a school education, or a college education (300, 300, and 301, respectively). Students whose mothers had no formal education scored slightly higher (303) than those whose mothers had a school (299) or college education (293), but

these differences were not statistically significant. These findings indicate that parental education alone is not a predictor of student performance in this domain.

Figure 11.5: Mean scores for grade VI Dzongkha Writing Literacy by family characteristics



Lastly, the main language spoken at home showed a meaningful association with performance. Students who spoke Dzongkha at home scored a mean of 304, compared to 298 for those who spoke other languages and 279 for those who spoke English. These differences suggest that regular exposure to Dzongkha in the home environment may contribute positively to writing proficiency. The performance gap was statistically significant, indicating that home language is a relevant factor in understanding student outcomes in Dzongkha Writing Literacy.

Of the three background factors examined, a statistically significant gap in Dzongkha Writing Literacy was only observed for home language. There were visible but not significant differences associated with family income and parental education, suggesting that language exposure at home is a more consistent predictor of performance in the NEA 2024.

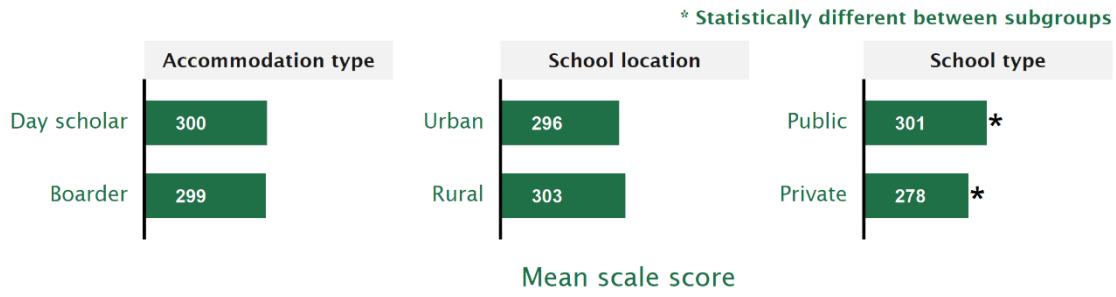
11.2.3. Performance by school characteristics

Figure 11.6presents the mean scores for Dzongkha Writing Literacy for grade VI students disaggregated by accommodation type, school location, and school type. Day scholars performed similarly to boarders, with a mean score difference of just 1 point. Students attending rural schools outperformed their urban counterparts by an average of 7 points. Notably, public school students achieved a mean score 23 points higher than those in private schools.

Of the three comparisons, only the difference between public and private school

performance was statistically significant. The magnitude of this gap exceeded half a standard deviation (SD), suggesting a moderate disparity in Dzongkha Writing Literacy outcomes between school types.

Figure 11.6: Mean scores for grade VI Dzongkha Writing Literacy by school characteristics



11.3. Summary and conclusion

This chapter presents and discusses the findings from the grade VI Dzongkha Writing Literacy test. Key findings and recommendations are summarised below.

National: In the NEA 2024, Dzongkha Writing Literacy was assessed for the first time at grade VI level. Nationally, 80% of students met the minimum proficiency level. In other words, about 20% of students did not meet the minimum proficiency level for Dzongkha Writing Literacy. These results highlight the need to strengthen foundational writing skills, particularly for students at risk of falling behind.

District: Districts that performed notably well included Lhuentse and Trashigang. In Lhuentse, all students met the minimum proficiency level, and 54% achieved the highest proficiency level (Level 4). Trashigang followed closely, with 97% of students meeting the minimum proficiency level and 37% attaining the highest level. In contrast, only 61% of students from Gelephu Thromde met the minimum proficiency level, although this figure is based on data from only one school and should be interpreted with caution. Other districts with a relatively low performance included Tsirang (65%), Phuntsholing Thromde (65%), and Samtse (67%). These districts also had fewer top performers nationally. These results highlight the need for policy support to improve Dzongkha Writing Literacy nationally, with additional focus on weaker-performing districts.

Gender: Girls significantly outperformed boys in Dzongkha Writing Literacy, with a national mean score difference of 21 points. This gender gap was statistically significant and evident across multiple districts, with gaps ranging from 16 to 34 points. Compared to other background factors, the gender gap was substantial and consistently observed, warranting continued gender-responsive strategies in literacy development – particularly those attuned

to district-specific patterns and needs.

CWD status: Students without disabilities (non-CWD) scored 29 points higher than those with disabilities. This disparity reflects a substantial difference in outcomes, underscoring the need for inclusive education strategies and tailored support to ensure equitable learning opportunities for CWD.

Other characteristics: Statistically significant performance gaps were observed in home language and school type. Students who spoke Dzongkha at home scored highest, followed by those who spoke other languages and English, suggesting that familiarity with the language of the test contributes positively to writing proficiency. Public school students outperformed private school students by 23 points – a statistically significant difference close to half a SD. Differences associated with family income, parental education, accommodation type, school location, and ECCD participation were minimal and not statistically significant. These factors were not found to be predictors of Dzongkha Writing Literacy outcomes.

Policy implications: The findings suggest that while some background factors (such as gender, CWD status, home language, and school type) are strongly associated with performance, others (such as income, parental education, accommodation type, and ECCD participation) show weaker or non-significant associations. School type remains a key predictor of performance, with public schools outperforming private schools in this domain. These insights point to the need for targeted interventions that address both individual and institutional disparities, including inclusive education strategies, early learning support, and language-focused programmes for students from non-Dzongkha-speaking households.

Chapter 12. Factors associated with student achievement

12.1. Regression analysis

This chapter presents the results of the regression analysis. Multiple regression analyses were conducted to understand the factors associated with students' performance in grades III and VI. One regression model was run for each subject. These regressions, including all standard errors and significance tests, accounted for the NEA sampling design (students nested within schools) and the different weights that were applied to different students.

The scale score in the corresponding subject was the dependent variable, whereas the independent variables were based upon characteristics as recorded in the Education Management Information System (EMIS) data or created using responses to the student questionnaire and the teacher value questionnaire. Independent variables were grouped into student, family, and school factors. For a detailed description of each variable, see Table 12.1.

Table 12.1: Description of the variables included in the regression analysis for grade III and grade VI

Variable	Variable description
Student factors	
Children with disabilities (CWD)	Categorical variable coded as 1 if the student has disabilities, and 0 if they do not have disabilities.
Day scholar	Categorical variable coded as 1 if the student is a day scholar, and 0 if the student is a boarder.
ECCD	Categorical variable coded as 1 if the student attended an Early Childhood Care and Development (ECCD) programme, and 0 if the student did not attend an ECCD programme.
Female	Categorical variable coded as 1 when the student is female, and 0 when the student is male.
Grade repeater	Categorical variable coded as 1 when the student repeated a grade, and 0 when the student had not repeated a grade.
Missed class because of sickness	Categorical variable coded as 1 when the student reported having missed classes sometimes or always because they were sick in the last year, and 0 when they reported never having missed classes because they were sick in the last year.
Other language at home	Categorial variable with three groups: students who speak English the most at home, students who speak Dzongkha the most at home, and

English at home	students who speak any other language the most at home (for example, Sharchopkha, Khengkha, Lhotshamkha, or other). Speaking Dzongkha at home is used as the reference group against which comparisons are made.
Student's attitude toward learning	Factor scores using responses to four dichotomous items ('yes' coded as 1 and 'no' coded as 0), including 'I feel learning is important for me', 'I want to do well in life', 'I want to gain knowledge', and 'I want to get a job when I grow up'. Scores were standardised with a mean of 0 and standard deviation (SD) of 1.
Student's values as evaluated by teachers	Factor scores using twelve five-point rating scale items (from least observed value coded as 1 to most observed value coded as 5) where teachers evaluated student embodiment of values, including: 'telling the truth', 'saying "thank you"', 'volunteering to help', 'listening to teachers', 'helping someone who needs help', 'sharing things with others', 'taking care of school properties', 'going to school', 'completing homework', 'staying clean', 'throwing wastes in dust bin', and 'studying hard'. Scores were standardised with a mean of 0 and SD of 1.
Family factors	
Corporal punishment at home	Categorical variable coded as 1 if the student reported that either their parents or guardians beat them, and 0 if the student reported not being beaten.
Father's education	Ordinal variable that depicts the father's highest qualification. This was coded as 2 if the father had a college education or more, 1 if he had some school education but not college, and 0 if he did not go to school.
Family engagement time	Factor scores using seven four-point rating scale items ('never' coded as 0, 'a few times a year' coded as 1, 'a few times a month' coded as 2, and 'several times a week' coded as 3). Items included: my parents or someone in my family 'eat meals with you', 'spend time just talking to you', 'talk to you about the importance of education', 'talk to you about any problems you face at school', 'ask you about how you are getting along with other students at school', 'visit temples', and 'attend local festivals'. Scores were standardised with a mean of 0 and SD of 1.
Family educational support	Factor scores using ten dichotomous items ('yes' coded as 1 and 'no' as 0) including: my family 'helps me with homework', 'reads books to me', 'helps me with reading', 'tells stories to me', 'encourages me to write', 'helps me with project work', 'attends parent-teacher Meetings', 'asks what I do in school', 'knows my teachers', and 'encourages me to get good marks'. Scores were standardised with a mean of 0 and SD of 1.
Socio-economic status (SES) indicator	Factor scores created using 10 variables: **1. Income,** which included five categories: less than Nu. 100000 (coded as 0), Nu.100000-499999 (coded as 1), Nu.500000-899999 (coded as 2), Nu. 900000-1299999 (coded as 3), and above Nu. 1299999 (coded as 4). **2. Food security,** which included three categories: the student was hungry because there was not enough food at home 2 to 3 times a week (coded as 0), about

	once a week (coded as 1), and never or almost never (coded as 2). **3. Room,** which indicates whether the student has a bedroom of their own at home (coded as 1) or not (coded as 0). **4. House material,** which included three categories: Hut (coded as 0), a traditional house (coded as 1), and a concrete house (coded as 2). **5. Parents' occupation,** coded as 1 if either of the student's parents was a farmer and 0 otherwise. **6. Television** indicates the quantity of televisions available at home: none (coded as 0), one (1), two (2), and three or more (coded as 3). **7. Vehicle**, none (coded as 0), one (1), two (2), and three or more (3). **8. Smartphone**, none (coded as 0), one (1), two (2), and three or more (3). **9. Computer**, none (coded as 0), one (1), two (2), and three or more (3). **10. iPad/tablet**, none (coded as 0), one (1), two (2), and three or more (3). Scores were standardised with a mean of 0 and SD of 1.
School factors	
Bullied at school	Categorical variable coded as 1 if the student reported being bullied at school either sometimes, many times, or always, and coded as 0 if the student reported never being bullied.
Classroom physical environment	Factor scores using four dichotomous items ('yes' coded as 1 and 'no' as 0), including: 'there is enough space to move around', 'there is a chair or a bench for me to sit on', 'there is proper lighting', and 'there are cooling or heating systems'. Scores were standardised with a mean of 0 and SD of 1.
Classroom social environment	Factor scores using four dichotomous items ('yes' coded as 1 and 'no' as 0), including: 'my friends help me to learn', 'my teachers tell us to take part in activities', 'we do activities in groups', and 'my teachers are friendly'. Scores were standardised with a mean of 0 and SD of 1.
Corporal punishment at school	Categorical variable coded as 1 if the student reported principal/teachers use corporal punishment at their school, either sometimes, many times, or always, and 0 when the student reported principal/teachers never using it.
Public school	Categorical variable coded as 1 if the student attends a public school, and 0 if the student attends a private school.
Teacher checks the student's homework	Categorical variable coded as 1 if the student reported that the teacher checks their homework, and 0 if the teacher does not check the student's homework.
Teacher uses the student's mother tongue	Categorical variable coded as 1 when the student reported that the teacher uses the student's mother tongue to explain difficult words, and 0 when the teacher does not use the student's mother tongue to explain difficult words.
Urban school	Categorical variable coded as 1 if the student attends school in an urban area, and 0 if the student attends school in a rural area.

The tables in the following sections summarise the results from the regression analysis, showing both the coefficients and the standard errors. Coefficients with a star depict variables that were statistically significant at $p<0.01$.

Since we included several independent variables, interpretation of the coefficients is conditional on the other independent variables, that is, holding them constant (Wolf & Best, 2014). For example, in Table 12.2, the coefficient of CWD is -17 for English Reading Literacy, which reflects the estimated association of that variable (CWD) with English Reading Literacy, controlling for all other variables in the model. In addition, we reported the intercept in the tables; however, we do not include it in the interpretation as the intercept represents the mean scale score (dependent variable) when all the independent variables are 0, which is quite unlikely to happen in practice (Wolf & Best, 2014).

Lastly, the R-squared indicator, which represents the proportion of variability of the dependent variable that is explained by the regression model, is included in the last row of each table. Higher values indicate that the model explains more students' performance variation in the NEA 2024.

12.2. Results for grade III students

12.2.1. Student factors associated with achievement

Table 12.2 summarises the results from the regression analysis of students' performance in grade III. Among the student factors, students who attended an ECCD programme performed significantly higher in Dzongkha Reading Literacy than students who did not attend an ECCD programme, after controlling for the other factors in the model. Male students outperformed female students by 13 points in Mathematical Literacy, and students who never repeated a grade also outperformed students who had repeated a grade, by 14 points in English Reading Literacy and 15 points in Mathematical Literacy. Students who speak mostly English at home outperformed students who speak mostly Dzongkha at home by 17 points in English Reading Literacy, which is considered a moderate difference of 0.30 SD. The teachers' evaluation of student values had a positive association with performance in all grade III subjects, after controlling for all other variables. That is, students who were rated higher in the teacher evaluation of the embodiment of values – such as telling the truth, saying thank you, or studying hard – tended to perform better, compared to students who were rated lower by their teachers.

12.2.2. Family factors associated with achievement

Among the family factors, corporal punishment at home showed a negative association with Mathematical Literacy; specifically, students who reported being beaten at home by their parents or guardians underperformed by 6 points, compared to students who reported not being beaten. This finding aligns with multiple studies which have found evidence that exposure to family violence is negatively associated with achievement (Supol et al., 2020;

Wang et al., 2023). Since the mother's and father's education levels are closely correlated, only one of them was included in the model. The father's education was positively associated with performance in both English Reading and Mathematical Literacy; students with highly educated fathers outperformed students whose fathers had lower levels of education.

Contrary to expectations, family educational support was negatively associated with English Reading Literacy. One possible explanation for the finding is how the family educational support variable was created: some of the items included might reflect increased support in response to student academic struggles. For example, the item 'my family helps me with homework' could indicate that parents and family help the student with their homework regularly, but they might try to help them more often and with more dedication when the student is underperforming in school. Similarly, other items such as 'my family helps me with reading', 'encourages me to write', 'helps me with project work', and 'attends parent-teacher meetings' could be occurring more frequently among families of students who need more help in school. This could explain why higher scores in the educational support variable are associated with lower performance in school. The results should not be interpreted as evidence that educational support from parents and family negatively affects student performance. On the contrary, several authors have found evidence that parental involvement in education and school play an important role in children's achievement (Fan & Chen, 2001; Wilder, 2014). Lastly, socio-economic status (SES) was positively associated with English Reading and Mathematical Literacy: students from families with higher SES (i.e., higher income, better occupation, better houses, and more assets) outperformed students from lower-SES backgrounds.

12.2.3. School factors associated with achievement

Among the school factors, three variables were significant. Students who attend public schools performed significantly better than students who attend private schools by 27 points in Dzongkha Reading Literacy, a moderate difference of more than half a SD. In contrast, students who attend private schools performed significantly better than students who attend public schools by 16 points in English Reading Literacy, a moderate difference of 0.3 SD. Students who attend urban schools performed 19 points higher in English Reading Literacy and 15 points higher in Mathematical Literacy compared to students who attend rural schools. In addition, students whose teachers use their mother tongue to explain difficult words scored 10 points less in Mathematical Literacy compared to students whose teachers do not use their mother tongue. This variable was included in the model because multiple studies have found that receiving education in the student's mother tongue is positively associated with higher achievement and more culturally and linguistically responsive practices in the classroom (Agirdag & Vanlaar, 2016; Bialystok, 2018). However, the item used provides limited evidence regarding regular use of the mother tongue as an instructional practice; instead, the item assesses whether teachers use the student's mother tongue to explain difficult words. This means that use of the mother tongue might be more common when students are struggling to understand the lessons, particularly those with

lower academic performance.

Lastly, R-squared ranged from 0.12 in Dzongkha Reading Literacy to 0.35 in English Reading Literacy. This means that the variables included in the model explained 12% of the variation in Dzongkha Reading Literacy performance, whereas the model explained 35% of the variation in English Reading Literacy. The mathematical Literacy model explained 27% of the variation. These results suggest that a large proportion of the variation in grade III students' performance remains unexplained as the influence of additional student, family, and school-level factors that affect student performance are not captured in the model.

Table 12.2: Regression analysis results of students' English Reading Literacy, Dzongkha Reading Literacy, and Mathematical Literacy in grade III

Variable	English Reading Literacy		Dzongkha Reading Literacy		Mathematical Literacy	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Intercept	**337.70***	10.15	**281.19***	13.73	**326.83***	9.45
Student factors						
CWD (disability status)	-16.86	11.66	8.56	8.88	-0.91	7.64
Day scholar	-7.93	7.81	-9.40	8.96	-5.33	6.03
ECCD	1.25	2.48	**8.92***	3.09	5.21	2.36
Female	-4.09	2.65	-0.83	2.70	**-13.40***	2.35
Grade repeater	**-14.24***	3.09	-8.34	3.50	**-15.46***	2.39
Missed class because of sickness	-4.43	2.46	0.83	2.63	-2.61	2.51
Other language at home	-2.71	3.30	-4.55	3.82	0.31	2.94
English at home	**17.03***	5.07	-11.05	4.58	5.03	4.79
Student's attitude towards learning	0.19	1.22	-0.74	1.56	-2.50	1.26
Student's values evaluated by teachers	**10.71***	1.58	**14.42***	2.00	**11.17***	1.43
Family factors						
Corporal punishment at home	-0.64	2.05	-1.87	2.10	**-6.20***	2.11
Father's education	**15.27***	2.42	-0.53	2.53	**10.35***	2.24
Family engagement time	-0.75	1.29	-0.18	1.27	-1.44	1.43

Family educational support	**-4.33***	1.30	-1.51	1.71	-1.81	1.22
SES indicator	**12.76***	1.74	1.94	1.70	**8.93***	1.93
School factors						
Bullied at school	-5.14	2.62	0.85	2.41	-4.13	3.02
Classroom environment	1.15	1.43	0.29	1.73	0.94	1.21
Classroom infrastructure	-1.48	1.68	-4.55	2.18	-0.74	1.44
Corporal punishment at school	-9.09	3.65	-1.89	3.28	-0.54	3.38
Public	**-16.17***	4.48	**26.93***	6.59	-6.31	4.15
Teacher checks the student's homework	11.18	5.75	8.16	6.51	9.44	6.18
Teacher uses the student's mother tongue to explain words	-6.92	2.79	-3.76	3.30	**-10.34***	2.62
Urban	**18.91***	4.68	9.15	5.26	**14.70***	4.21
R-squared	**0.35**		**0.12**		**0.27**	

Note: the star (*) in the table indicates statistical significance.

12.3. Results for grade VI students

12.3.1. Student factors associated with achievement

Table 12.3 and Table 12.4 summarise the results from the regression analysis of students' performance in grade VI. After controlling for the other variables in the model, we see that within the student factors, girls performed statistically better than boys by 12 points in English Writing Literacy, 9 points in Dzongkha Reading Literacy, and 15 points in Dzongkha Writing Literacy. In contrast, boys outperformed girls by 11 points in Mathematical Literacy and 9 points in Scientific Literacy, after controlling for the other variables. Gender was not a significant factor for English Reading Literacy.

Grade repetition was negatively associated with achievement. Students who repeated a grade performed lower in all subjects in grade VI compared to students who had never repeated a grade. In Dzongkha Reading Literacy, the difference between students who did not repeat a grade and those who repeated a grade was 10 points, whereas in Scientific Literacy the difference was 21 points, a moderate difference of 0.4 SD.

Students who reported missing classes in the last year due to sickness underperformed in

Dzongkha Reading and Writing Literacy, compared to students who reported never missing classes due to sickness. However, the difference was small, 7 points for both Dzongkha subjects. The language spoken at home was found to be significant for Dzongkha Reading Literacy: students who spoke mostly English at home underperformed by 30 points compared to students who spoke mostly Dzongkha at home, which is a moderate to large difference of more than half a SD. Furthermore, students who mostly spoke Dzongkha at home outperformed students who spoke other languages by 17 points in Dzongkha Reading Literacy, a small to moderate difference. Although students who spoke mostly English at home scored higher in English Reading, Mathematical and Scientific Literacy, compared to students who spoke mostly Dzongkha, these differences were not statistically significant at the $p<0.01$ level.

The teachers' evaluation of student values was also significant for all grade VI subjects. The positive coefficients indicate that students who were rated higher by their teachers on the embodiment of values – such as telling the truth, saying thank you, or studying hard – scored higher compared to students who were rated lower by their teachers.

12.3.2. Family factors associated with achievement

Among the family factors associated with grade VI performance, we found that corporal punishment at home was negatively associated with English Writing Literacy; specifically, students who reported being beaten at home either by their parents or guardians underperformed by 5 points in English Writing Literacy, compared to students who were not beaten at home.

In all subjects except Dzongkha Reading Literacy, higher father's education was associated with better performance. Higher family engagement time was associated with higher scores in English Reading and Writing, Dzongkha Reading, and Scientific Literacy. Specifically, students who reported doing activities with their family more often – such as eating meals together, talking about their problems at school and how they get along with other students, and going to temples and local festivities – outperformed students who do not do those activities with their family, or who do them less frequently.

The family educational support score displayed a significant negative association with performance in all subjects, except for Dzongkha Reading and Writing Literacy. Similar to the findings for grade III students, the results should not, by any means, be interpreted as evidence that more parental involvement negatively affects student performance. Rather, the items included in the educational support variable may tend to score higher when students need more academic support (i.e., when they have lower scores). Family SES was positively associated with better performance in Science, English Reading and Writing, and Mathematical Literacy. This means that students from families with higher SES tend to perform better than those from families with lower SES.

12.3.3. School factors associated with achievement

Among the school factors included in the model, only attending a public school was significantly associated with performance in Dzongkha Reading Literacy. Students who attend public schools outperformed students who attend private schools by 29 points in Dzongkha Reading Literacy, a moderate to large difference. The lack of other significant differences between public and private schools is interesting as it suggests that much of the difference in the mean scores of students in these schools can be explained by other factors, such as family SES or, perhaps, student values. Further research could attempt to uncover exactly which factors are most helpful in explaining the differences in performance by school management type. Lastly, attending an urban school was associated with better performance in English Writing Literacy by 11 points, compared to students attending a rural school.

R-squared ranged from 0.13 in Dzongkha Reading Literacy to 0.32 in English Writing Literacy. This means that the variables included in the model explained 13% of the variation in Dzongkha Reading Literacy performance, whereas the model explained 32% of the variation in English Writing Literacy. R-squared was relatively lower for both subjects in Dzongkha, compared to both subjects in English, which had the higher R-squared. The Mathematical and Scientific Literacy models explained 19% and 22% of the variation, respectively. This means that a large proportion of the variation in grade VI students' performance remains unexplained by the model.

Table 12.3: Regression analysis results of students' English Reading Literacy, English Writing Literacy, and Mathematical Literacy in grade VI

Variable	English Reading Literacy		English Writing Literacy		Mathematical Literacy	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Intercept	**292.51***	10.37	**302.66***	10.19	**302.99***	10.31
Student factors						
CWD (disability status)	-3.02	10.34	5.11	11.24	-16.52	7.54
Day scholar	4.56	2.62	3.37	3.27	0.37	3.16
ECCD	2.71	2.18	3.06	2.17	4.55	2.21
Female	2.94	1.96	**11.65***	1.71	**-11.35***	1.97
Grade repeater	**-18.37***	2.40	**-19.60***	2.44	**-20.08***	2.43
Missed class because of sickness	1.98	1.99	0.94	1.91	-4.43	2.07
Other language at home	-3.42	2.00	-4.09	2.06	-0.48	2.65
English at home	15.19	6.10	0.68	6.99	11.84	7.71

Student's attitude towards learning	1.24	0.92	1.77	0.83	1.36	0.90
Student's values evaluated by teachers	**9.19***	1.00	**9.76***	1.19	**9.95***	1.13
Family factors						
Corporal punishment at home	-3.89	2.08	**-5.39***	2.07	-3.33	1.93
Father's education	**10.18***	1.53	**9.73***	1.61	**6.24***	1.60
Family engagement time	**3.90***	0.91	**3.59***	0.97	2.13	1.22
Family educational support	**-6.39***	0.98	**-5.41***	1.09	**-5.94***	1.29
SES indicator	**10.51***	1.38	**10.00***	1.45	**7.98***	1.42
School factors						
Bullied at school	-3.87	1.98	-3.68	1.77	-1.77	2.11
Classroom environment	2.02	0.86	0.38	0.86	-0.31	0.90
Classroom infrastructure	0.41	1.04	-0.69	1.06	2.45	1.09
Corporal punishment at school	6.27	2.56	4.79	2.65	6.03	3.06
Public	-1.55	6.06	-11.68	6.82	-0.61	5.77
Teacher checks the student's homework	-3.51	6.67	-4.58	5.98	3.32	7.24
Teacher uses the student's mother tongue to explain words	-1.73	2.20	-2.27	2.22	-0.32	2.23
Urban	8.35	3.46	**10.79***	3.72	1.37	3.33
R-squared	**0.30**		**0.32**		**0.19**	

Note: the star (*) in the table indicates statistical significance.

Table 12.4: Regression analysis results of students' Dzongkha Reading Literacy, Dzongkha Writing Literacy, and Scientific Literacy in grade VI

Variable	Dzongkha Reading Literacy		Dzongkha Writing Literacy		Scientific Literacy	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Intercept	**295.45***	10.69	**288.16***	14.15	**292.45***	11.08
Student factors						
CWD (disability status)	-1.35	11.69	-6.32	11.02	-6.51	8.24
Day scholar	-5.21	4.37	-1.82	4.63	1.18	3.59
ECCD	2.07	2.21	2.40	2.36	3.93	2.36
Female	**8.71***	1.95	**15.31***	2.01	**-8.82***	1.99
Grade repeater	**-9.53***	2.97	**-15.30***	2.96	**-21.18***	2.39
Missed class because of sickness	**-7.16***	2.26	**-6.60***	2.32	1.09	2.14
Other language at home	**-16.97***	2.53	-6.76	3.38	5.18	2.28
English at home	**-29.59***	7.22	-18.86	8.79	17.77	6.99
Student's attitude towards learning	0.92	1.08	2.86	1.40	2.06	1.11
Student's values evaluated by teachers	**10.36***	1.39	**10.52***	1.48	**9.53***	1.14
Family factors						
Corporal punishment at home	-4.35	2.05	-4.63	1.87	-3.43	1.96
Father's education	2.35	1.82	**4.69***	1.75	**7.81***	1.54
Family engagement time	**3.59***	1.10	1.39	1.18	**3.36***	1.02
Family educational support	-1.78	1.19	-1.83	1.11	**-5.61***	1.05
SES indicator	-2.31	1.57	-2.07	1.66	**9.14***	1.39
School factors						
Bullied at school	-1.44	2.26	-1.62	2.07	-4.18	1.86
Classroom environment	-0.58	1.28	-0.09	1.18	1.55	0.86
Classroom infrastructure	-1.21	1.34	-0.68	1.46	1.84	1.16
Corporal punishment at	2.52	2.92	2.90	3.15	4.35	2.77

school						
Public	**28.74***	6.13	16.08	6.47	7.17	6.61
Teacher checks the student's homework	-2.52	6.89	5.77	9.68	-4.47	7.76
Teacher uses the student's mother tongue to explain words	-1.67	2.95	-1.74	2.66	-0.03	2.21
Urban	-7.64	3.47	-10.09	4.05	6.22	3.72
R-squared	**0.13**		**0.15**		**0.22**	

Note: the star (*) in the table indicates statistical significance.

12.4. Limitations

The results of the regression analysis should be interpreted with caution. Firstly, the NEA is a cross-sectional study, namely, students are observed at one point in time. Contrary to longitudinal studies, where the same students are observed over multiple time points, cross-sectional data do not allow us to determine the direction of influence between variables (i.e., which factor influenced the other). For example, we cannot establish whether more family educational support increased student achievement, or if lower achievement prompted more family educational support.

Secondly, and related to the first limitation, throughout this report we have analysed correlations, not causation. This means the coefficients in the model indicate how changes in the independent variables are **associated** with changes in performance, but coefficients do not imply, and should not be interpreted as, a change that **causes** student performance to increase or decrease. Whilst cross-sectional and correlational studies provide valuable insights into education systems and the factors associated with student performance, it is important to be aware of their limitations. One way to address this limitation is to identify how many students participated in the NEA in grade III 2021, grade VI 2024, and – in the future – grade IX 2027 using administrative data. If the sample size allows it, around 1000 students, a more robust longitudinal analysis of student performance can be conducted looking at how the values and characteristics of students in grade III are related to educational progression between grade III and grade VI.

A third point to consider is the definition of each independent variable, which is crucial for interpreting the results appropriately. For example, although the results showed that family educational support is negatively associated with student performance, a closer look at the items used in this variable can help us to explain the negative coefficients and prevent us from misinterpretation. Likewise, using the item 'My teacher uses my mother tongue to explain difficult words' may reflect that students are struggling to understand the lessons, rather than indicating regular use of mother tongue as an instructional practice. Perhaps a

further review of the items in the student questionnaire could help clarify whether the items are effectively capturing the intended purpose and construct.

Chapter 13. Comparing performance in grade VI (2024) to grade III (2021)

13.1. Method

To give a rough idea of whether grade VI student performance has improved in each domain since the same cohort were assessed in grade III (2021), this chapter provides basic comparisons of the proportion of each type of item that were answered correctly in each cycle of the NEA. Only English Reading Literacy, Dzongkha Reading Literacy, and Mathematics Literacy are considered – the remaining domains were not assessed in grade III. Furthermore, the focus is on item types that occurred in assessments for both grade III in 2021 and grade VI in 2024.

The process for calculating a percentage correct estimate within each item type is complicated by the fact that different students took different test versions, and so did not all answer the same questions. Thus, the process for calculating the percentage of the maximum score achieved within each item type was as follows:

- For every item, calculate the mean of the scores achieved on that item by the students that attempted it. Note that this mean is weighted using the same student weights as all other analyses. Call this quantity μ_i for the ith item. Since different students answered different questions, these values will be based on different groups of students.
- Record the maximum available score on each item. Call this quantity M_i for the ith item.
- Within each item type, the estimate of the percentage correct is the sum of the item means (μ_i) within the item type divided by the sum of item maxima (M_i) within the item type and multiplied by 100.

In plain language, this means that the 'percentage correct' values shown in the tables in this chapter represent the percentage of the maximum available score on each item that was achieved. As with all other analyses in this report, any items that did not function well, and were excluded after review by experts, are ignored.

It should be noted that the 2024 NEA cycle did not include items in common with the 2021 grade III assessments, which limits the ability to directly compare scale scores and track the learning progress of the same student cohort with precision. Despite this, the approach described provides a practical way to estimate performance trends across the two grades, offering valuable insights into student development in the assessed domains. Future NEA cycles could enhance longitudinal tracking by incorporating common items to enable more direct comparisons.

13.2. Results

Table 13.1 shows the percentage correct statistics for each test as a whole in grade III (2021) and grade VI (2024). Note that, as described above, the analysis combines data across test versions, so the number of items recorded in the table exceeds the number completed by any individual student. The table shows that, overall, the percentage correct statistics are higher for grade VI students than for the same cohort in grade III in English Reading Literacy (an increase from 42% to 59%) and Dzongkha Reading Literacy (from 36% to 44%). In Mathematical Literacy, the same percentage of available marks were achieved each time (37%).

However, it is reasonable to assume that assessments for grade VI were generally more challenging than those targeting grade III. As such, Table 13.1 indicates progress in each of the three domains.

Table 13.1: Overall percentage correct statistics in each domain in grades III (2021) and VI (2024)

Domain	Number of items		Sum of item maxima		Percentage correct	
	Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024
English Reading Literacy	44	44	45	51	42.3	58.6
Dzongkha Reading Literacy	44	43	46	57	35.6	43.7
Mathematical Literacy	45	62	45	64	37.4	37.1

Table 13.2 shows the percentage correct statistics split into the skills recorded against each item[3]. As can be seen, for every skill in English Reading Literacy, the percentage correct was around 20 percentage points higher in 2024 than for the same skill in 2021. This suggests students have made progress across all of the various skills. In contrast, for Dzongkha Reading Literacy, the analysis shows a very big increase in percentage correct for 'Locate information' and 'Reflect on and evaluate text', but less for 'Infer information' and a slight drop for 'Grasp and interpret'. Given the small numbers of items in each skill, these results should be treated with caution, however they may suggest different levels of progress in the different skills. Finally, the table shows that, in Mathematical Literacy, the percentage correct increased for 'Interpreting', decreased for 'Formulating' and remained the same for 'Applying'.

[3] Note that a small number of grade III English Reading Literacy items did not have a skill recorded against them in the item information codebook.

Table 13.2: Percentage correct statistics in each domain in grades III (2021) and VI (2024) by skill being assessed by item

Domain	Skill	Number of items		Sum of item maxima		Percentage correct	
		Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024
English Reading Literacy	Infer	7	10	7	10	40.5	58.9
	Interpret	11	19	12	19	35.1	56.1
	Locate	16	2	16	2	40.2	60.4
	Reflect	3	13	3	20	33.8	60.6
Dzongkha Reading Literacy	Grasp and interpret	14	19	15	24	39.9	39.2
	Infer information	7	9	7	15	34.3	36.3
	Locate information	15	8	15	8	40.8	64.6
	Reflect on and evaluate text	8	7	9	10	21.1	48.7
Mathematical Literacy	Applying	19	35	19	35	38.6	37.5
	Formulating	10	11	10	11	46.2	33.8
	Interpreting	16	16	16	18	30.4	38.4

Table 13.3 shows the results split by whether items in each domain were set in a 'Global', 'Local', or 'Personal' context. Mathematical items could also be 'Intra-mathematical' – that is, purely concerned with the connections between mathematical concepts. Within English and Dzongkha Reading Literacy, the percentage correct statistics increased between grade III (2021) and grade VI (2024) for items in all contexts, with the largest increase seen in English Reading Literacy items set in a global context (from 33% to 62%). Mathematical Literacy showed smaller changes in percentage correct statistics with small increases in items in a 'Global' or 'Local' context, and decreases for those defined as 'Intra-mathematical' or 'Personal'.

Table 13.3: Percentage correct statistics in each domain in grades III (2021) and VI (2024) by context of item

Domain	Context	Number of items		Sum of item maxima		Percentage correct	
		Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024
English Reading Literacy	Global	11	18	11	20	33.0	61.6
	Local	10	22	11	26	39.9	55.6
	Personal	18	4	18	5	40.2	62.2
Dzongkha Reading Literacy	Global	7	10	7	13	36.1	40.6
	Local	22	16	22	22	36.9	47.2
	Personal	15	17	17	22	33.9	42.0
Mathematical Literacy	Global	2	5	2	5	48.2	52.6
	Intra-mathematical	12	23	12	23	40.6	36.7
	Local	23	18	23	18	34.3	41.6
	Personal	8	16	8	18	38.7	28.9

Table 13.4 shows the results split by whether items were constructed response tasks (CRTs) or whether they were multiple-choice questions (MCQs). In English and Dzongkha Reading Literacy, the percentage correct statistics increased between grade III (2021) and grade VI (2024) across items of both response types. This was particularly evident for English CRTs. However, given that there were only 6 items of this type included in the 2021 NEA cycle, this result should be treated with caution. Changes in the percentage correct statistics for Mathematical Literacy were generally on a smaller scale.

Table 13.4: Percentage correct statistics in each domain in grades III (2021) and VI (2024) by response type

Domain	Response type	Number of items		Sum of item maxima		Percentage correct	
		Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024
English Reading Literacy	CRT	6	13	7	20	34.3	60.6
	MCQ	38	31	38	31	43.8	57.3
Dzongkha Reading Literacy	CRT	12	14	14	28	25.2	34.2
	MCQ	32	29	32	29	40.2	52.8
Mathematical Literacy	CRT	7	16	7	18	28.2	20.3
	MCQ	38	46	38	46	39.1	43.7

Items in English and Dzongkha Reading Literacy were also classified according to the type of text that formed the basis of the questions. Table 13.5 shows the percentage correct statistics for items associated with each text type within each of these two domains. The table shows increases in the percentage of available marks that were achieved across every text type in both domains. The smallest increase (from 38% to 42%) was seen in "Transactional" text types in English. However, this finding is based upon a fairly small number of items in each NEA cycle and so should be treated with caution. The biggest change (from 39% to 65%) was for 'Imaginative' text types in English Reading Literacy.

Table 13.5: Percentage correct statistics in English and Dzongkha Reading Literacy in grades III (2021) and VI (2024) by text type of item

Domain	Text type	Number of items		Sum of item maxima		Percentage correct	
		Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024
English Reading Literacy	Imaginative	13	15	13	16	38.5	65.3
	Instructional	5	10	5	12	44.5	63.8
	Transactional	5	7	6	8	38.1	42.1
Dzongkha Reading Literacy	Descriptive	18	17	20	23	35.3	44.6
	Imaginative	3	11	3	15	35.1	48.0

All items in English and Mathematical Literacy were also listed against a specific learning outcome code, as specified in the National Education Assessment Framework (BCSEA, 2019). Moreover, for English Reading Literacy, both grade III and grade VI assessments included some items relating to grade V learning outcomes. Specifically, the grade III test included 18 items related to the learning outcome GV R10 ('Read fiction and non-fiction texts for explicit and implicit meanings, particularly texts dealing with themes of friendship, cooperation, loyalty, and courage among others', BCSEA, 2019, page 44). Meanwhile, the grade VI test included 9 items relating to GV R3. [Note that the description of this learning outcome in grade VI is identical to that of GV R10 in grade III (BCSEA, 2019, page 44).] The grade VI assessments also contained 16 items relating to GV R4 ('Employ textual features such as subtitles, diagrams, charts, and graphs to help them make meaning with non-fiction texts', BCSEA, 2019, page 44).

Table 13.6 shows the percentage correct statistics for items in each assessment in English Reading Literacy targeting grade V learning outcomes only. The first row includes all such items; the second row is restricted to those items targeting the exact same learning outcome ('Read fiction and non-fiction texts for explicit and implicit meanings…'). In either case, the table shows a marked improvement in performance for items of this type. In 2021, grade III students only achieved 37% of the available marks within this learning outcome compared to 61% achieved by grade VI students in 2024. Although different items were used in each test to assess this learning outcome, the results suggest students made substantial progress

in this area over the last three years of learning.

Table 13.6: Percentage correct statistics in English Reading Literacy in grades III (2021) and VI (2024) for items targeting grade V learning outcomes

Domain	Number of items		Sum of item maxima		Percentage correct	
	Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024	Grade III 2021	Grade VI 2024
All grade V learning outcomes	18	23	19	27	37.1	60.5
GV R10/GV R3 only	18	9	19	9	37.1	61.1

13.3. Summary

The design of the 2024 NEA does not allow for straightforward measurement of how much progress grade VI students have made since grade III on a single consistent scale. However, basic descriptive analysis of the percentage of items answered correctly indicates that grade VI students in 2024 answered more items correctly in English and Dzongkha Reading Literacy than was the case in 2021. This was true across all item types whether they were split by skills, context, response type, or text type. This was also true for English when attention was restricted to items targeting grade V learning outcomes.

In Mathematics, Grade VI students answered roughly as many items correctly on the grade VI tests as they had done three years earlier on the grade III tests. Since the grade VI assessments are targeted at older students, it is reasonable to assume that they are more challenging. As such, the fact that students answered at least as many questions correctly as in the previous NEA, indicates that grade VI students have improved their abilities since they were in grade III. This is as we would expect within any education system, but it is nonetheless reassuring to see empirically confirmed.

Chapter 14. School environment and wellbeing

Key findings from this chapter

Physical environment

- Aside from heating and cooling systems, the majority of teachers, principals, and students reported that they had the physical equipment they needed in school.

- Grade III students in 2024 were somewhat less positive about some aspects of the physical environment in their school (such as access to clean drinking water) than was the case in 2021. These opinions were also reflected in the teacher questionnaire. Grade VI students were slightly more positive about the physical environment.

Social environment

- Students, teachers, and principals in both grades were very positive about the social environment in their school and classroom.

Student wellbeing

- Students gave mixed responses regarding their wellbeing, such as whether they felt happy and whether they were ever lonely. Of particular concern was the fact that both grade III and grade VI students were significantly less likely to say they were happy in 2024 than grade III students in 2021.

Favourite and least favourite subjects

- No subject was overwhelmingly more likely to be chosen as a favourite or least favourite subject compared to others.

- The most common reason for a subject being selected as a student's favourite was that they find it interesting.

- The most common reason for a subject being selected as a student's least favourite was that they find it difficult to understand.

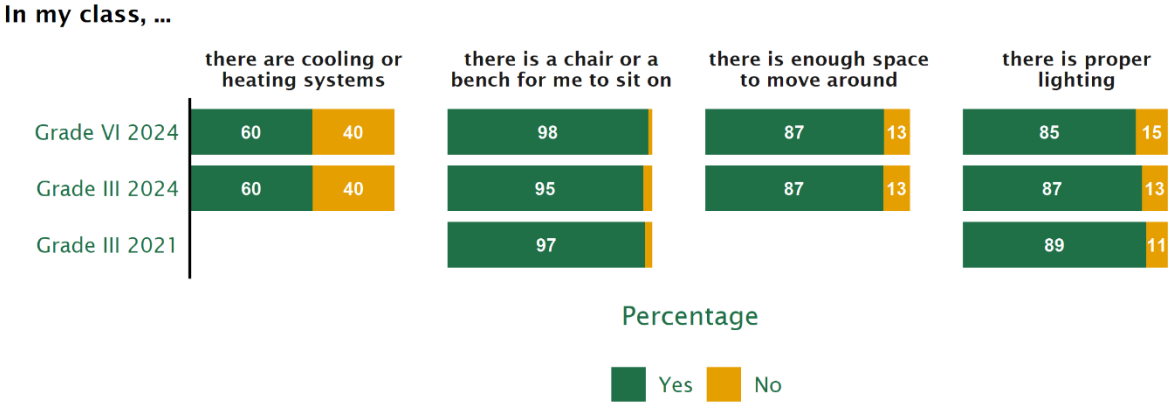
This chapter, and the next few, discuss findings from the teacher and student questionnaires of the NEA 2024. This chapter provides an overview of what students and teachers said about the physical environment within their school and the nature of the school community. Where the same question was asked of the same group in the NEA 2021, we have conducted tests of statistical significance to determine whether there have been any changes. As far as possible, figures will compare responses from the relevant group (students or teachers) in 2021 to those in grade III and grade VI in 2024.

Significance tests were conducted to compare grade III students in both 2021 and 2024, grade VI students in 2024 to grade III students in 2021 (that is, responses of the same cohort of students three years ago), and grade III teachers in 2024 to grade III teachers in 2021.

14.1. Physical environment

Figure 14.1 shows student responses to questions about the physical environment in their classroom. In common with results reported in 2021, nearly all students stated that they had a chair or bench to sit on. The vast majority stated that there was proper lighting and enough space to move around. However, more than 1 in 10 students said this was not the case. In both grade III and grade VI, 60% of students indicated there were cooling or heating systems in their classroom.

Figure 14.1: Student responses regarding the physical environment in their classroom



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Figure 14.2 shows teacher responses to questions about the physical environment in their classrooms. Their responses regarding heating and cooling, and proper lighting, were broadly in line with the views of students, albeit slightly less positive. Specifically, about 80% of teachers stated there was enough lighting and around half said there were heating or cooling facilities. Note that the proportion of grade III teachers saying there was proper lighting was slightly, but significantly, higher in 2024 than 2021. The majority of teachers also agreed that there was 'enough space' and, again, the proportion of grade III teachers

agreeing with this statement was significantly higher in 2024 compared to 2021.

More than 80% of teachers agreed they had 'enough furniture' (students were not asked this question). However, the percentage agreeing that they had 'level-specific furniture' was noticeably lower at 70% and 63% in grades III and VI respectively. In each grade, roughly half of teachers stated they had an interactive board or smart TV.

Figure 14.2: Teacher responses regarding the physical environment in their classrooms

Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results were excluded as these questions were not asked in NEA 2021.

Figure 14.3 shows student responses to questions about the physical environment in their school. If we first consider grade III students in 2024, responses in relation to using clean toilets and the library are similar to 2021. However, responses relating to access to clean drinking water, the playground, whether teachers take care of sick students, and whether the campus is clean were all significantly less positive than 2021. For example, in 2021, 57% of students said they could 'always' get clean drinking water; this percentage was only 47% in 2024. Similarly, whereas 33% of grade III students in 2021 said the campus was always clean, only 24% reported this in 2024.

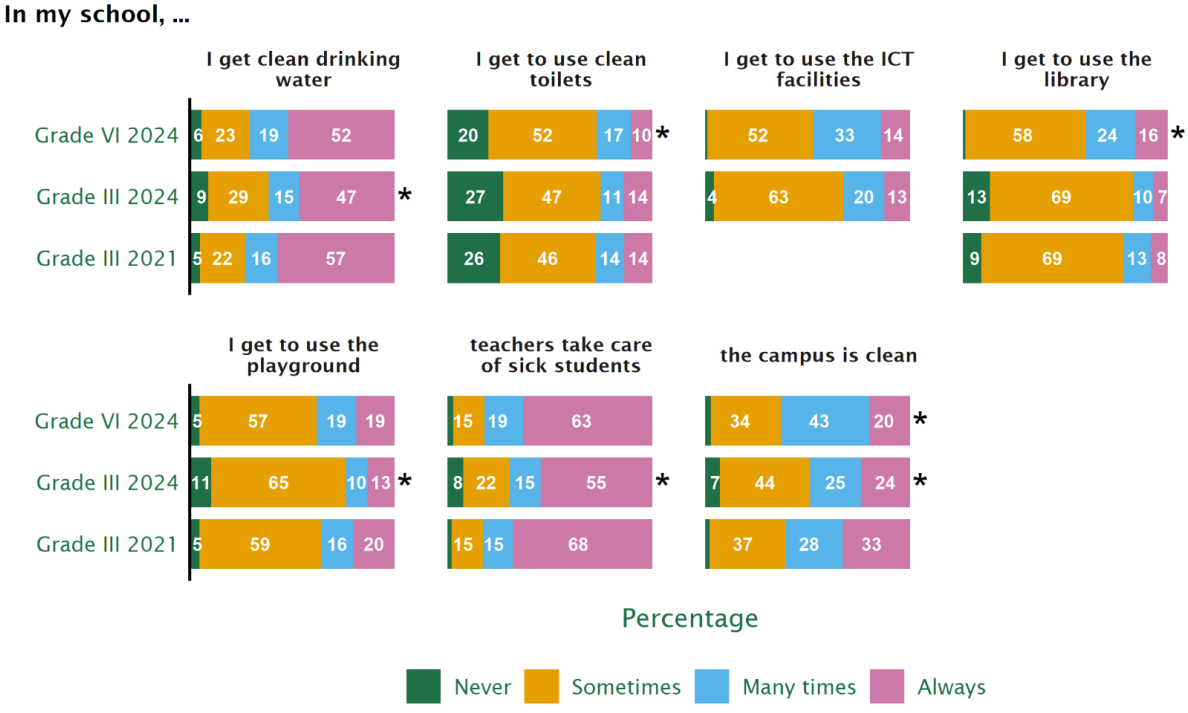
Grade VI students in 2024 answered three questions similarly to those of grade III students in 2021 (that is, the same cohort of students). Specifically, responses relating to clean drinking water, use of the playground, and whether teachers take care of sick students were

not significantly different from grade III responses in 2021. Like students in grade III in 2024, students in grade VI were less likely than grade III in 2021 to say the campus was 'always' clean. That said, they were more likely to say it was 'many times' clean.

Similarly, they were less likely to say they 'always' get to use clean toilets but also less likely to say they 'never' get to use clean toilets. Compared to both sets of grade III students, those in grade VI were significantly more likely to say they get to use the library 'always' or 'many times'.

The survey also asked students in 2024 about their use of Information and Communications Technology (ICT) facilities. The majority of students in both grade III and grade VI said they 'sometimes' got to use these facilities (52% and 63% respectively), with the vast majority of the remainder saying they got to use these facilities 'many times' or 'always'. Note that while this question was phrased slightly differently in 2021 ('I get to use computers'), the pattern of responses was similar.

Figure 14.3: Student responses regarding the physical environment in their school



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Teacher responses to questions about the physical environment in the school are shown in Figure 14.4. Like the earlier student results, Figure 14.4 shows a significant reduction in the extent to which grade III teachers feel students have access to clean drinking water. Whilst the change is not significant, again, like students, teachers report a reduction in the extent to which the campus is kept clean.

For all of the remaining questions, there were no statistically significant differences in grade III results between 2021 and 2024. For the majority of questions, this implies that teachers' ratings of safety and the availability of facilities remained high. Ratings given by grade VI teachers were also generally high. However, ratings regarding access to disability-friendly facilities remain low relative to other questions.

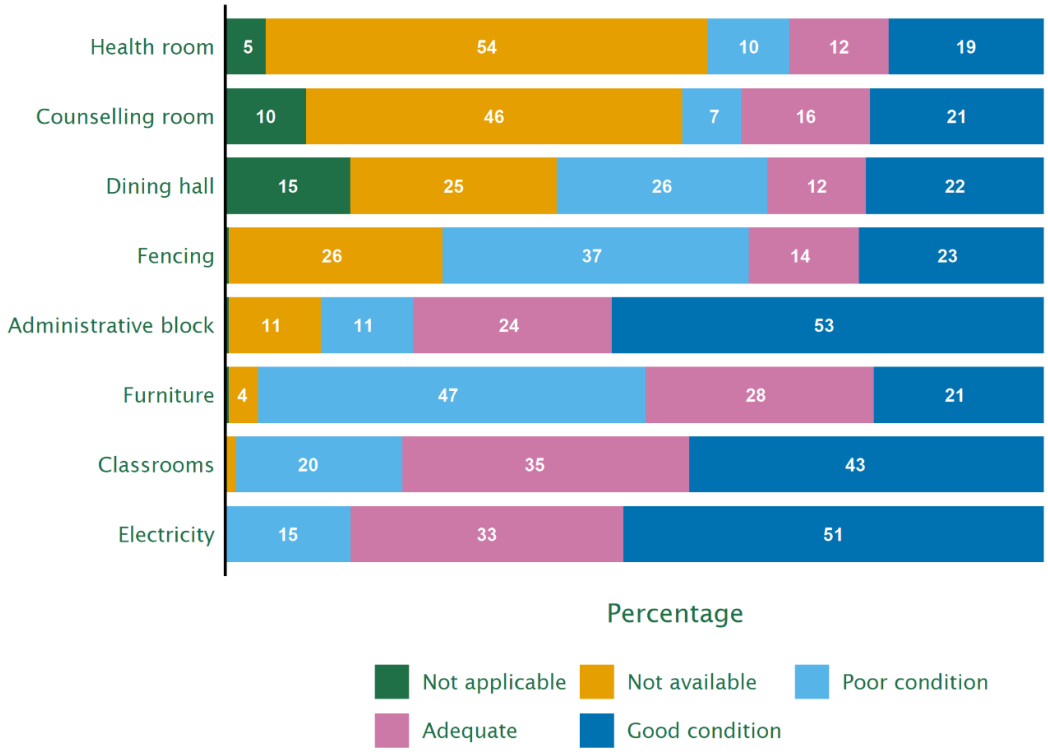
Figure 14.4: Teacher responses regarding the physical environment in their school

Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Principals were also asked about the physical school environment. Figure 14.5, Figure 14.6, and Figure 14.7 show principals' evaluation of different facilities in their schools. Among all of the facilities, most principals reported that electricity (84%), safe drinking water (83%), classrooms (78%), administrative blocks (77%), and toilets for male staff (75%) were in an adequate or good condition at the school. In contrast, furniture (47%), principal's quarters

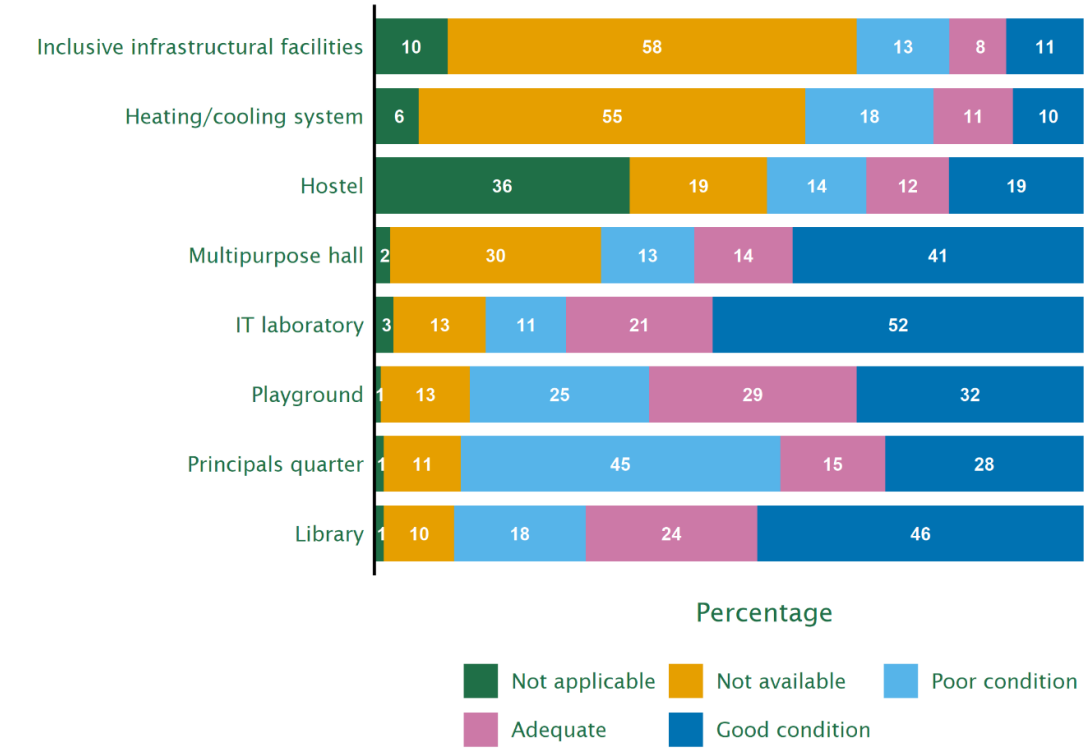
(45%), and toilets for boys (42%) were in a poor condition at the school. Lastly, facilities that were more likely to be reported as not available were inclusive infrastructural facilities (58%), heating or cooling systems (55%), health rooms (54%), and counselling rooms (46%).

Figure 14.5: Principal responses regarding the availability and condition of facilities in their school (I)



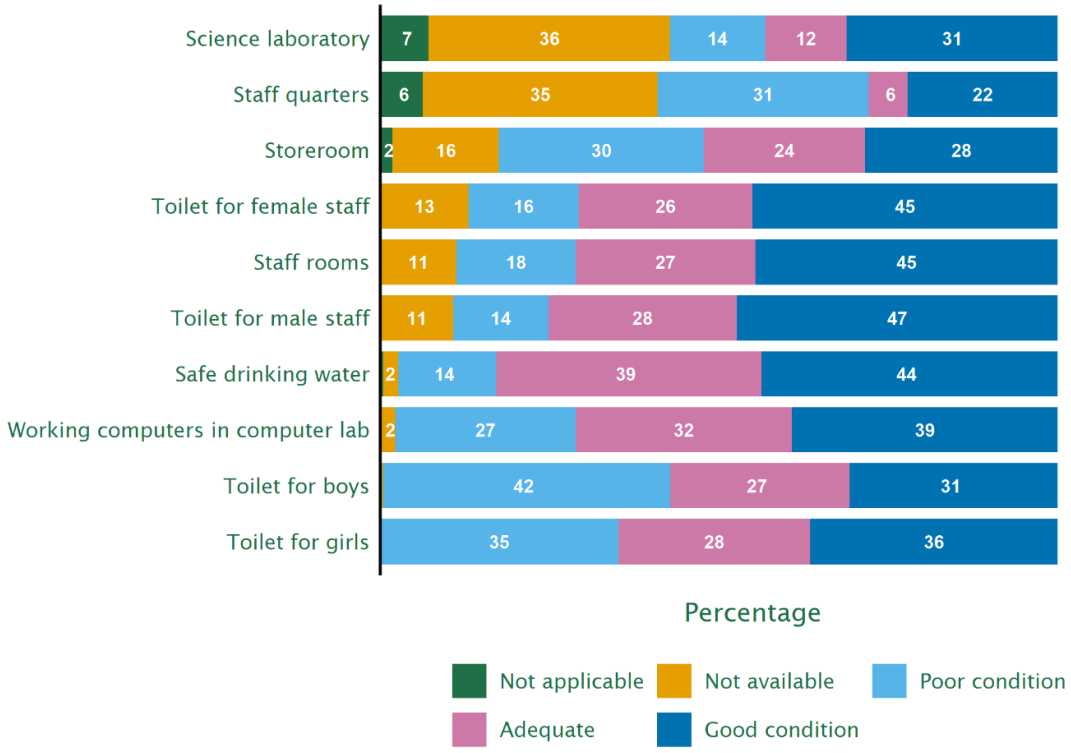
Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 14.6: Principal responses regarding the availability and condition of facilities in their school (II)



Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 14.7: Principal responses regarding the availability and condition of facilities in their school (III)

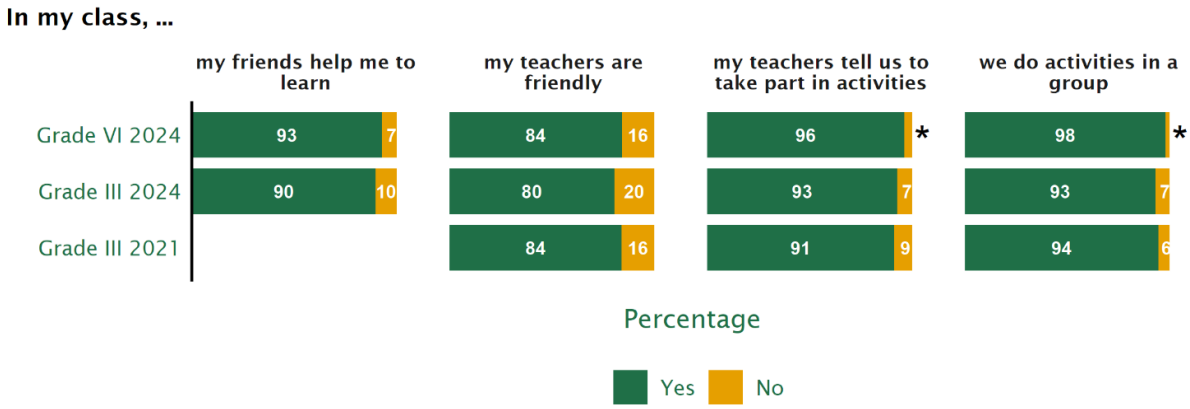


Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

14.2. Social environment

Figure 14.8 shows student views on the social environment in their classroom. The vast majority of students responded positively, with at least 90% agreeing that their friends help them to learn, that they are told to take part in activities, and that they do these activities in a group. In addition, at least 80% of students in each grade agreed that their teachers are friendly. The only significant differences from grade III responses in 2021 were that even more grade VI students agreed that their teacher told them to take part in activities and that they did activities in a group (96% and 98% of grade VI students in 2024 compared to 91% and 94% of grade III students in 2021).

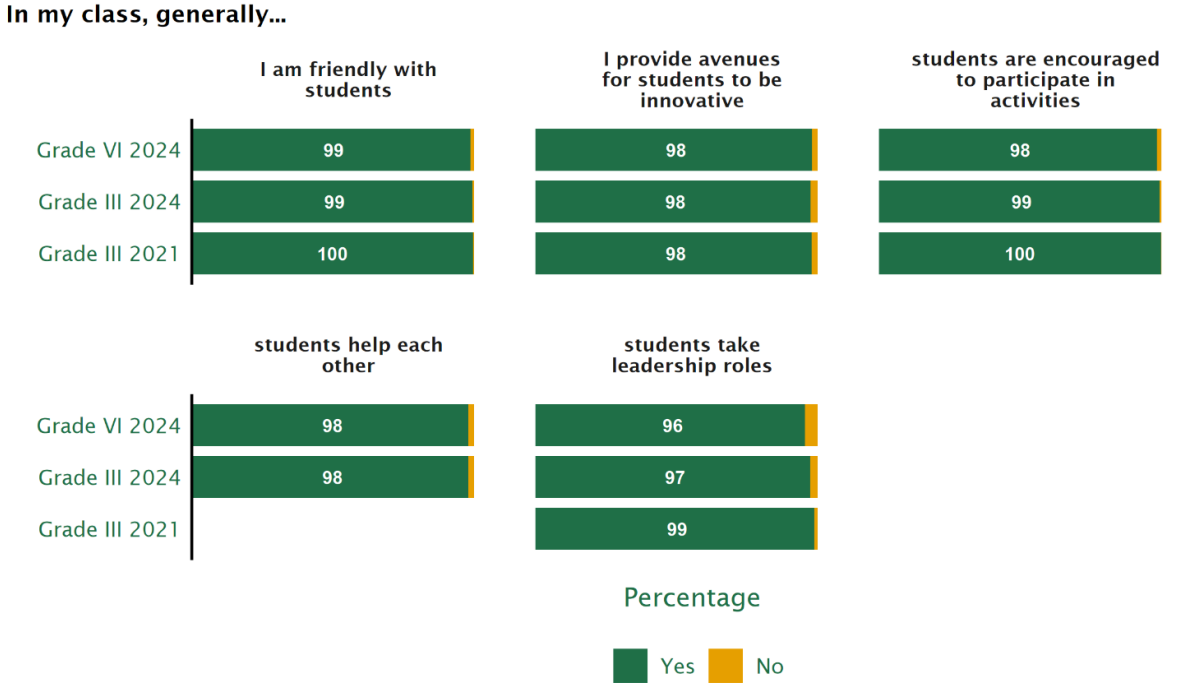
Figure 14.8: Student responses regarding the social environment in their classroom



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Teacher responses to questions about the social environment in their classrooms are shown in Figure 14.9. In common with the results reported in 2021, nearly all teachers indicated that they are friendly with students, that students are encouraged to participate in activities, and that students help each other – teachers were even more positive about these aspects of school life than students. In addition, nearly all teachers agreed that they provide avenues for students to be innovative and to take leadership roles.

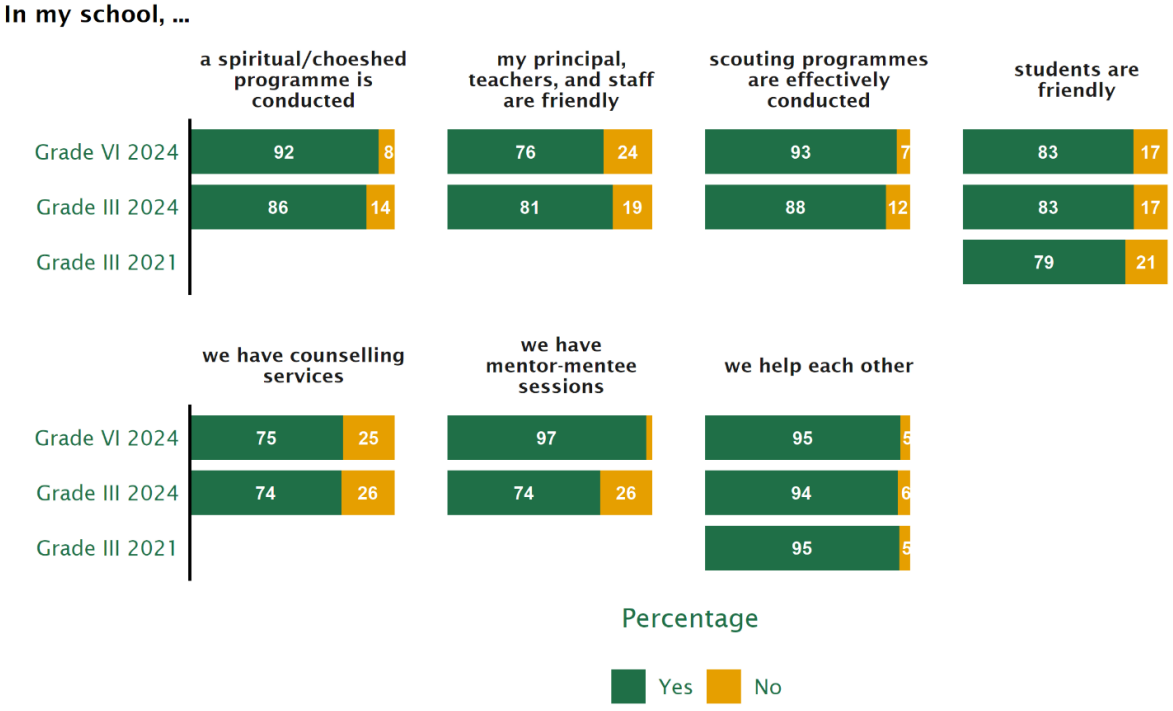
Figure 14.9: Teacher responses regarding the social environment in their classrooms



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Student responses to questions about the social environment in their school more widely are shown in Figure 14.10. Their responses to all questions were positive. In particular, and in common with results in 2021, nearly all students in both grade III and grade VI in 2024 agreed that 'In my school, we help each other'. Around 90% of students in each grade agreed that 'scouting programmes are effectively conducted' and that 'a spiritual/choeshed programme is conducted', although the percentage stating this was slightly higher in grade VI in each case. Between 74% and 83% of students agreed with each of the statements 'my principal, teachers, and staff are friendly', 'students are friendly', and 'we have counselling services'. In contrast to other questions, the question about whether students have mentor-mentee sessions prompted very different responses in grade VI and grade III. In grade VI, nearly all students agreed with this statement compared to around three-quarters of students in grade III.

Figure 14.10: Student responses regarding the social environment in their school

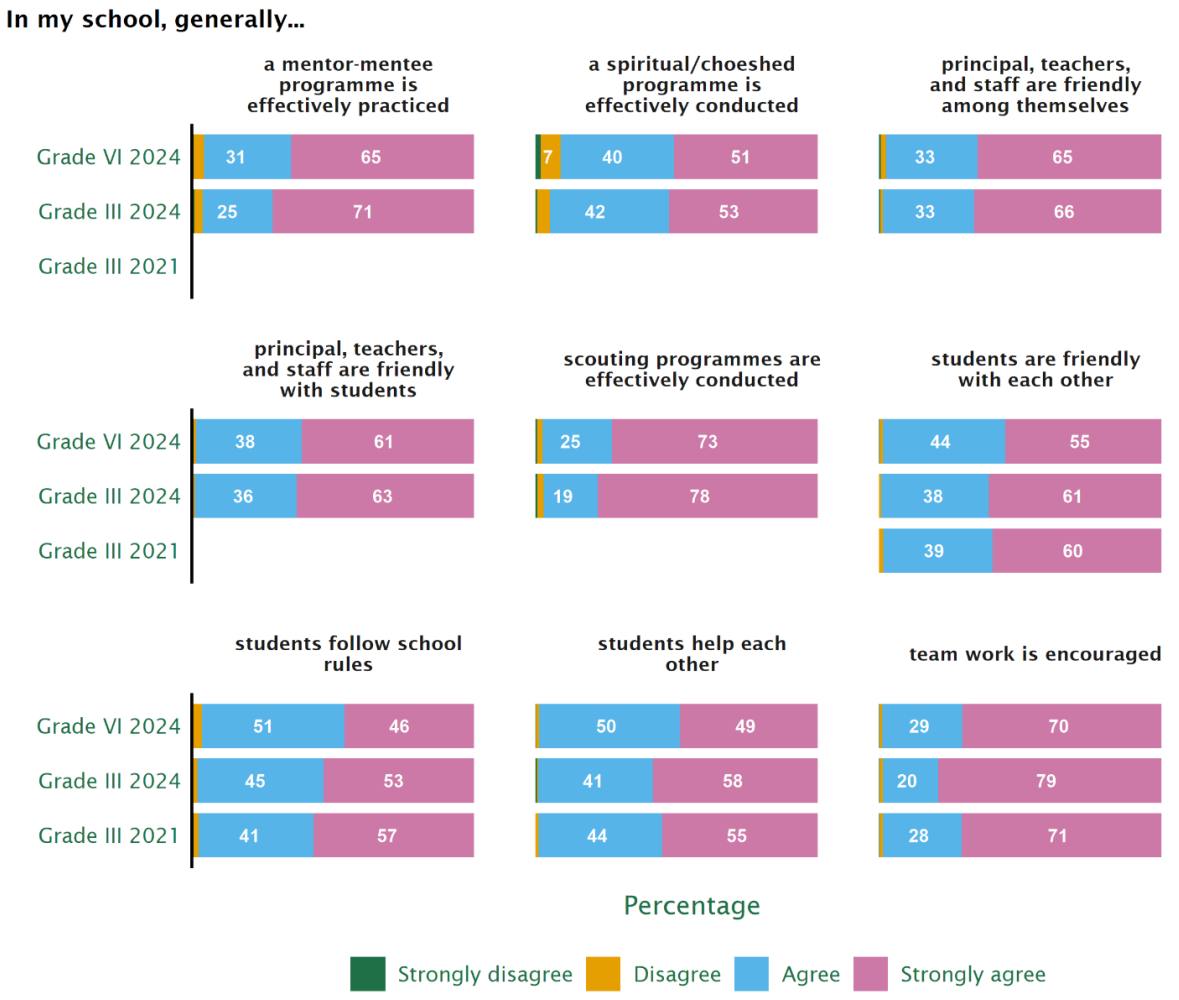


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Teacher responses to questions about the social environment in their school more widely are shown in Figure 14.11 (although on a scale from 'strongly Disagree' to 'strongly Agree'). Like students, teachers were also very positive about the social environment in their school. Where comparisons with 2021 were possible, no significant differences were identified. Furthermore, there were no large differences between grade III and grade VI teachers. In addition to the questions asked of students, teachers strongly agreed that the 'principal,

teachers, and staff are friendly among themselves', that 'students follow school rules', and that 'team work is encouraged'.

Figure 14.11: Teacher responses regarding the social environment in their school



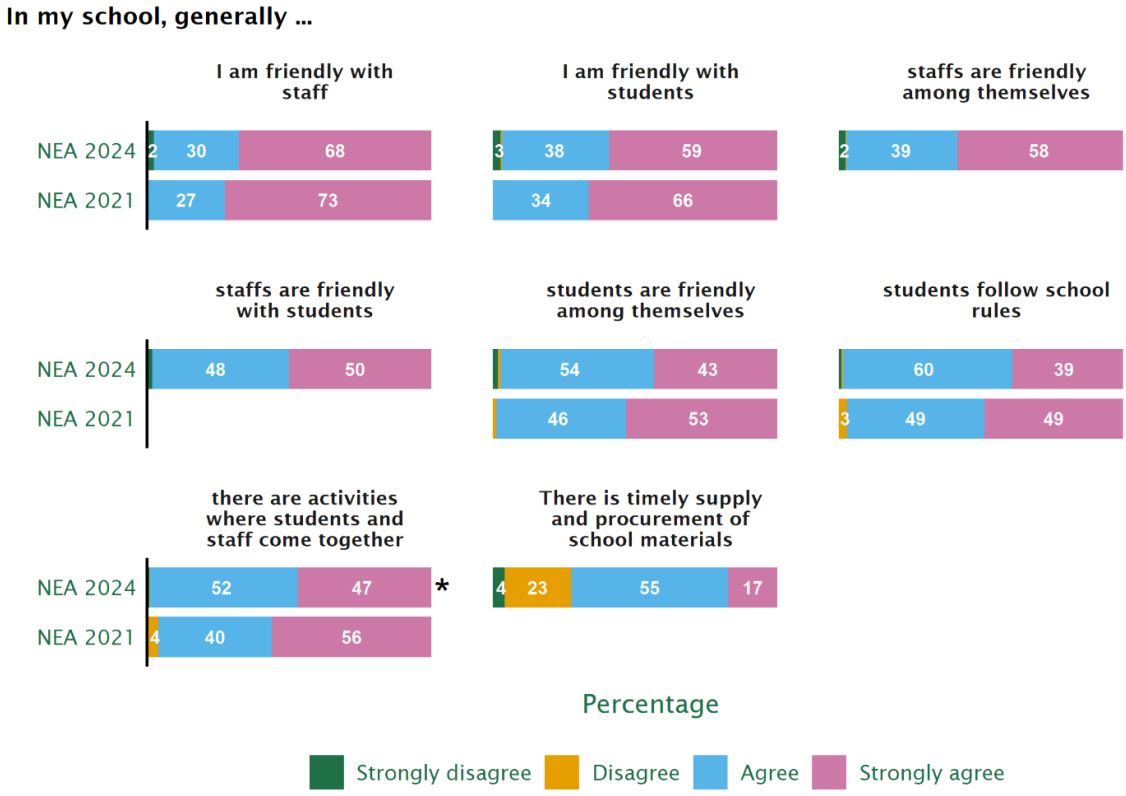
Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results were excluded as these questions were not asked in NEA 2021 or the questions have noticeablely changed.

Figure 14.12 summarises principals' responses to questions about the social environment in their schools. Like students and teachers, principals were very positive about their school's social environment. The majority of principals agreed or strongly agreed that they are friendly with the students and staff in their school. They also agreed that staff and students are friendly with each other. Nevertheless, 27% of principals disagreed or strongly disagreed with the statement 'there is timely supply and procurement of school materials'.

Overall, compared to the NEA 2021, principals' perceptions of the school environment had not changed significantly, except for the statement 'there are activities where students

and staff come together': 47% of principals strongly agreed with this statement in 2024, whereas this figure was 56% in 2021.

Figure 14.12: Principal responses regarding the social environment in their school



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

14.3. Student wellbeing

Figure 14.13 shows student responses to a number of questions about their wellbeing. In every case where comparison with grade III students in 2021 was possible, grade VI students in 2024 displayed significantly different response patterns. Some of these changes were positive, and specifically the following:

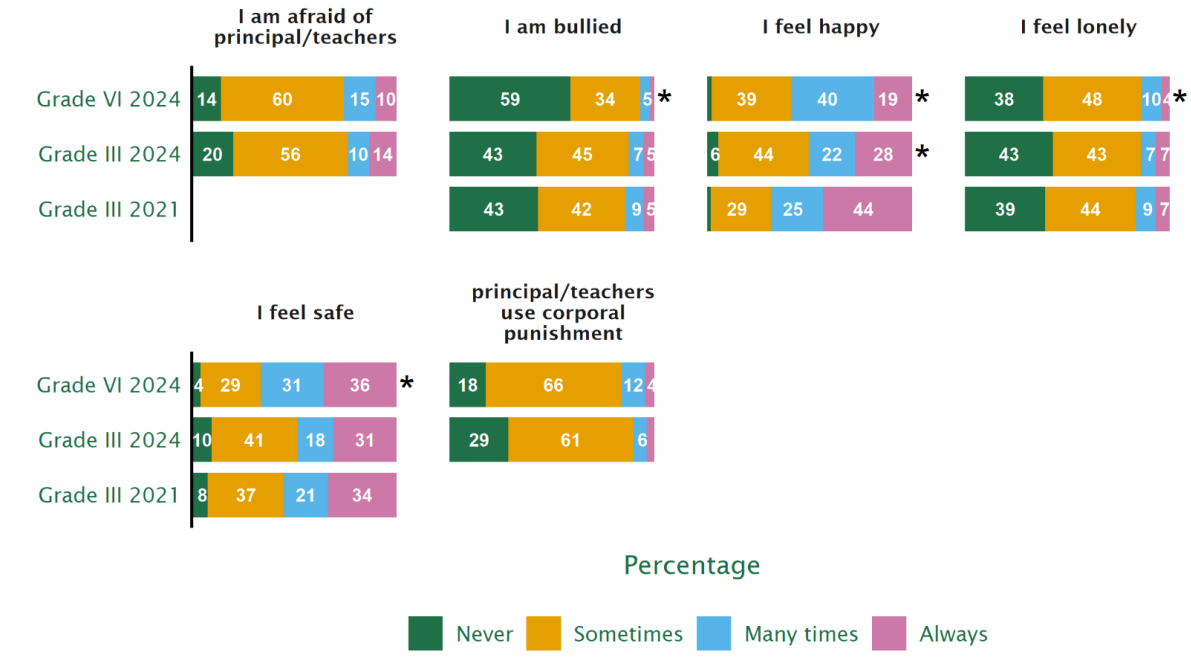
- Compared to grade III students in general, grade VI student were more likely to say they were 'never' bullied. In contrast, more than half of grade III students (in both 2021 and 2024) said they were bullied at least some of the time.
- Compared to grade III students in general, grade VI students were more likely to say they feel safe 'always' or 'many times'. In contrast, only around half of grade III students (in both 2021 and 2024) said this.
- Compared to grade III students in 2021, grade VI students in 2024 were less likely

to say they feel lonely 'always' or 'many times'.

In contrast to the positive results above, students in grade VI in 2024 were significantly less likely to say they feel happy 'always' or 'many times' compared to grade III students in 2021. Grade III students in 2024 displayed even less positive responses, with only half saying they feel happy this often.

In both grade III and grade VI, the majority of students stated that they are 'sometimes' afraid of the principal or teachers, and that the principal or teachers 'sometimes' use corporal punishment. Although the wording of these questions was somewhat different in 2021 (with separate questions about the different types of staff), the results were broadly similar.

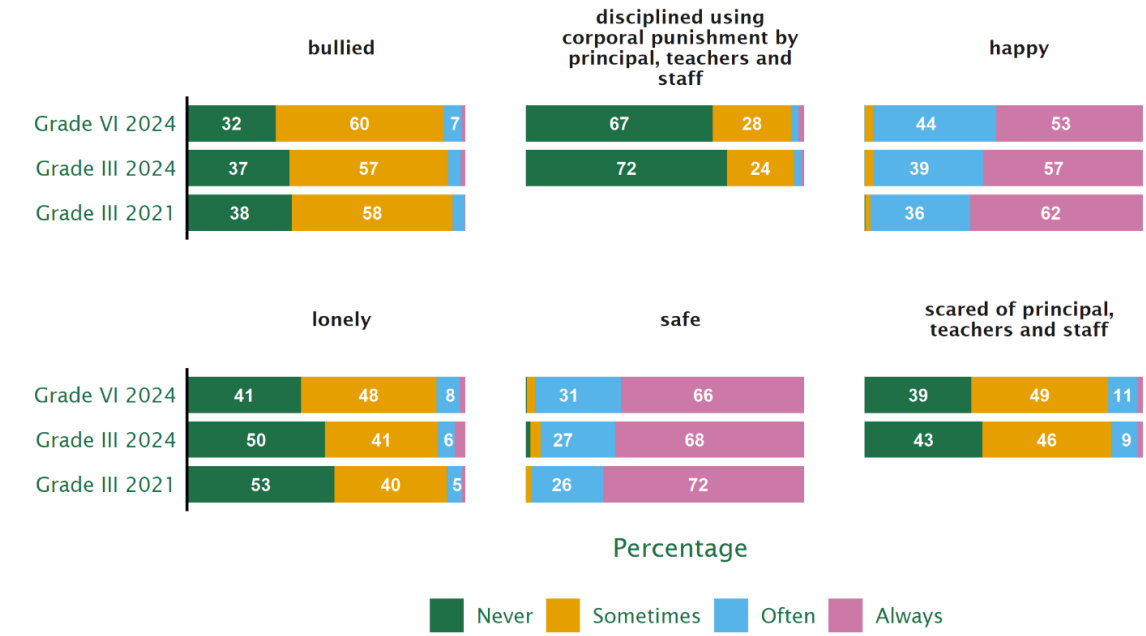
Figure 14.13: Student responses regarding their wellbeing at school



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

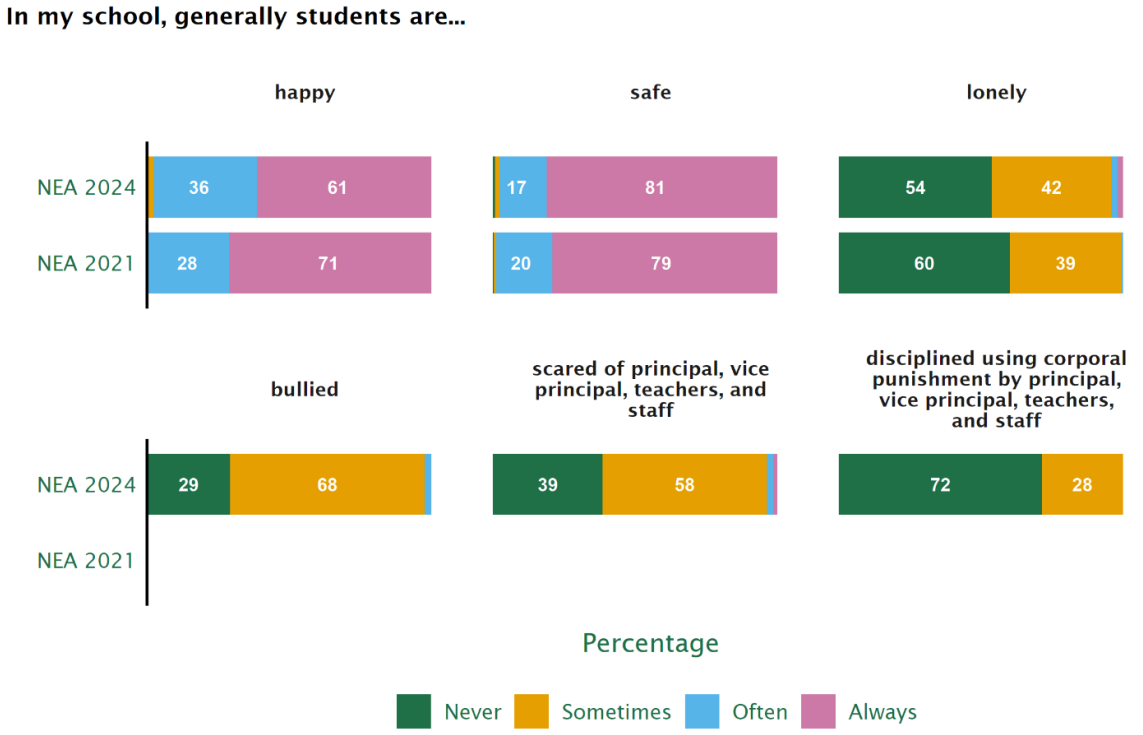
As shown in Figure 14.14 and Figure 14.15, teachers and principals were far more positive about student wellbeing than the students themselves, with teachers and principals overwhelmingly indicating that students were safe and happy. When answering these questions, grade III teachers in 2024 reported no significantly different responses to those given in 2021. Teachers and principals were much more likely than students to say that students were 'never' scared of staff or disciplined using corporal punishment. In contrast, teacher ratings about how often students were bullied or felt lonely was closer to the responses given by the students themselves.

Figure 14.14: Teacher responses regarding student wellbeing at school



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Figure 14.15: Principal responses regarding student wellbeing at school



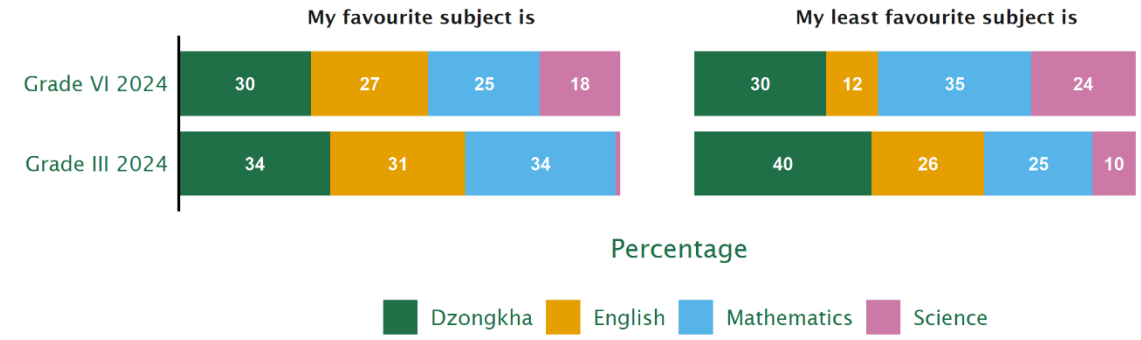
Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

14.4. Favourite and least favourite subjects

As might be expected, different students have different favourite subjects. Students in grade III and grade VI were asked which of Dzongkha, English, Mathematics, and Science was their favourite and least favourite subject, and the results are shown in Figure 14.16. In grade III, students were very unlikely to select science as their favourite subject, but roughly equally likely to select any other subject. This is a change from 2021 where, although the format of the question was different (in that students could not select 'Science'), 41% selected Mathematics as their favourite subject and only 26% selected Dzongkha. In terms of their least favourite subject, grade III students were more likely to select Dzongkha than the other subjects. This result is similar to 2021, where 44% of students selected Dzongkha as their least favourite subject.

Grade VI students in 2024 were most likely to select Dzongkha as their favourite subject. However, the percentages selecting English and Mathematics as their favourite subject were only slightly lower, and 18% of students selected Science. Only a small minority of students (12%) selected English as their least favourite subject, with large percentages selecting Dzongkha, Mathematics, and Science (30%, 35%, and 24% respectively).

Figure 14.16: Students' most and least favourite subjects

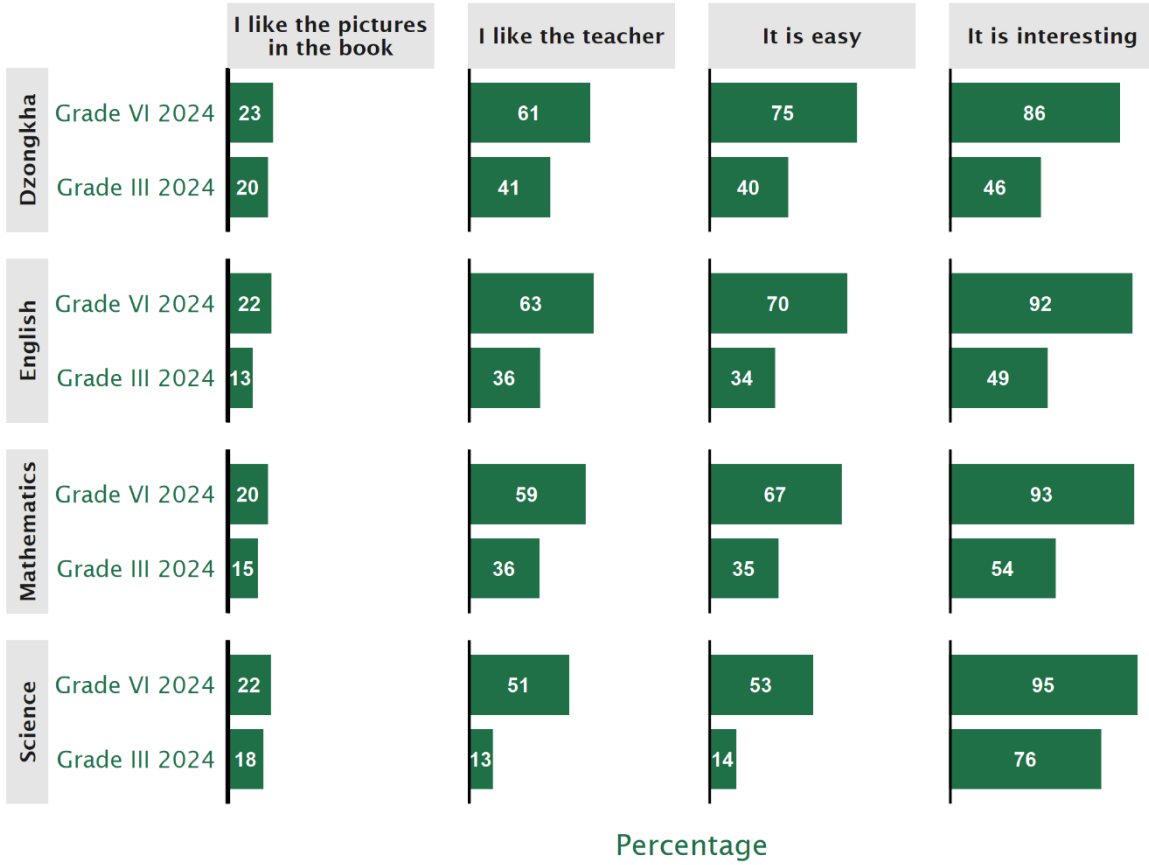


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Results from NEA 2021 are excluded as Science was not given as an option which may affect comparability of results between cycles.

Details of the reasons students gave about why subjects were their favourite and least favourite are shown in Figure 14.17 and Figure 14.18. Students were allowed to provide more than one reason and grade VI students were generally more likely to select each reason for each subject. In general, students' most common reason for choosing their favourite subject was that 'It is interesting' and the least common reason was that they 'like the pictures in the book'. That a subject is 'easy' and that they 'like the teacher' were also both commonly given reasons about why a subject was their favourite – particularly in grade VI.

By far the most common reason students gave as to why a subject was their least favourite was that 'It is difficult to understand'. This was true across all subjects and in both grades.

Figure 14.17: Students' reasons for selecting their favourite subject



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Results from NEA 2021 are excluded as Science was not given as an option which may affect comparability of results between cycles.

Figure 14.18: Students' reasons for selecting their least favourite subject

Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Results from NEA 2021 are excluded as Science was not given as an option which may affect comparability of results between cycles.

Chapter 15. Students' lives outside school

Key findings from this chapter

Student activities outside school

- Students display a range of good habits outside school, with both reading and writing being very common activities for both grades.
- There have been significant reductions since 2021 in the extent to which grade III students say they do self-study and play outdoor games.
- Whilst many grade III and VI students are involved in a range of chores at home, there have been significant reductions since 2021 in the extent of grade III students' involvement in activities such as washing clothes and sweeping the floor.
- On average, around 20% of students in grades III and VI spent more than two hours per day playing digital games or using electronic devices such as mobile phones. Additionally, about 40% of grade VI students and just over 30% of grade III students reported spending at least one hour per day on social media.

Family life

- Most students eat meals with their family several times a week and talk about various aspects of school with them. However, since 2021, the frequency of these conversations has significantly declined for grade III students.
- The vast majority of students receive a range of different types of educational support from their families.
- Student wellbeing at home was very similar compared to levels reported in 2021.

Illness

- The majority of students have missed classes due to illness over the past year.

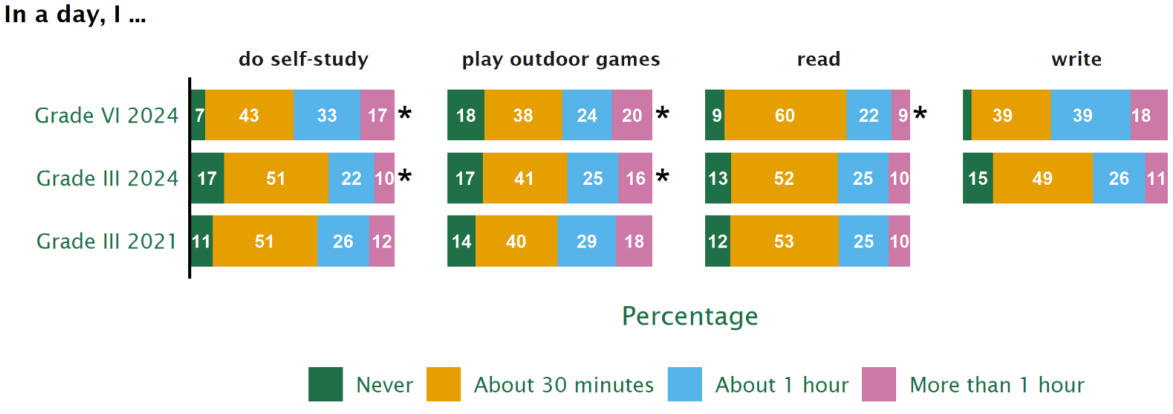
Whilst the previous chapter explored what students said about the environment inside their school, this chapter explores their activities, social (family) environment, and wellbeing outside of school. Once again, where possible, we have used significance testing to compare the responses of students in grades III and VI in 2024 to the responses of grade III students in 2021.

15.1. Student activities outside school

The student questionnaire asked about the activities students do outside of school. Figure 15.1 shows how much time students reported spending on a number of activities each day. With the exception of the extent to which grade III students 'read', which showed nearly identical results between 2021 and 2024, there have been a number of significant changes since 2021. Compared to grade III students in 2021, those in 2024 reported spending less time doing self-study or playing outdoor games. Specifically, fewer students stated they spend 'more than 1 hour' on these activities and a higher percentage said they 'never' do these activities. In contrast, grade VI students in 2024 reported spending significantly more time on self-study than those in grade III in 2021. Their pattern of responses for playing outdoor games was also significantly different, but displayed an increase in the percentage of students at both ends of the scale. That is, there was both a higher percentage of students saying they 'never' play outdoor games and a higher percentage saying they spend 'more than 1 hour' on this each day.

Students in 2024 were also asked about how much time they spent writing each day. In both grades III and VI (and particularly grade VI), they reported spending slightly more time writing than reading. In particular, over half of grade VI students (57%) said they spend 'about 1 hour' or 'more than 1 hour' writing each day compared to only 31% when asked about reading.

Figure 15.1: Students' daily activities



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Students were not asked about the time they spent writing in NEA 2021.

As shown in Figure 15.2, the questionnaire also asked about students' involvement in chores, as well as prayer and meditation. The activities that students were most likely to report doing at least 'sometimes' were cooking food, sweeping the floor, and washing the plates, and the least likely were collecting firewood and looking after pets and livestock. Compared to grade III students in 2021, there were significant reductions in the amount of time:

- grade III and grade VI students in 2024 said they spent collecting firewood, gardening, or looking after a younger sibling
- grade III students in 2024 said they spent cooking food, sweeping the floor, washing clothes, or washing the plates.

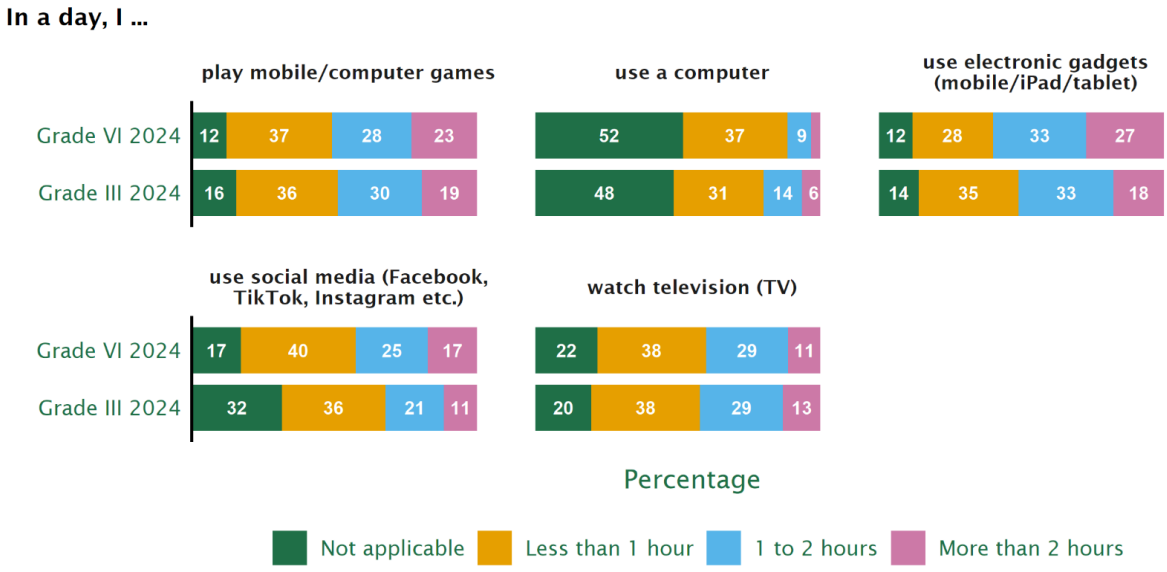
To put this another way, for every chore where data was collected across surveys, grade III students were less likely to spend time doing it in 2024 than 2021. For the latter set of activities, changes between grade III in 2021 and grade VI in 2024 were more complex. For example, when it comes to cooking food, grade VI students were less likely (than grade III in 2021) to say they 'always' do this, but also less likely to say they 'never' do this.

Figure 15.2: Students' involvement in chores at home

Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability, or because the questions were not asked in 2021.

The questionnaire also asked students about daily activities that involved viewing material on an electronic screen such as a computer, phone, or TV (Figure 15.3). The format of questions changed between 2021 and 2024, meaning that direct comparisons are not possible. When looking at activities done for at least 2 hours a day, grade III students were most likely to 'play mobile/computer games' (19%), followed by 'use electronic gadgets' (18%), 'watch television' (13%), 'use social media' (11%), and 'use a computer' (6%). The ranking of activities in grade VI was slightly different: most likely was 'use electronic gadgets' (27%), followed by 'play mobile/computer games' (23%), 'use social media' (17%), 'watch television' (11%), and 'use a computer', which only 2% of students reported doing for more than 2 hours a day. Over 30% of grade III students and over 40% of grade VI students reported using social media for at least an hour each day.

Figure 15.3: Students' daily screen time



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Results from NEA 2021 are excluded due to noticeable wording changes and changes in response options in NEA 2024 that may affect comparability.

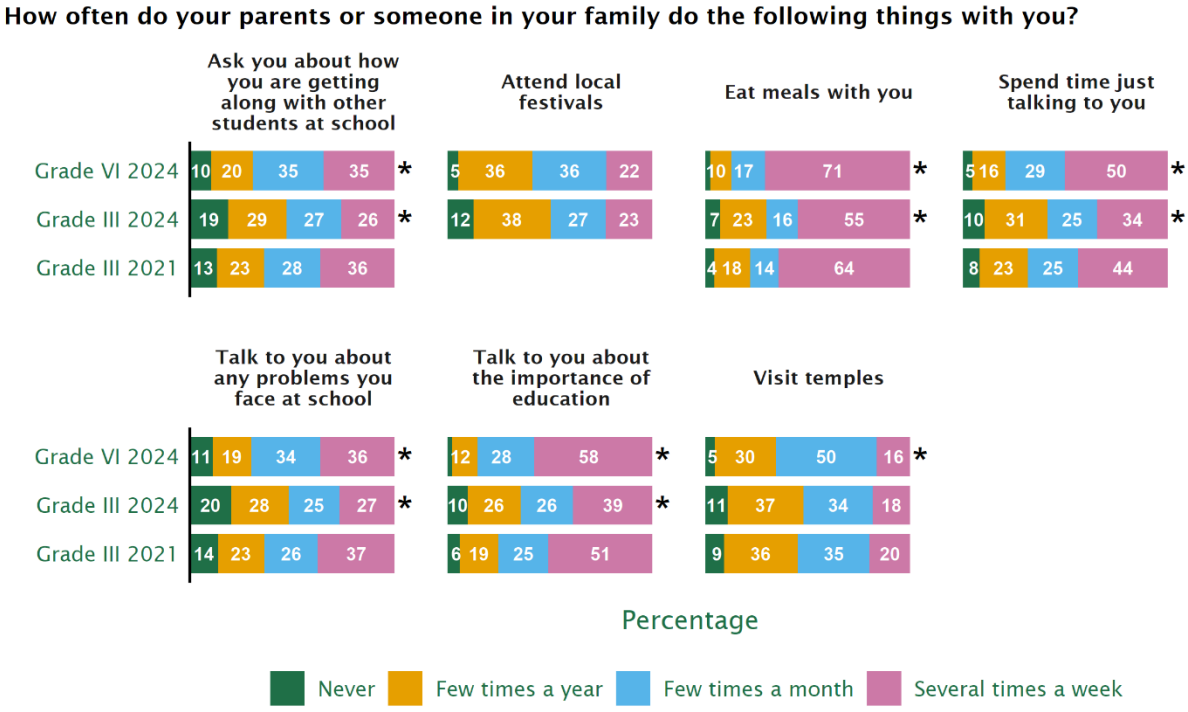
15.2. Family life

The questionnaire also asked students about the kinds of things they do with their parents or family (Figure 15.4). In 2024, in both grade III and grade VI, the interactions that students most commonly reported occurring several times a week are eating meals, spending time just talking, and talking about the importance of education. Visiting temples, attending local festivals, asking about how students are getting along with others at school, and talking about problems at school were less commonly reported. However, the percentage of students saying these interactions 'never' happened was generally very small.

Compared to 2021 grade III students, grade III students in 2024 reported significantly reduced levels of eating meals with family or spending time talking to them (whether about education, how they are getting on at school, problems at school, or just talking in general). In contrast, in comparison to 2021 grade III students, grade VI students reported spending increased amounts of time on most of these activities, as well as in terms of the extent to which they 'Visit temples'. Sometimes this is seen in the increased percentage of students saying something happens 'several times a week' (e.g., 'Eat meals with you', 'Spend time just talking to you' or 'Talk to you about the importance of education'). For other questions (e.g., 'Talk to you about any problems you face at school', 'Ask you about how you are getting along with other students at school', or 'Visit temples') this is seen in the increased percentage of students saying something happens a 'few times a month' and a decreased percentage saying 'never'.

Students in 2024 were also asked how often they attended local festivals with parents or family. Fifty percent of grade III students said they did this at least a few times a month, compared to 58% of grade VI students.

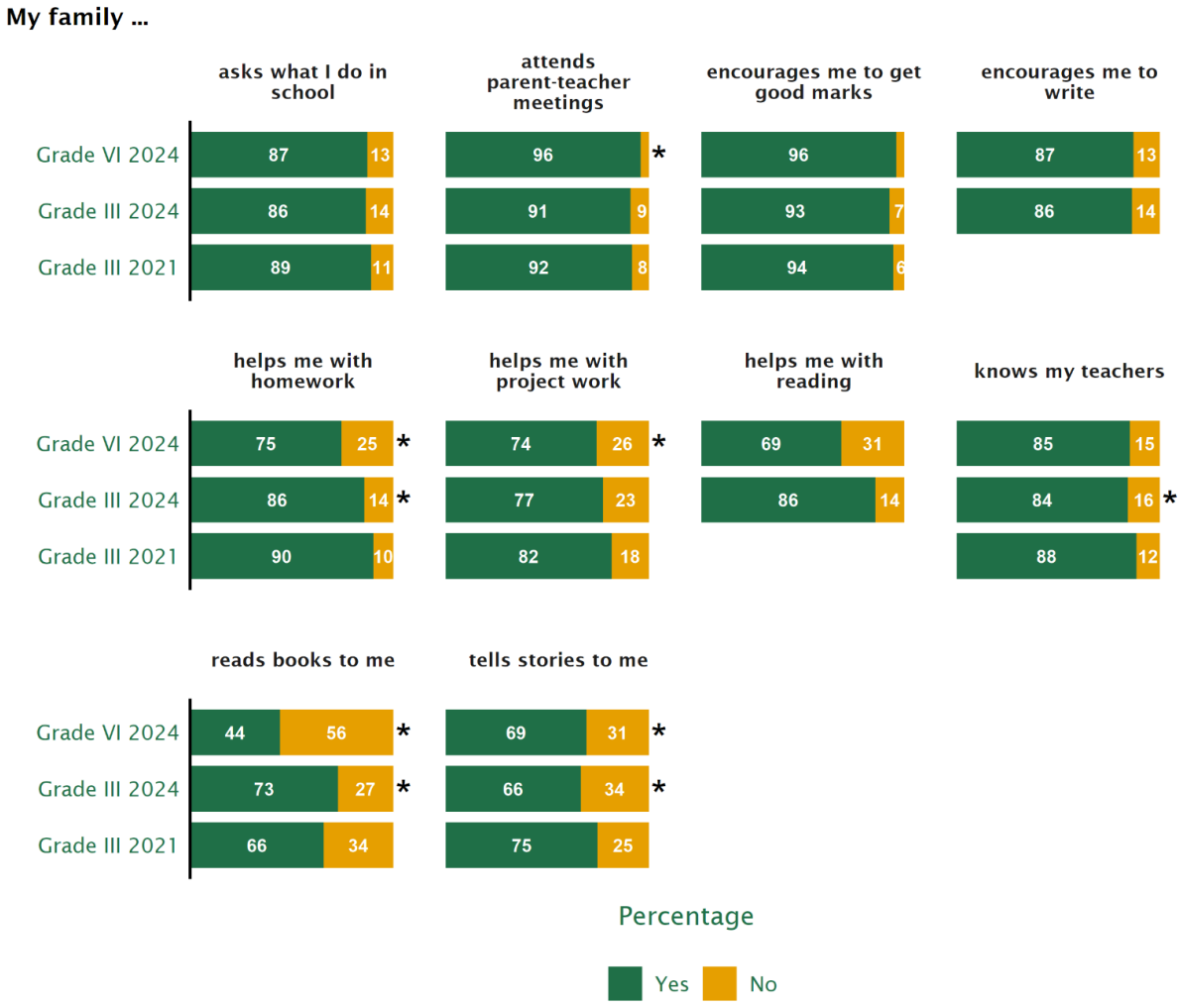
Figure 15.4: Students' time with parents and family



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Figure 15.5 shows student responses to more detailed questions about the educational support they receive from their family. In common with results in 2021, the vast majority of students (that is, more than 80%) agreed that their family 'asks what I do in school', 'attends parent-teacher meetings', 'encourages me to get good marks', 'encourages me to write', and 'knows my teachers'. The percentage of grade VI students saying their family attends parent-teacher meetings was significantly higher than for grade III students in 2021 (96% compared to 92%). On the other hand, the percentage of grade III students saying their family 'knows my teachers' was slightly (but significantly) lower in 2024 than 2021 (84% compared to 88%).

Figure 15.5: Educational support for students from their family



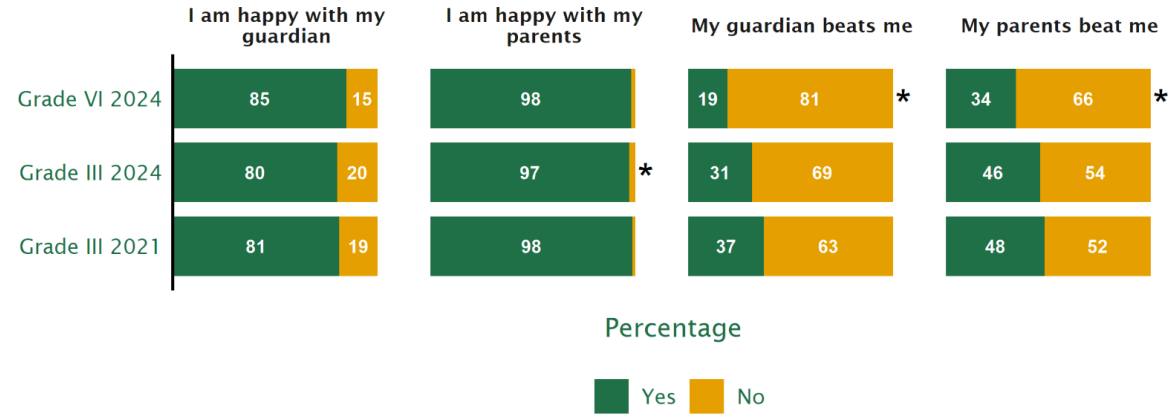
Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some results from NEA 2021 are not shown here as students were not asked these questions in 2021.

Students from both grades in 2024 were significantly less likely to say their family 'helps me with homework' compared to 2021 (75% and 86% compared to 90%). Similarly, students in grade VI were significantly less likely than grade III students in 2021 to say their family 'helps me with project work' (74% compared to 82%). Grade III students in 2024 were very likely to say their family 'helps me with reading' (86%), but this was less prevalent in grade VI (69%).

Within each grade in each year, students were generally least likely to say their family 'reads books to me' and 'tells stories to me'. Both types of activity were reported by a significantly lower percentage of grade VI students in 2024 than grade III students in 2021, with one exception: perhaps somewhat confusingly, grade III students were significantly more likely to say their family 'reads books to me' in 2024 compared to 2021, but less likely to say their family 'tells stories to me'.

Figure 15.6 provides details of students' responses to questions about their wellbeing at home. For those students that live with their parents, nearly all (at least 97%) said they were happy with their parents. Technically, this percentage was significantly lower for grade III students in 2024 compared to grade III students in 2021, but only by a very small amount. The majority (at least 80%) of students who live with their guardian said they were happy with them. In common with results in 2021, just under half of grade III students indicated that their parents beat them and, for those living with a guardian, around a third said their guardian beat them. The percentage of grade VI students saying they were beaten was significantly lower (34% said their parents beat them, and 19% said their guardian beat them).

Figure 15.6: Student wellbeing at home

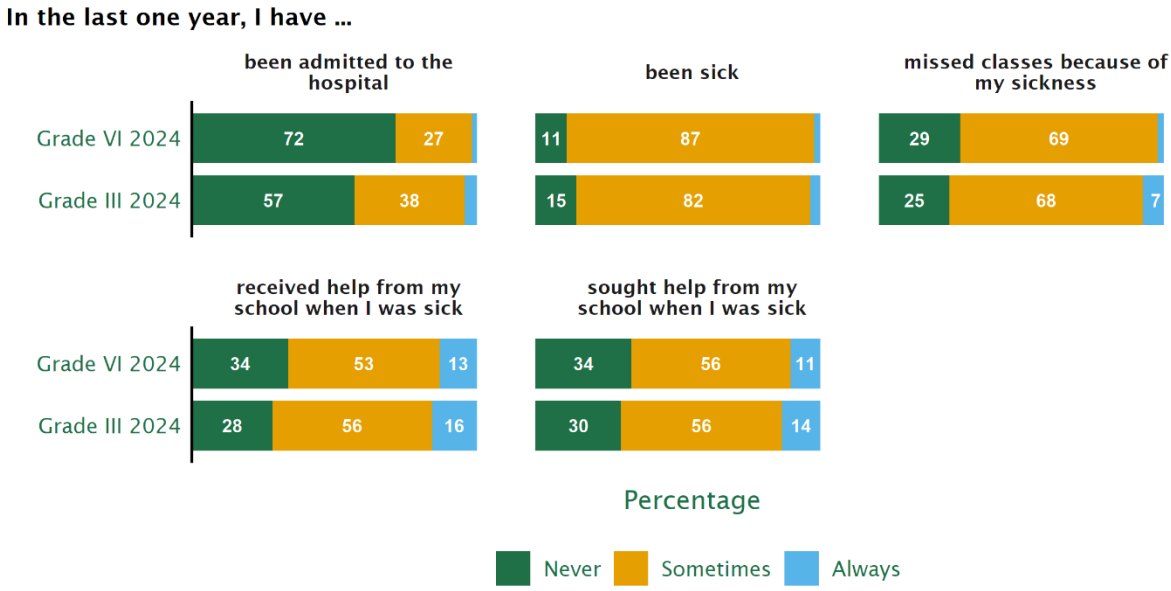


Notes: Bars marked with * indicate statistically significant differences from NEA 2021.

15.3. Illness

Figure 15.7 shows student responses to questions about illnesses they have experienced over the past year. A very large percentage of students (85% in grade III and 89% in grade VI) said they had been sick at least 'sometimes' in the last year. Slightly lower percentages of students (75% in grade III and 71% in grade VI) said they had missed at least some classes due to illness. Lower percentages of students again said they had sought help from school (70% in grade III and 67% in grade VI) or received help from school (72% and 66%). Much lower percentages of students (43% in grade III and 28% in grade VI) had been admitted to hospital.

Figure 15.7: Student responses regarding illness in the last year



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024 that may affect comparability.

Chapter 16. Student values and attributes

Key findings from this chapter

Student values

- Every statement relating to the student values was given a high importance rating by students. However, many of these ratings were significantly (albeit slightly) lower in 2024 than they had been in 2021. The largest drop was seen in the students' perceived importance of volunteering to help.

- Teachers also reported high ratings against the statements. As was the case for students, some of the ratings given by teachers displayed small but statistically significant reductions between 2021 and 2024.

Attributes emphasised and supported by schools

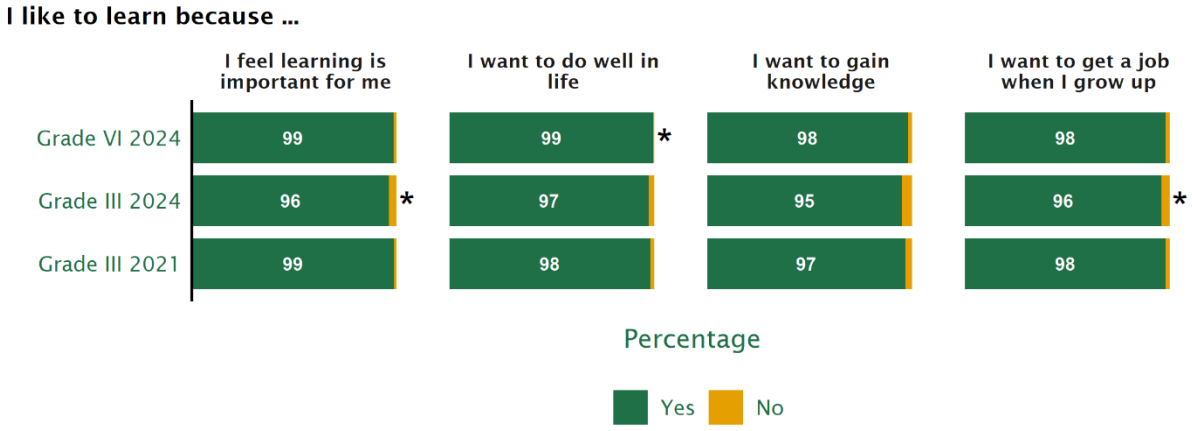
- In general, teachers and principals felt their school was making good progress in supporting the nine attributes and ratings tended to be very high across all statements. There was also very little difference between the ratings of grade III and grade VI teachers, indicating that teachers feel good progress is being made in both grades.

- However, average ratings from Chief District and Chief Thromde Education Officers (CDEOs/CTEOs) were considerably lower than the ratings from teachers and principals across all nine student attributes. This finding suggests that CDEOs/CTEOs believe there are more opportunities to further develop these attributes in students.

This chapter provides details of data on values as reported by the students themselves and by their teachers. It also contains the results on related questions in the student questionnaire about students' reasons for learning, and from the teacher, principal, and CDEO/CTEO questionnaire about the attributes schools emphasise, promote, and support.

As background to this, Figure 16.1 provides information on the proportion of students agreeing with each of four statements about why they 'like to learn'. As was the case in 2021, students in 2024 overwhelmingly agreed with all four statements. For two of the statements ('I feel learning is important for me' and 'I want to get a job when I grow up'), the percentage of grade III students agreeing with the statement was significantly lower in 2024 than in 2021. However, the 2024 percentages remained very high (96% for each statement).

Figure 16.1: The reasons students like to learn



Note: Bars marked with * indicate statistically significant differences from NEA 2021.

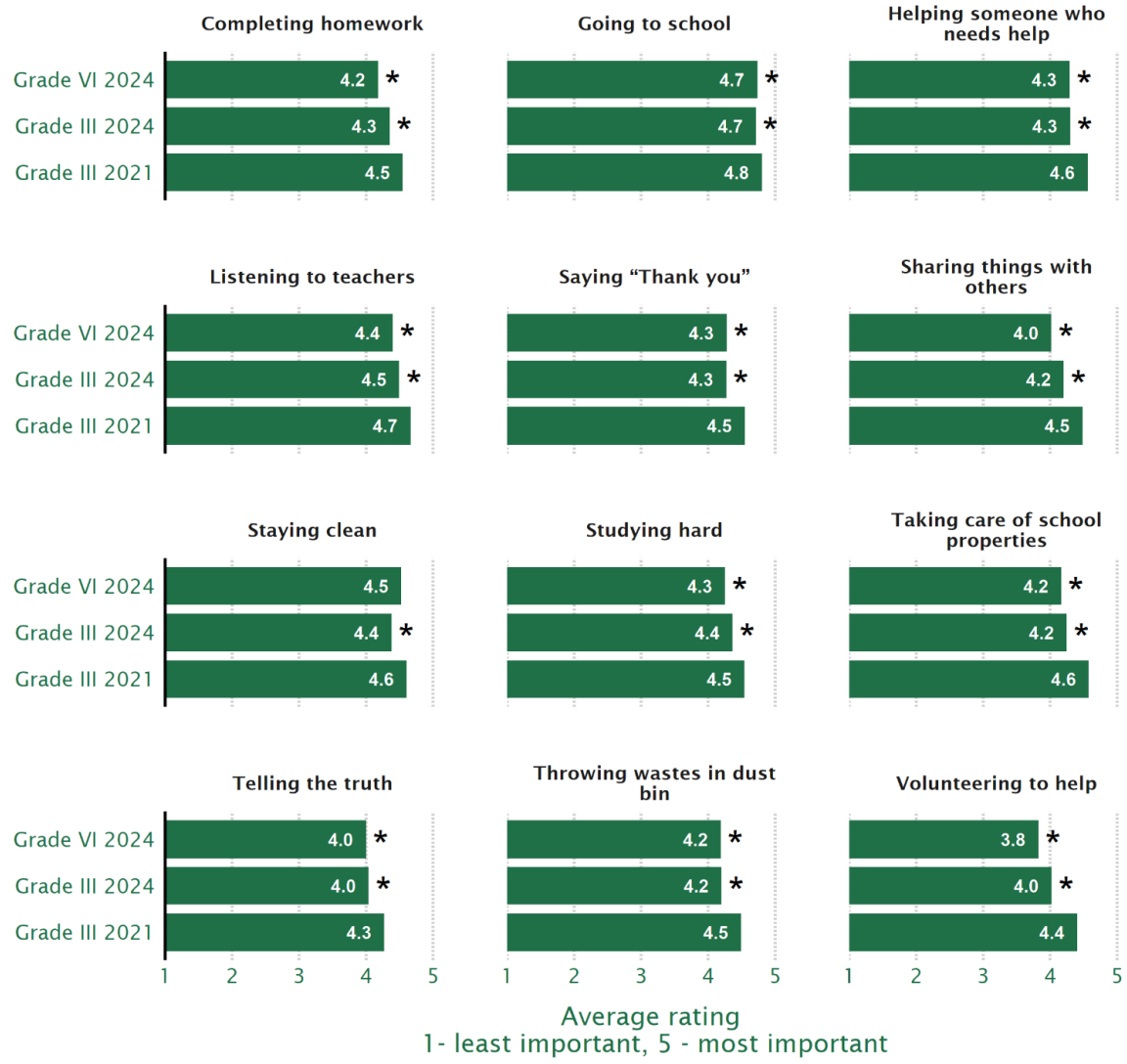
16.1. Student values

Students were asked to participate in the value questionnaire, which assessed student values across six separate categories. Students were asked to rate a total of 12 statements, on a scale from 1 (least important) to 5 (most important). The six categories were as follows:

- **Leadership competence**: assessed by students rating the importance of 'Telling the truth', 'Taking care of school properties', and 'Completing homework'.
- **Family, community, and national values**: assessed by students rating the importance of 'Saying "thank you"' and 'Volunteering to help'.
- **Spirituality and character**: assessed by students rating the importance of 'Listening to teachers', 'Helping someone who needs help', and 'Sharing things with others'.
- **World readiness**: assessed by students rating the importance of 'Going to school'.
- **Physical wellbeing**: assessed by students rating the importance of 'Staying clean'.
- **Enduring habits of lifelong learning**: assessed by students rating the importance of 'Throwing wastes in dust bin' and 'Studying hard'.

Figure 16.2 displays students' average (mean) ratings for each of the 12 statements. As was the case for grade III students in 2021, all of the statements were highly rated, meaning that students in both grade III and grade VI in 2024 considered the values important to them. That said, nearly all of the statements displayed significantly lower average ratings for both grades in 2024 than were seen for grade III students in 2021. The only exception was the grade VI students' rating for 'Staying clean', which showed no significant change from 2021. All of the other statements displayed declines. The largest change was seen for the statement 'Volunteering to help', where the average rating dropped from 4.4 in grade III in 2021 to 4.0 and 3.8 in grades III and VI respectively in 2024.

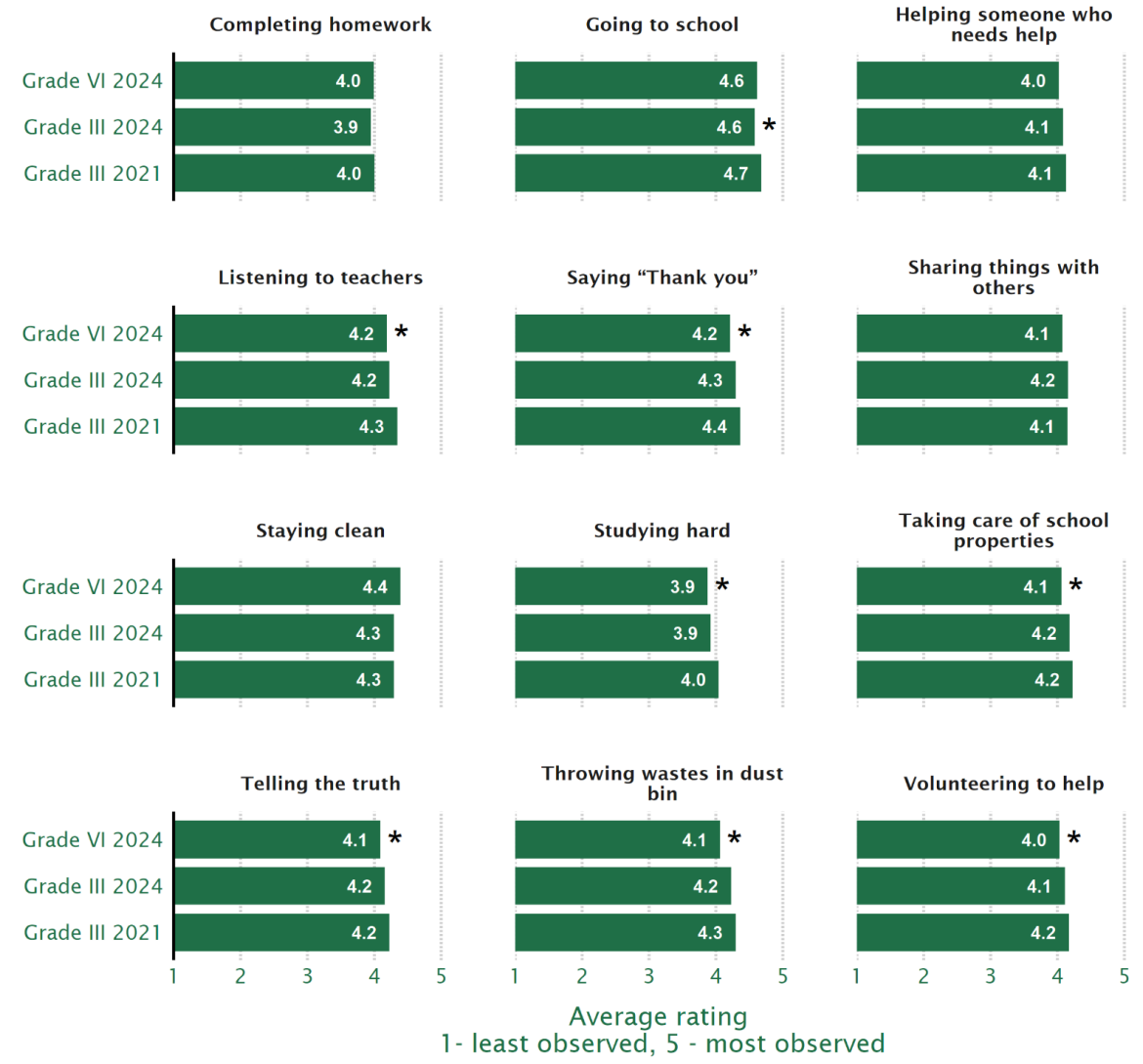
Figure 16.2: Self-rated student values



Notes: Bars marked with * indicate statistically significant differences from NEA 2021.

The same set of statements were given to the class teachers, who evaluated each participating student in the nine student attributes. The results (average ratings) are shown in Figure 16.3. The majority of the average ratings from teachers were very slightly lower than the self-reported ratings from students. Nonetheless, the average level of the ratings remains high. When compared to 2021 ratings, fewer significant differences were found in the teacher ratings. However, where significant differences were found these indicated a decrease in ratings since 2021, and, even if not statistically significant, the majority of average ratings decreased between 2021 and 2024. Thus, the teacher ratings somewhat corroborate the evidence from the self-reported values.

Figure 16.3: Teacher-rated student values



Notes: Bars marked with * indicate statistically significant differences from NEA 2021.

16.2. Attributes emphasised and supported by schools

Teachers and principals were asked to rate their school's progress in encouraging and promoting aspects of nine separate attributes that form the foundation of 'Whole Education' as described in the *Bhutan Education Blueprint 2014–2024*. For each attribute, teachers and principals were asked to provide a rating from 1 to 5, indicating the progress their school had made against a number of statements relating to that attribute.

Figure 16.4 to Figure 16.9 shows the average ratings provided by teachers across the nine separate attributes, whereas Figure 16.10 to Figure 16.15 shows the average ratings provided by principals across the nine separate attributes.

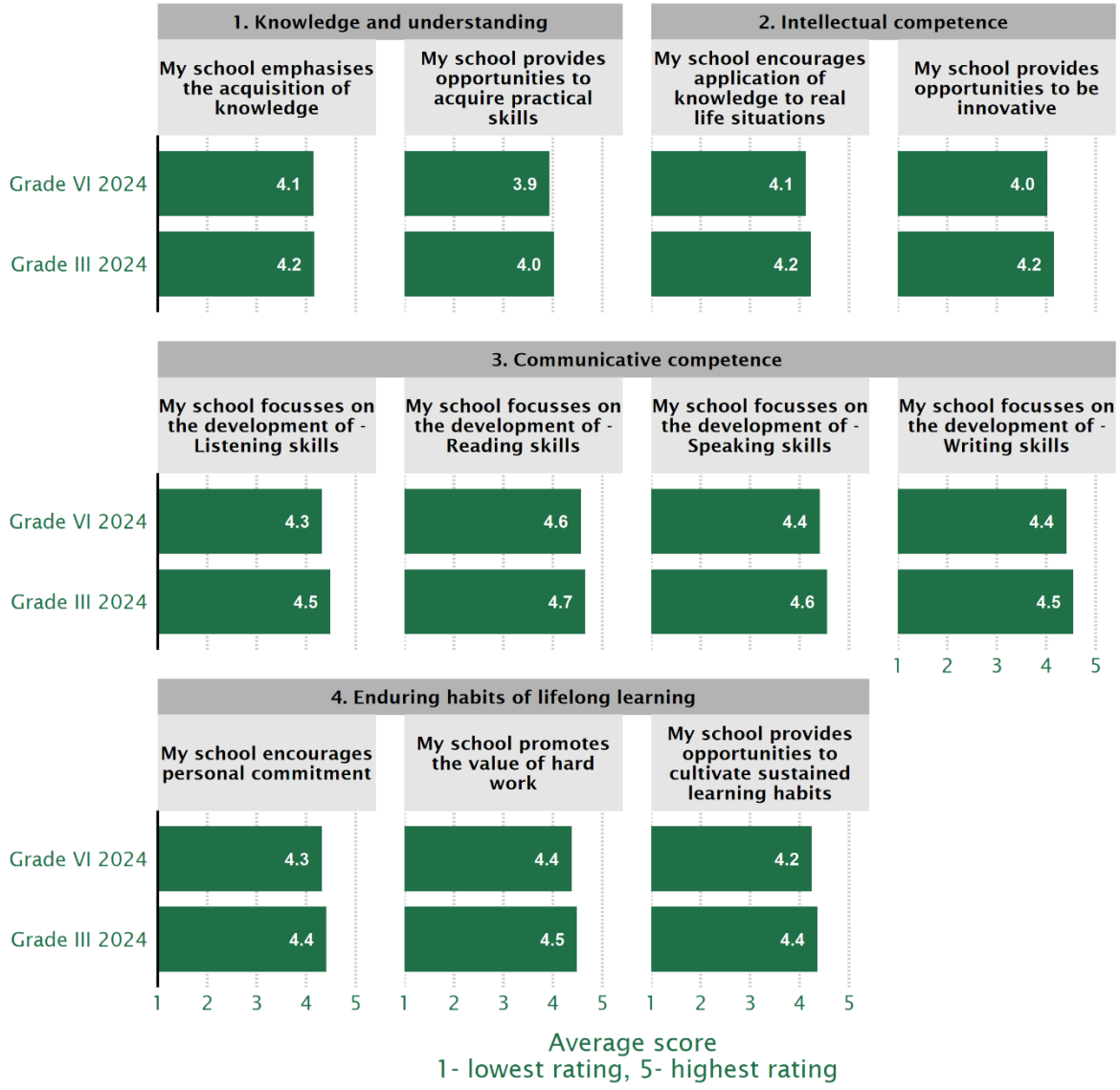
It was not possible to conduct significance testing for the responses from 2021 and 2024

because the response formats differed between the two years. In 2021, teachers and principals were asked to indicate their level of agreement with each statement; in 2024, they were asked to provide a rating. Due to this inconsistency in response scales, the 2021 results were excluded from the figures.

In general, all of the ratings tended to be very high, with averages across all statements ranging from 3.9 to 4.7. This indicates that, in general, teachers felt their school was making good progress in supporting the nine attributes. The figures also show very little difference between the mean ratings of grade III and grade VI teachers, indicating that teachers feel good progress is being made in both grades.

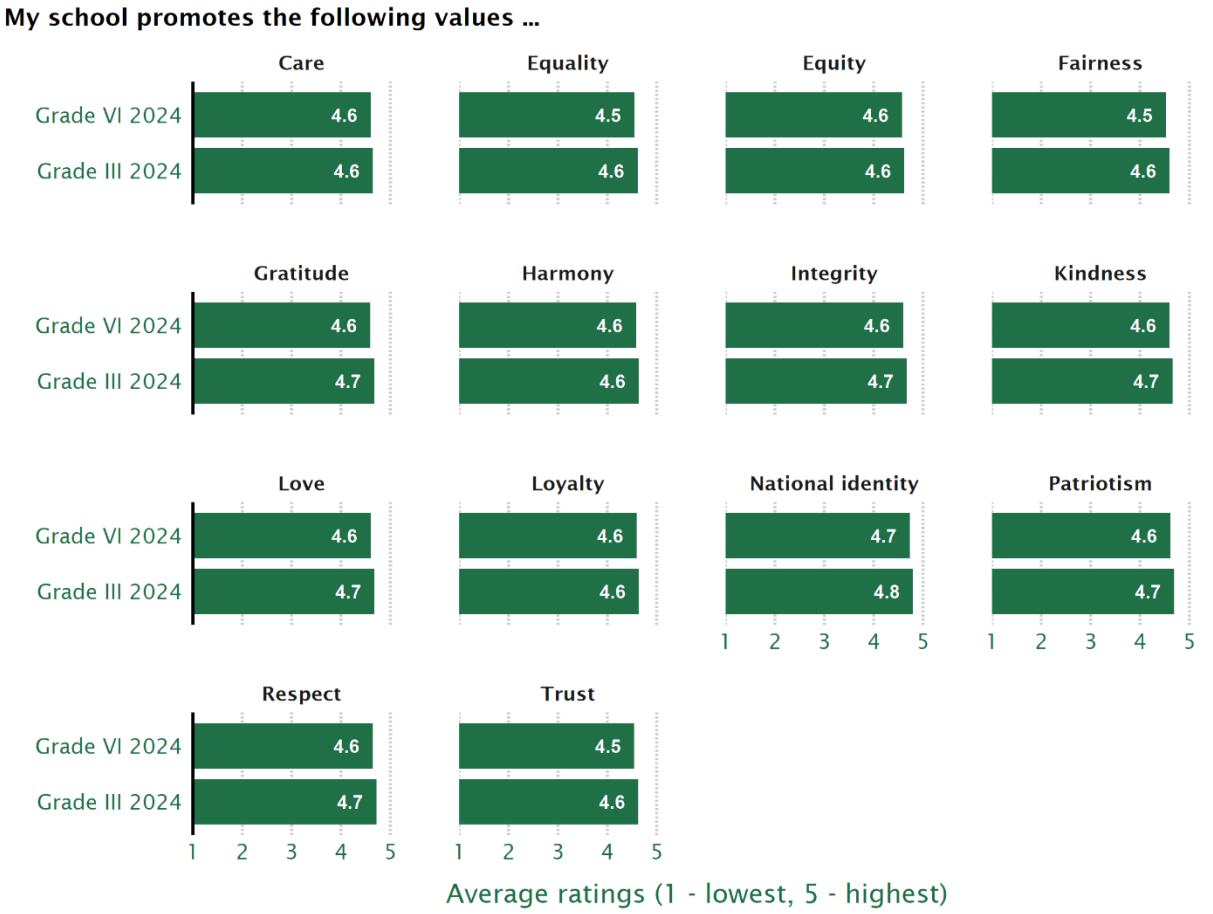
The lowest average ratings (ranging from 3.9 to 4.1) were seen in statements relating to attribute 1, 'Knowledge and understanding'. Indeed, the lowest mean rating for any statement (3.9) was the extent to which grade VI teachers felt that 'My school provides opportunities to acquire practical skills'. Slightly higher ratings (ranging from 4.0 to 4.2) were seen for attribute 2, 'Intellectual competence', and slightly higher ratings again (ranging from 4.1 to 4.5) were reported for attribute 9, 'World readiness'. Mean ratings for the remaining attributes ('Communicative competence', 'Enduring habits of lifelong learning', 'Family, community, and national values', 'Spirituality and character', 'Physical wellbeing', and 'Leadership competence') were all higher again and displayed similar values ranging from 4.3 to 4.7.

Figure 16.4: Average teacher ratings of level of school emphasis and support on student attributes 1 to 4



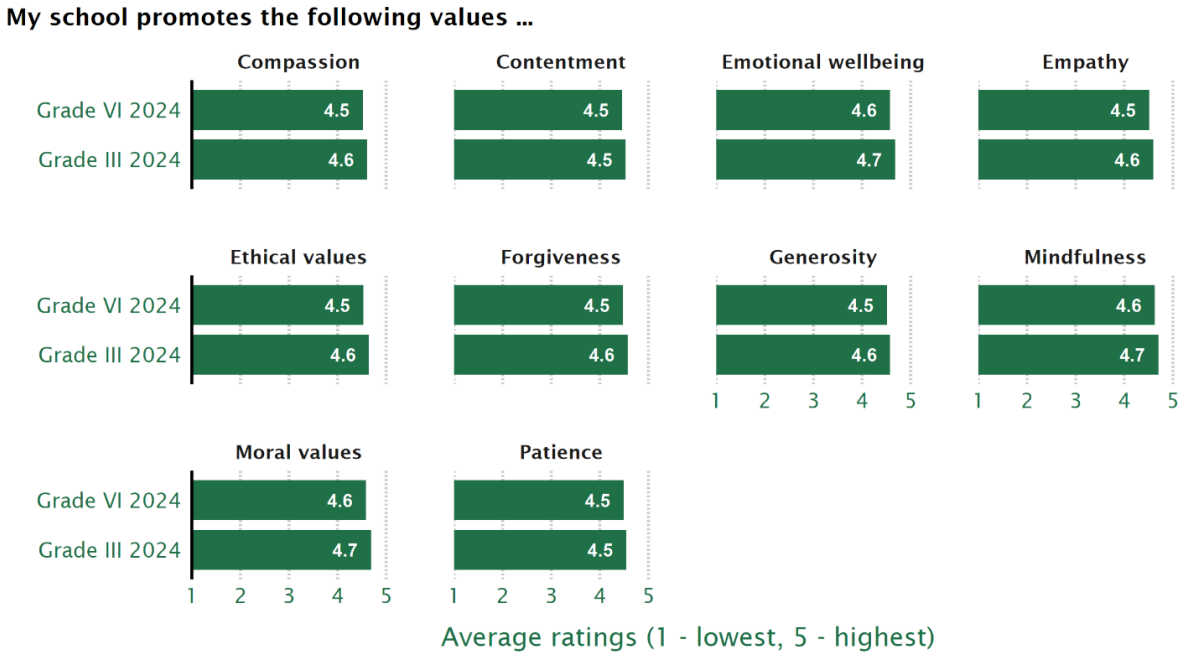
Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 16.5: Average teacher ratings of level of school emphasis and support on student attribute 5, 'Family, community, and national values'



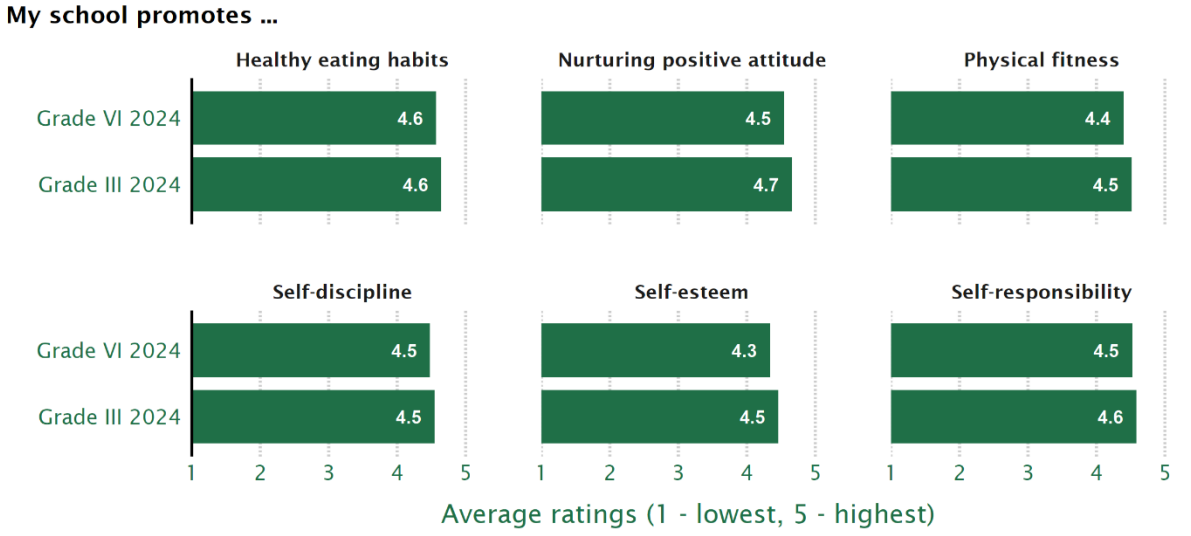
Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 16.6: Average teacher ratings of level of school emphasis and support on attribute 6, 'Spirituality and character'



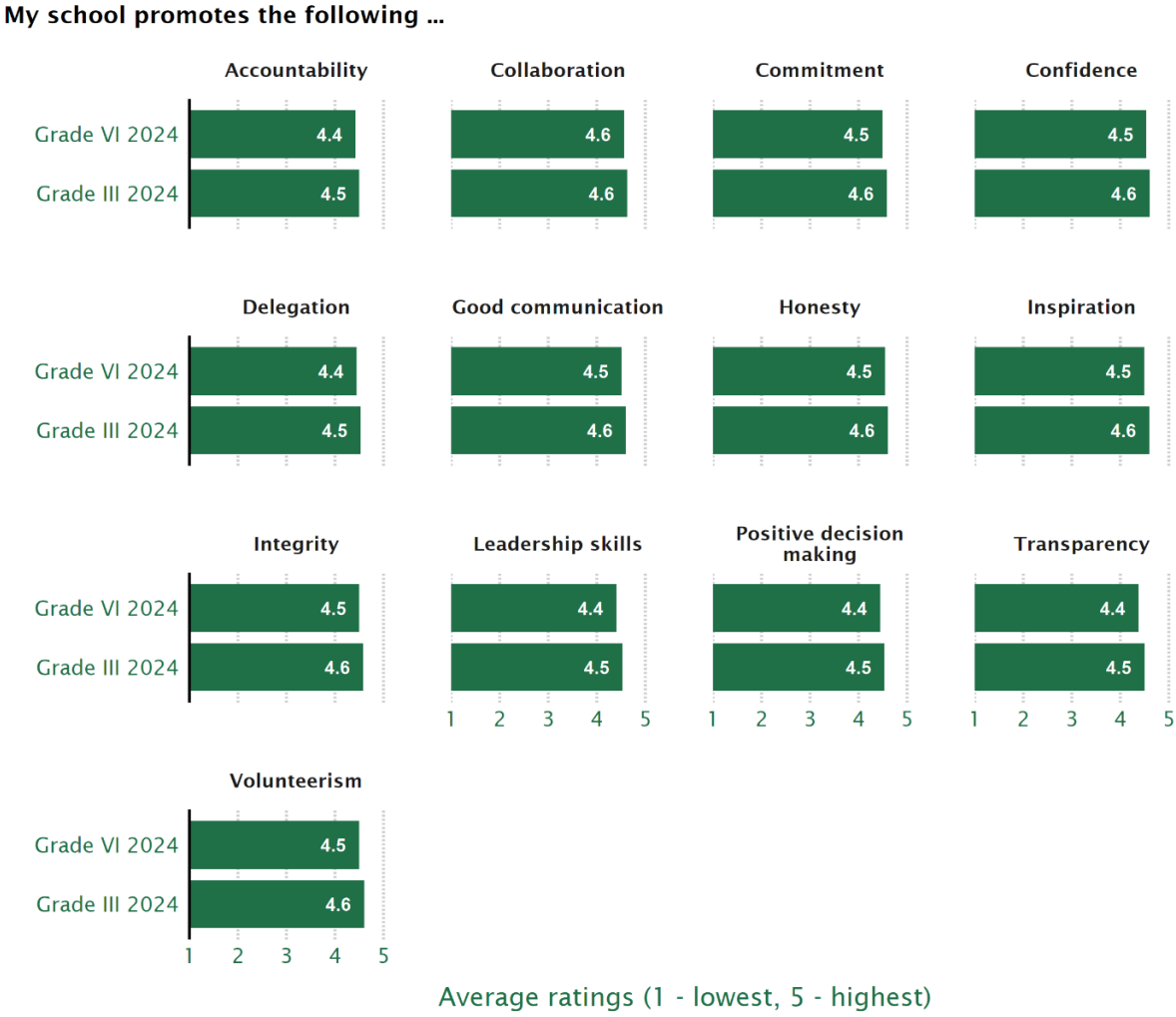
Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 16.7: Average teacher ratings of level of school emphasis and support on attribute 7, 'Physical wellbeing'



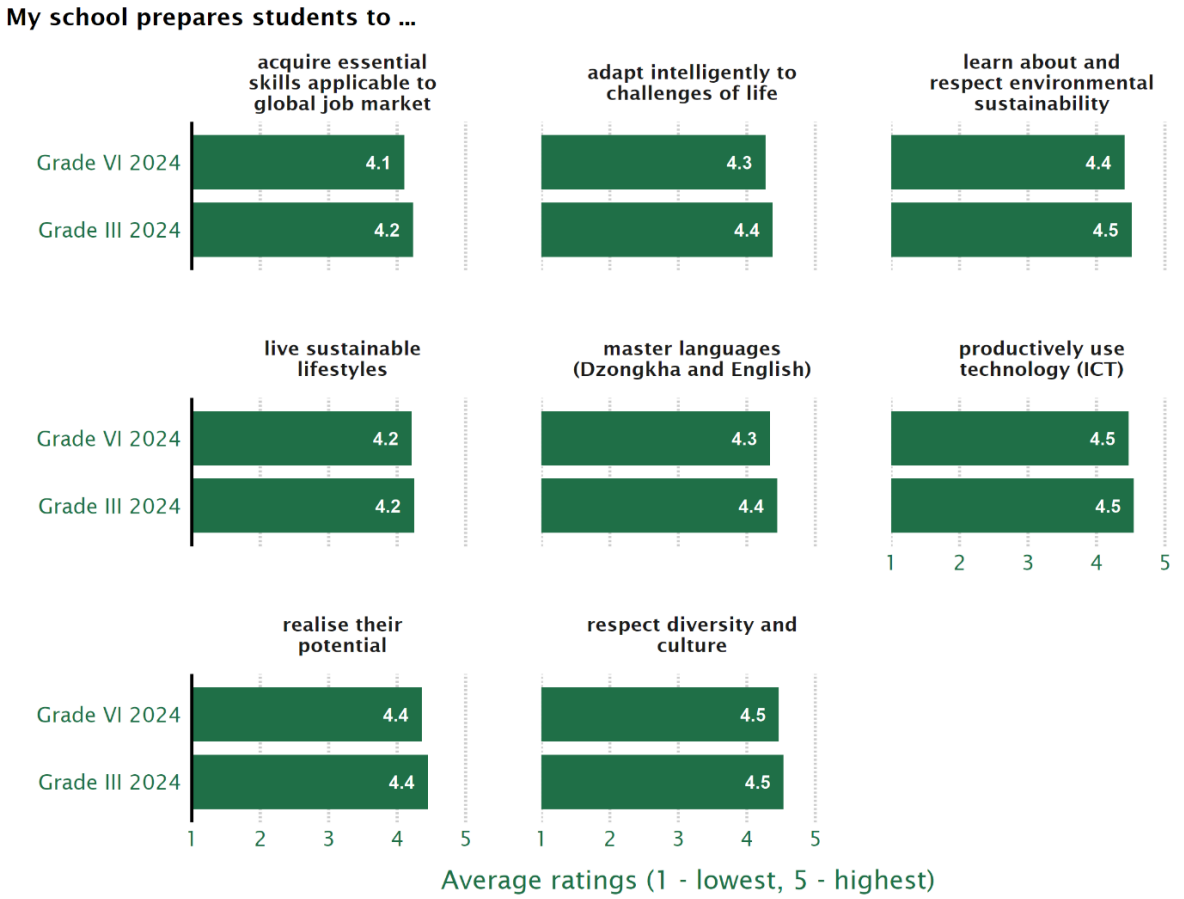
Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 16.8: Average teacher ratings of level of school emphasis and support on attribute 8, 'Leadership competence'



Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 16.9: Average teacher ratings of level of school emphasis and support on attribute 9, 'World readiness'

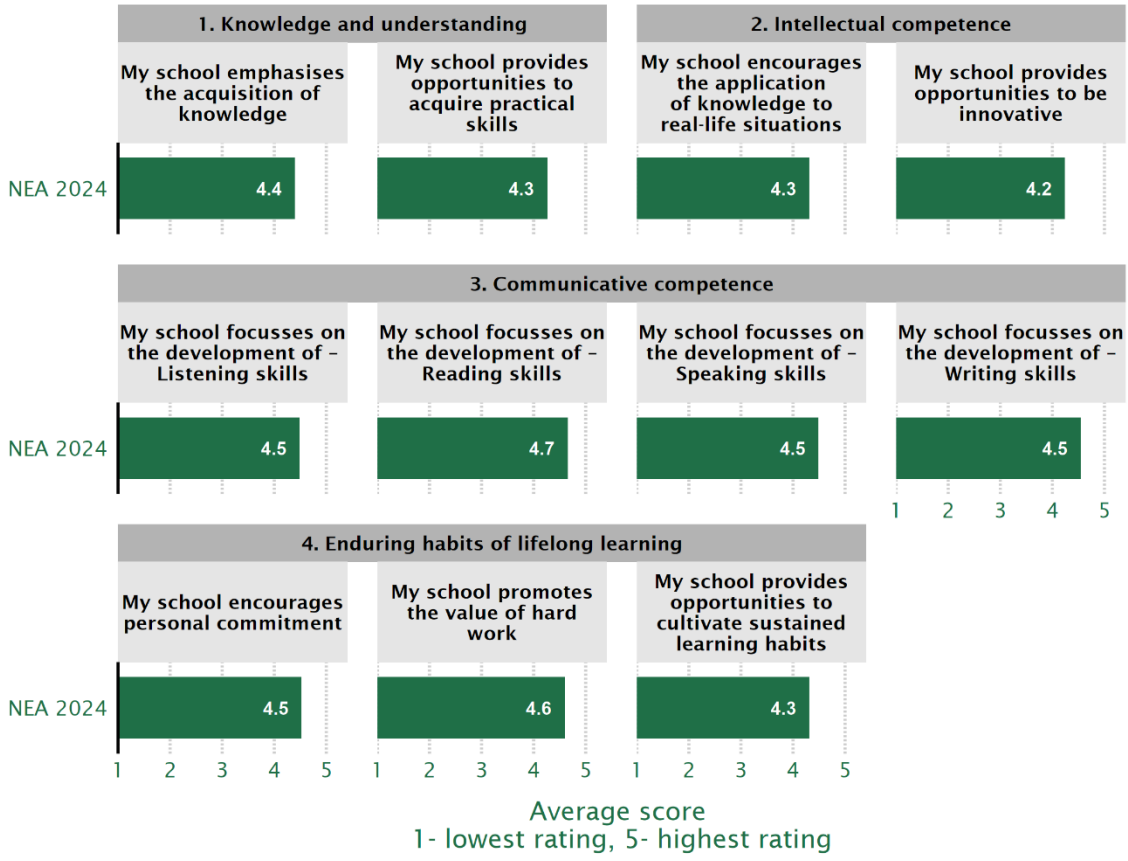


Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 16.10 to Figure 16.15 shows the average ratings provided by principals across the nine separate attributes. All of the ratings tended to be very high, with averages across all statements ranging from 4.2 to 4.8. Overall, principals felt their school was making good progress in developing the nine attributes.

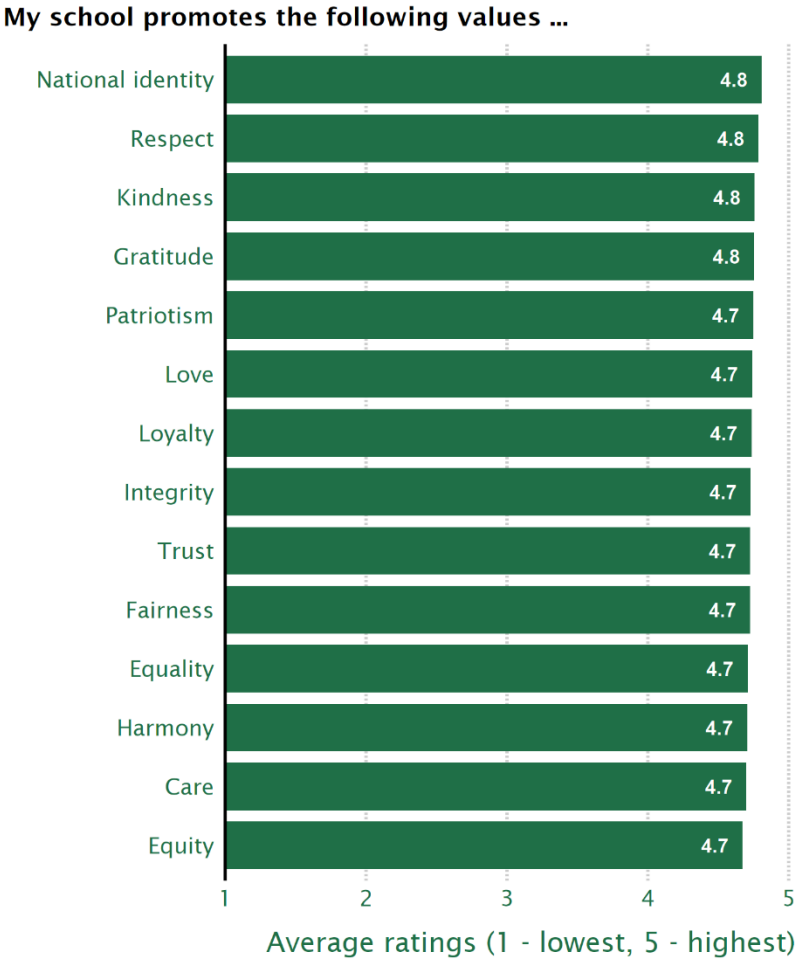
The lowest average ratings (4.2) were seen for the statements 'My school provides opportunities to be innovative' and 'My school prepares students to acquire essential skills applicable to the global job market'. Higher ratings (4.8) were seen for attribute 5 'Family, community, and national values', specifically in three values: national identity, kindness, gratitude, and respect.

Figure 16.10: Average principal ratings of the development of student attributes 1 to 4 in their school



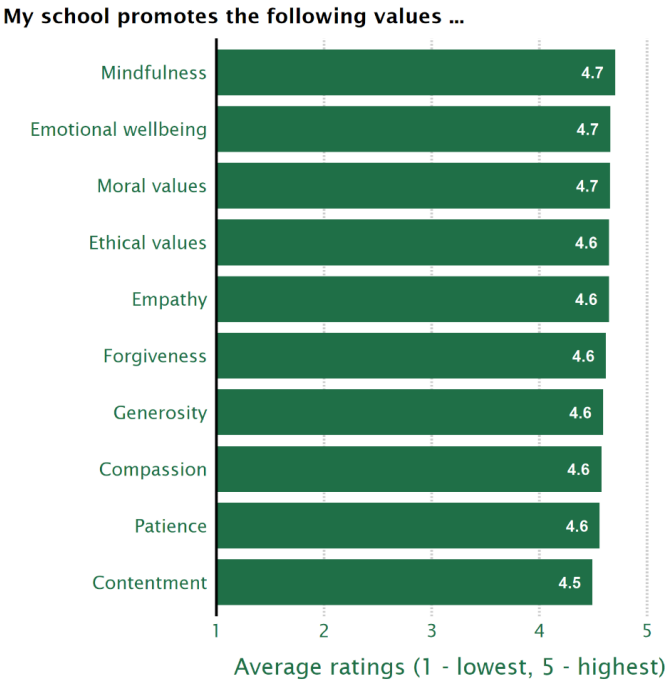
Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 16.11: Average principal ratings of the development of student attribute 5 in their school, 'Family, community, and national values'



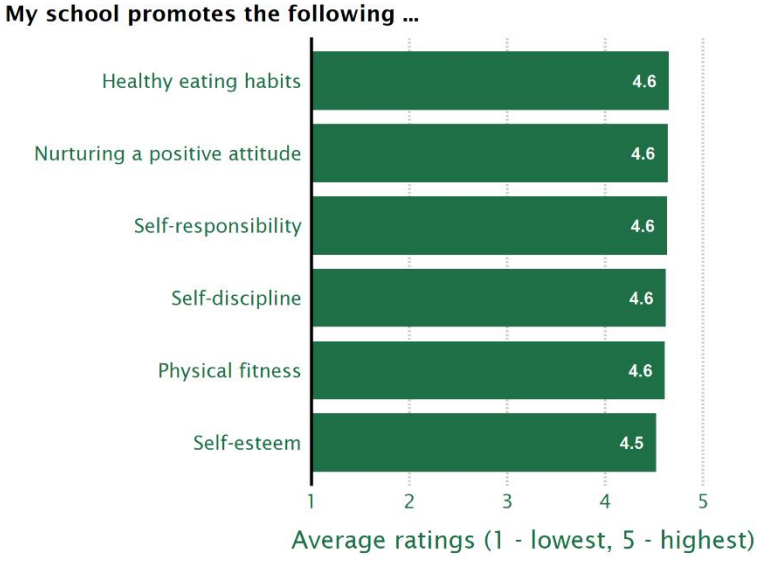
Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 16.12: Average principal ratings of the development of student attribute 6 in their school, 'Spirituality and character'



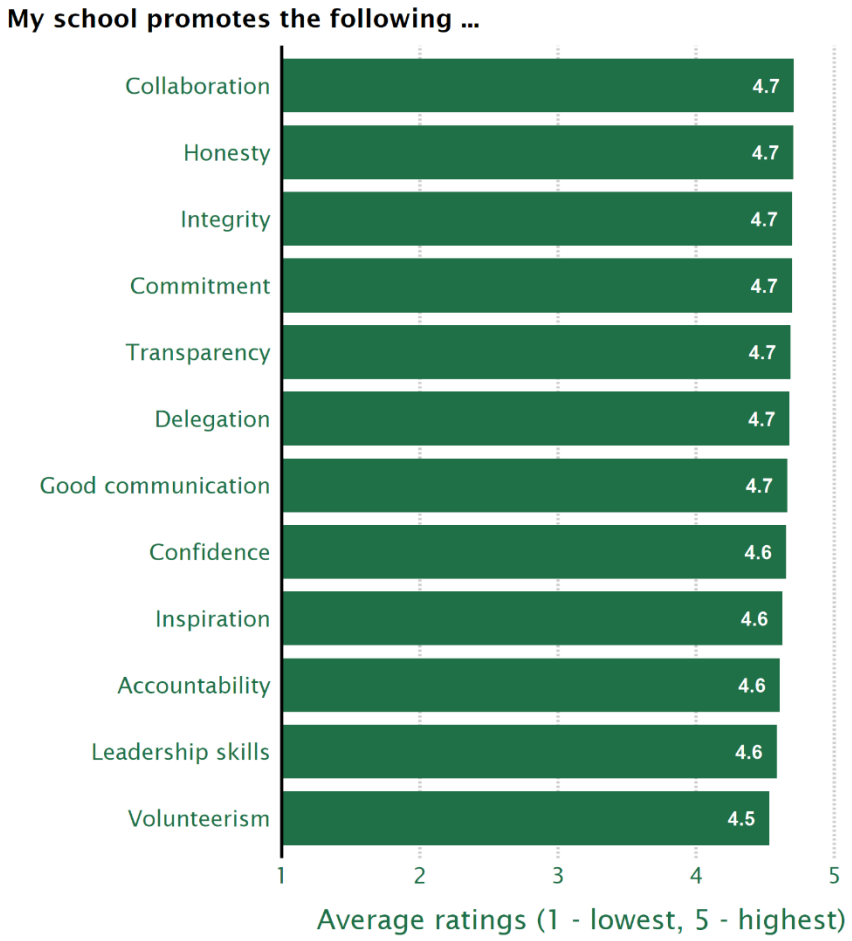
Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 16.13: Average principal ratings of the development of student attribute 7 in their school, 'Physical wellbeing'



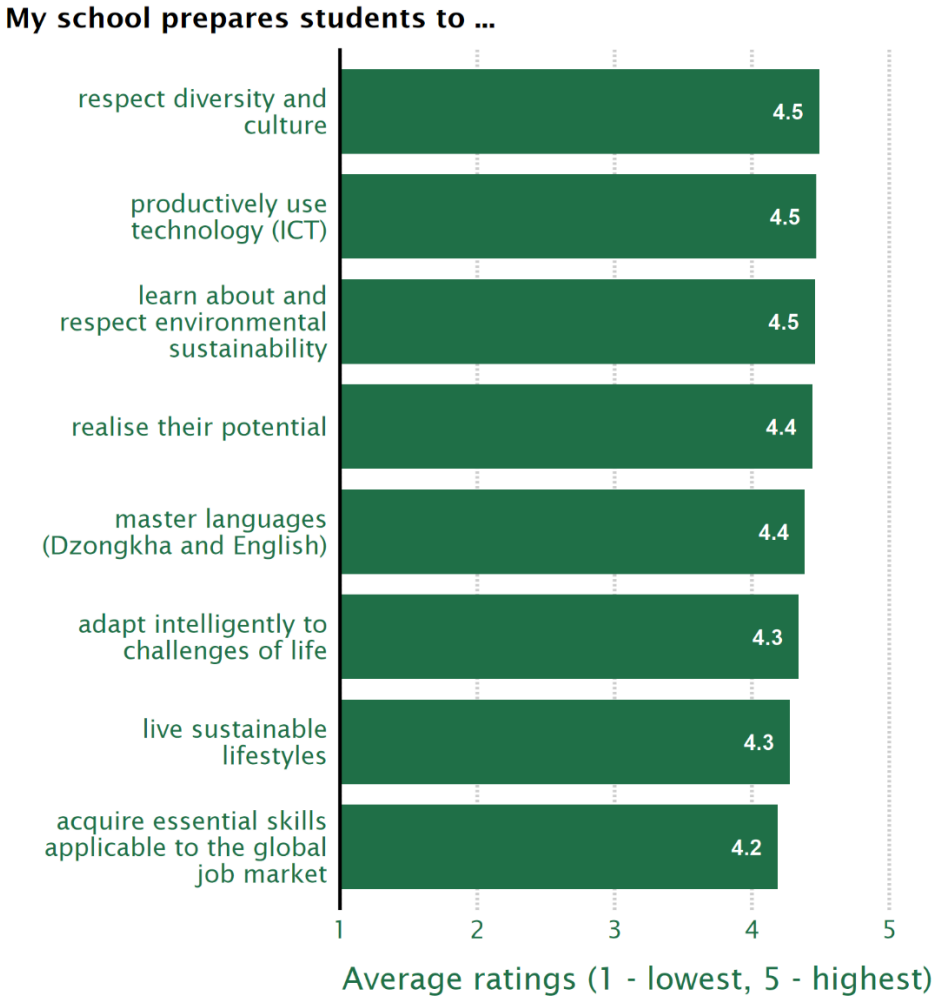
Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Figure 16.14: Average principal ratings of the development of student attribute 8 in their school, 'Leadership competence'



Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

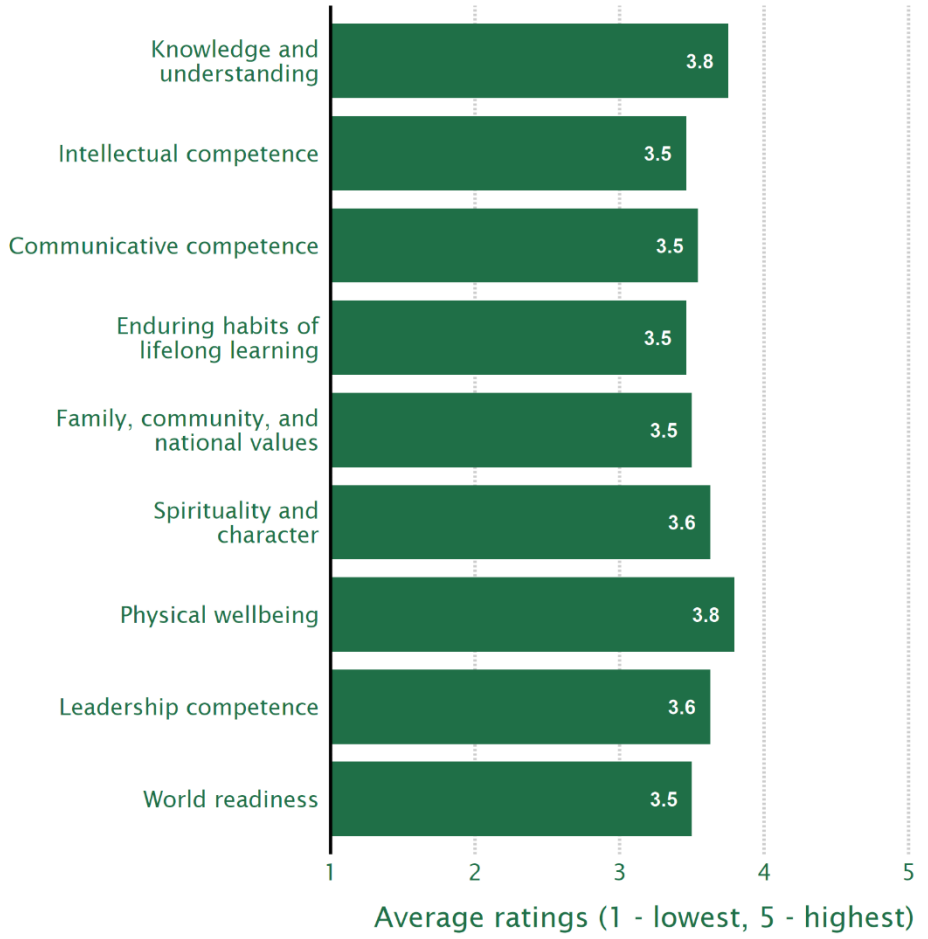
Figure 16.15: Average principal ratings of the development of student attribute 9 in their school, 'World readiness'



Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

CDEOs and CTEOs were also asked to rate the development of student attributes in schools within their districts on a scale from 1 (lowest) to 5 (highest). The average ratings, presented in Figure 16.16, ranged from 3.5 to 3.8, with relatively consistent scores across the nine student attribute statements. The highest-rated attributes were 'Knowledge and understanding' and 'Physical wellbeing.' These ratings were relatively lower than those given by teachers and principals, whose average scores were mostly above 4.

Figure 16.16: Average CDEOs/CTEOs ratings of the development of nine student attributes in schools under their district/Thromde



Note: Results from NEA 2021 were excluded due to changes in response options.

Chapter 17. Teaching practices

Key findings from this chapter

Teaching practices

- Teachers displayed a high level of confidence with a range of assessment practices and were clear on their learning intentions. Several statements relating to teachers' assessment practices were rated lower among grade III teachers in 2024 compared to ratings from grade III teachers in 2021. However, the ratings remained high overall. The lowest-rated statements were: 'My students do self-assessment' and 'I received adequate training on formative assessment'.

- The reported teaching practices were found to be very similar between grade III and grade VI teachers.

- Teachers reported frequently using a wide range of learner-centred strategies and this practice was corroborated by students.

- Among the teaching practices investigated, the least frequently adopted approaches were the use of ICT resources in teaching, and taking students outside the classroom to learn. Additionally, teachers reported that their schools did not always have adequate teaching and learning materials.

- Students generally rated teaching practices highly.

- Grade III students in 2024 reported a significantly reduced amount of homework being set in Dzongkha and Mathematics compared to 2021.

- Most principals reported that the school textbooks were adequate or in good condition, whereas 10-13% indicated they were in poor condition. Furthermore, 27-37% of principals reported that TLMs for the main subjects were not available or were in poor condition in the school. Lastly, four out of ten principals said it was not applicable for their school to have TLM for students with disabilities, and 40% indicated that such resources were not available.

Reflective practices

- Teachers displayed a moderate level of use of a range of reflective practices. They reported frequently seeking professional support from colleagues and collecting feedback from their learners as the most commonly-used reflective practices. In contrast, the least frequently-used reflective practices were reviewing lessons through video recordings and conducting action research.

- There was a significant increase in the extent to which grade III teachers said they used action research to improve their teaching.

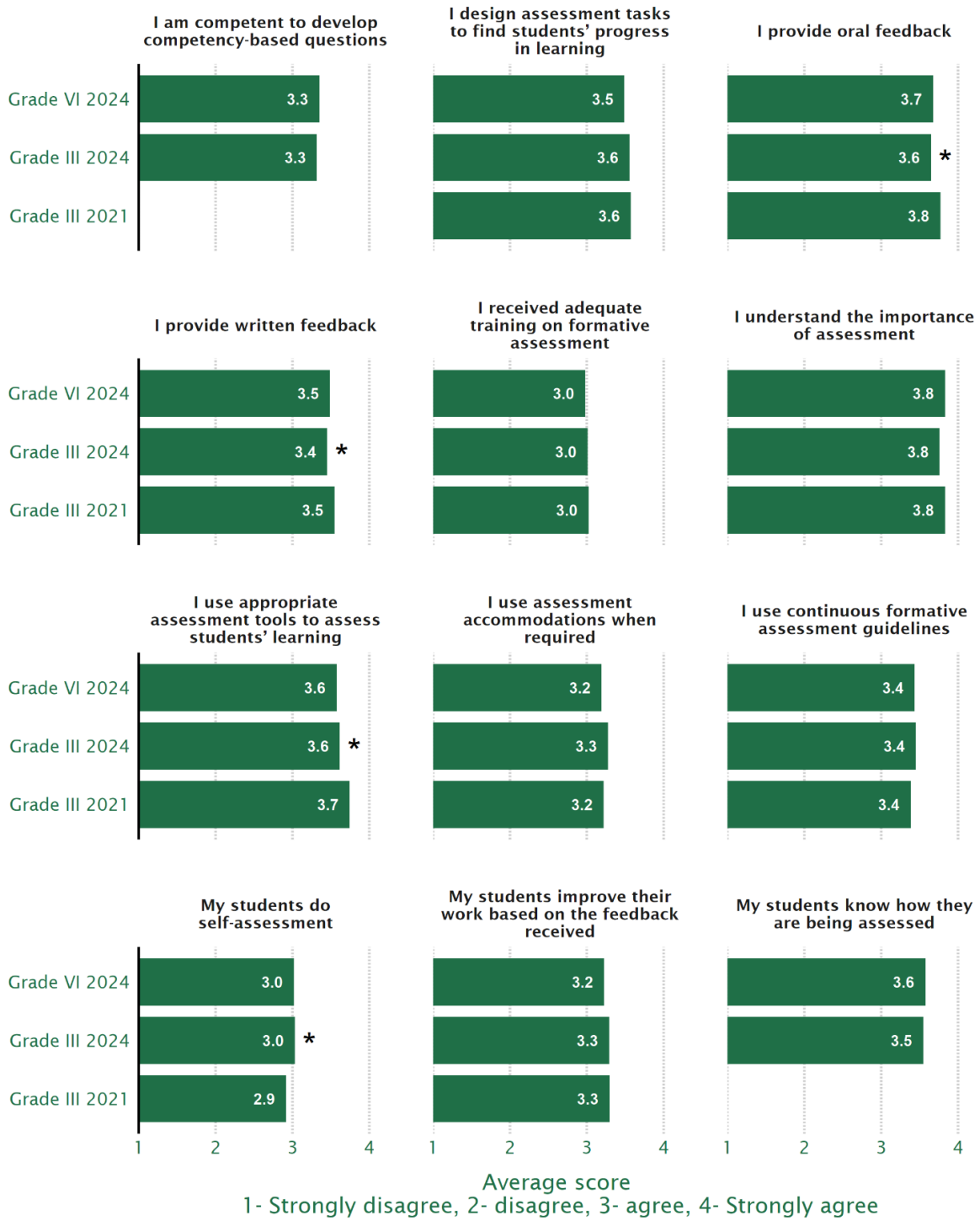
This chapter summarises data from the teacher questionnaire about the approaches teachers take to teaching and assessment. This self-reported data from teachers will also be cross-referenced against the perceptions students have of teaching practices, as recorded in the student questionnaire. Finally, this chapter will report on responses about teachers' reflective practices – that is, the extent to which they collect feedback from others and attempt to improve their teaching. Significance tests were conducted to compare grade III teachers in 2024 to grade III teachers in 2021.

17.1. Teaching practices

Teachers were asked to evaluate their assessment practices on a scale from 1 ('strongly disagree') to 4 ('strongly agree'). Figure 17.1 summarises teachers' ratings on the various statements regarding their assessment practices. For both grade III and grade VI teachers in 2024, all of the mean ratings were at 3.0 or above. Given that a score of 3 means 'agree' on the scale, this indicates that teachers were confident with each of the listed assessment practices. As was the case in 2021, the highest ratings (all between 3.6 and 3.8) were reported for 'I understand the importance of assessment' and 'I provide oral feedback'. Ratings of 3.5 or higher were also reported in 2024 in both grades III and VI for 'I design assessment tasks to find students' progress in learning', 'I use appropriate assessment tools to assess students' learning', and 'My students know how they are being assessed'. A mean rating of 3.5 and above was also displayed Grade VI teachers (only) in 2024 for 'I provide written feedback'.

For three statements ('I provide oral feedback', 'I provide written feedback' and 'I use appropriate assessment tools to assess students' learning'), grade III teachers' mean ratings in 2024 were significantly lower than in 2021. However, the differences were very small, and the ratings remain high. In contrast, grade III teachers displayed a small, but statistically significant, increase in their mean rating for 'My students do self-assessment'. Nonetheless, this statement and the statement 'I received adequate training on formative assessment' remain the statements with the lowest ratings from teachers.

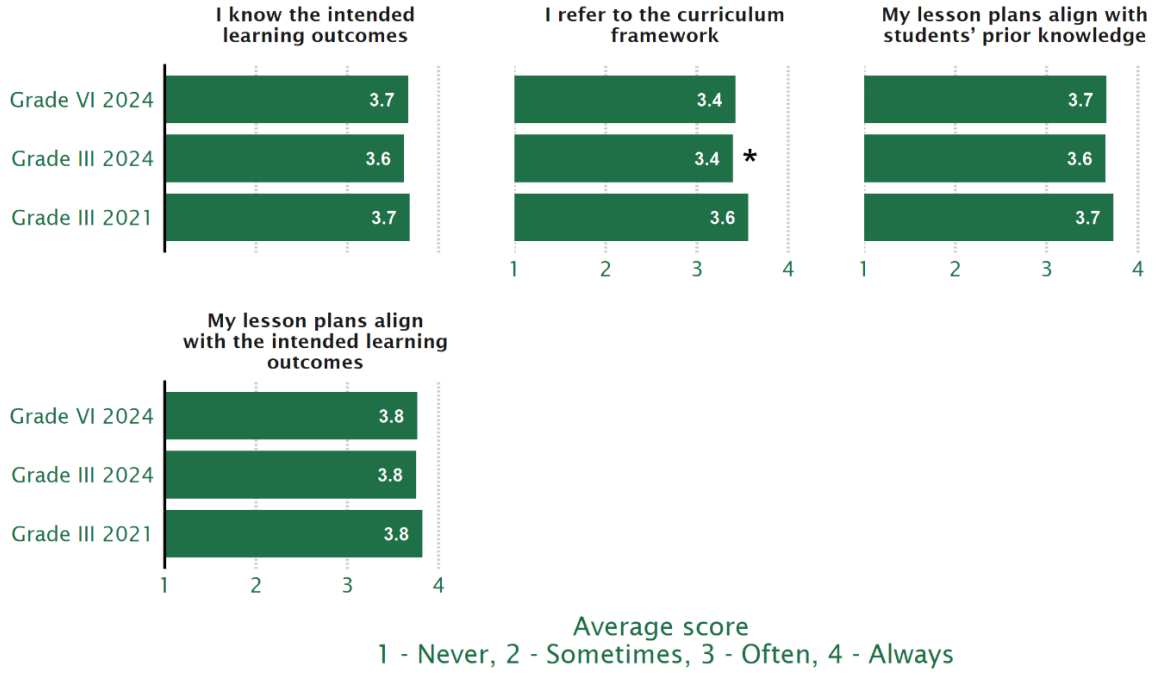
Figure 17.1: Teacher responses relating to continuous formative assessment



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Teachers were also asked to rate themselves on the extent to which they emphasise learning intentions on a scale from 1 ('never') to 4 ('always'). Their responses to these questions are summarised in Figure 17.2. All of the mean ratings were 3.4 or higher, indicating that each statement reflects a frequent element of teaching practice. The lowest ratings in 2024 (3.4 for both grade III and grade VI teachers) were seen for the statement 'I refer to the curriculum framework'. Furthermore, the mean rating for this statement was significantly lower for grade III teachers in 2024 than in 2021. Having said this, the rating for this statement remains high.

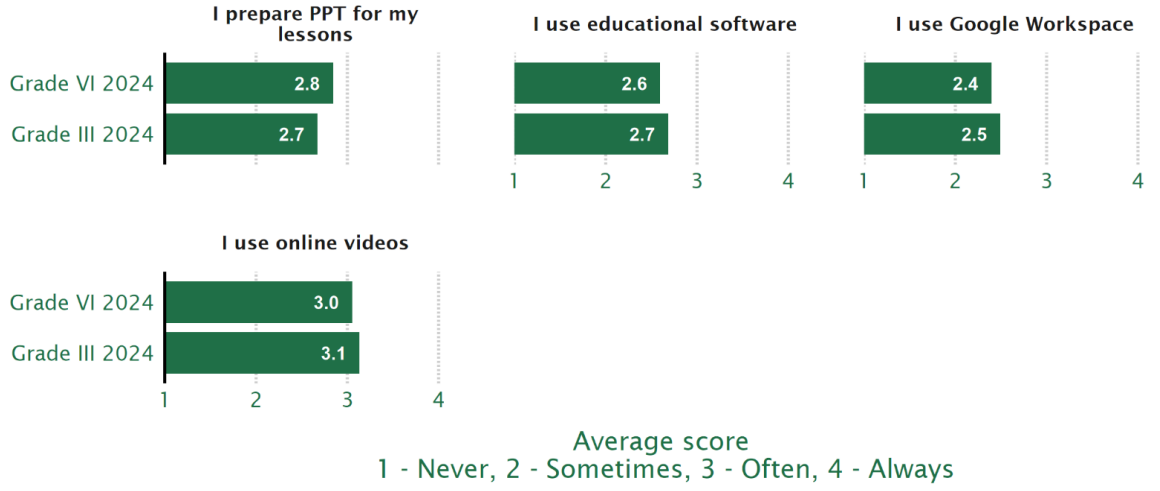
Figure 17.2: Teacher responses relating to emphasising learning intentions



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles.

Using the same rating scale, Figure 17.3 summarises teachers' responses regarding their use of Information and Communications Technology (ICT) resources. In both grade III and grade VI, the ratings for these statements were a little lower than those in Figure 17.2 (between 2.4 and 3.1), indicating that teachers use these resources occasionally but by no means all the time. The highest ratings were seen for 'I use online videos' (3.1 in grade III and 3.0 in grade VI). For all of the statements, the mean ratings from grade III and grade VI teachers were very similar.

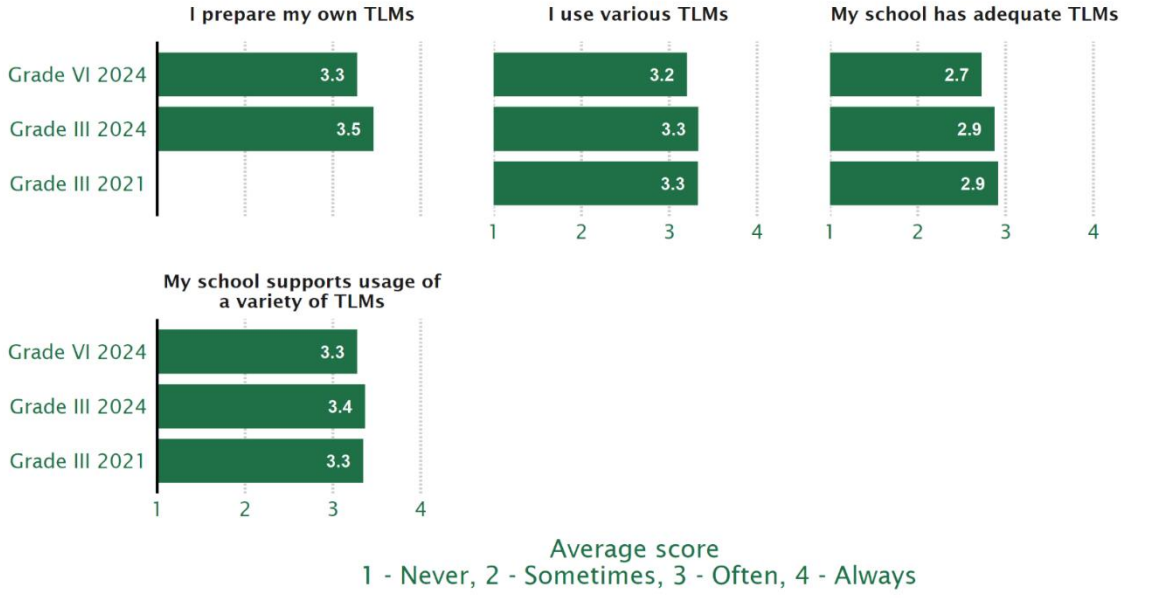
Figure 17.3: Teacher responses relating to use of Information and Communications Technology (ICT)



Note: Teachers were not asked these questions in NEA 2021.

Figure 17.4 shows teachers' ratings of statements about teaching and learning materials (TLM). The ratings for these statements were a little higher than in Figure 17.3 (ranging from 2.7 to 3.5), indicating that teachers frequently prepare their own TLM, use various TLM, and that their school supports usage of a variety of TLM. The lowest ratings (between 2.7 and 2.9) were seen for the statement 'My school has adequate TLM' indicating that this is not always the case. There were no statistically significant changes in the ratings of teachers between 2021 and 2024.

Figure 17.4: Teacher responses relating to TLM

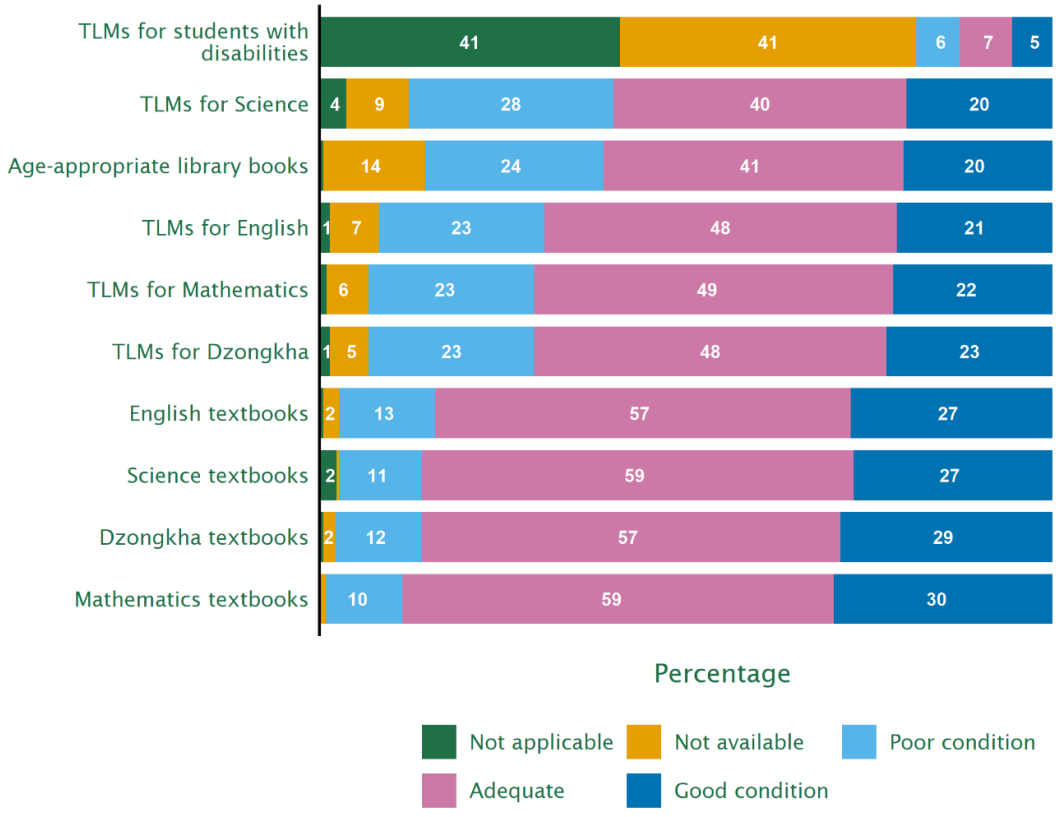


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Principals also evaluated the availability and condition of school resources such as TLM and textbooks. Figure 17.5 shows that most principals reported having textbooks for Mathematics (89%), Dzongkha (86%), Science (86%), and English (85%) are adequate or in good condition at the school. TLMs in all subjects, except for Science, were reported to be in similar condition: around 70% of principals reported TLMs were adequate or in good condition, and 23% of principals reported having materials in poor condition. In Science, 60% reported TLMs were adequate or in good condition, whereas 28% of principals reported that TLMs were in poor condition. Incorporating those who said TLMs were not available, 27–37% of principals reported that TLMs for the main subjects were not available or in poor condition in the school.

In addition, 62% of principals reported having age-appropriate library books are adequate or in good condition, 24% in poor condition, and 14% reported not having that resource available in school. Lastly, 41% of principals indicated that it was not applicable for the school to have TLM for students with disabilities, and another 41% indicated not having that resource available in school.

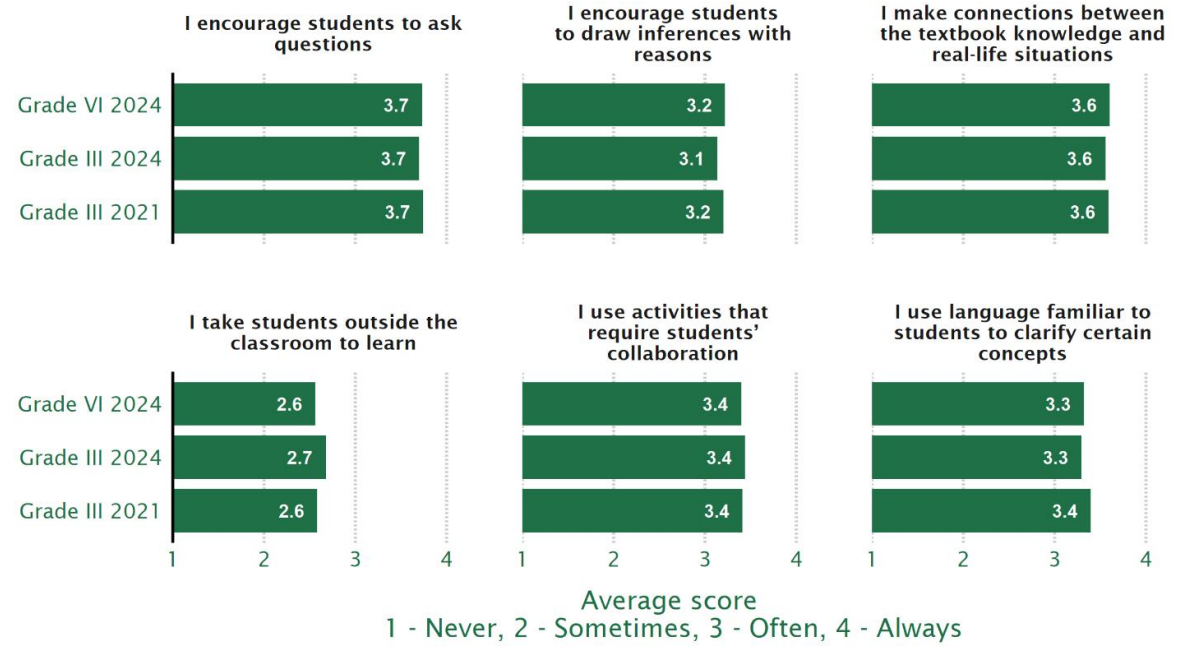
Figure 17.5: Principal responses regarding the availability and condition of resources in their school



Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Teachers were asked to use the same scale to rate the extent to which they used learner-centred strategies. A summary of their responses is provided in Figure 17.6. The lowest mean ratings (ranging from 2.6 to 2.7) were seen for the statement 'I take students outside the classroom to learn', implying that, compared to other approaches, this occurs fairly infrequently. For all other strategies, the mean ratings were high, ranging from 3.1 to 3.7. The highest mean ratings were seen for the statement 'I encourage students to ask questions'. None of the responses to statements in 2024 showed statistically significant changes when compared to responses in 2021.

Figure 17.6: Teacher responses relating to learner-centred strategies



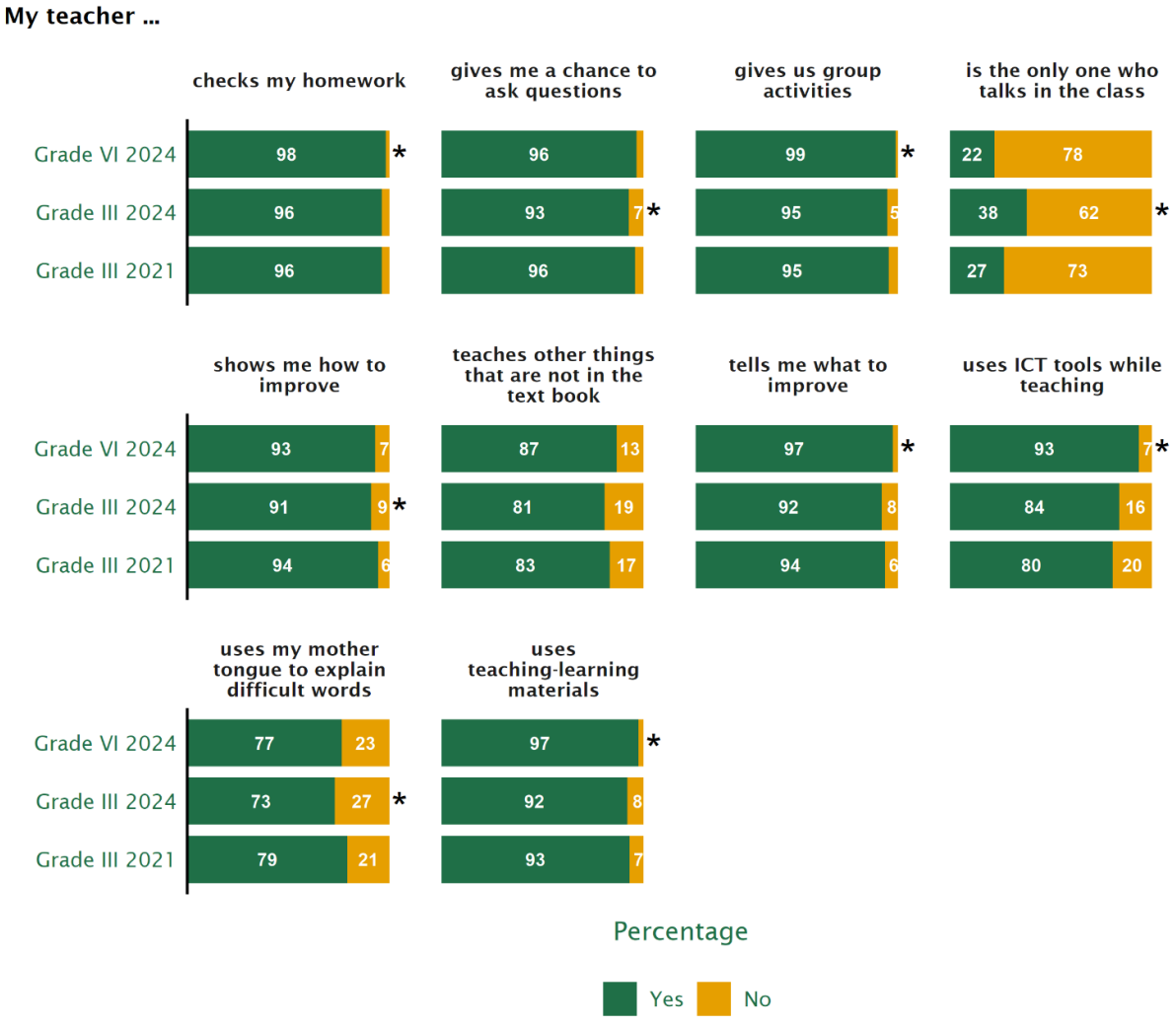
Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles.

As an interesting comparison to the above responses from teachers, Figure 17.7 summarises student responses to a series of statements about teaching practices. Students displayed very high levels of agreement with all of the statements, with the exception of 'My teacher is the only one who talks in the class' and 'My teacher uses my mother tongue to explain difficult words'. For example, in 2024, 93% of grade III students and 96% of grade VI students agreed that their teacher gives them a chance to ask questions. This corroborates the self-reported views of teachers seen in Figure 17.6. Similarly, more than 90% of 2024 students in both grades III and VI agreed that their teacher 'shows me how to improve' and 'tells me what to improve'. This corroborates the high self-reported ratings from teachers about giving feedback to students, as shown in Figure 17.1. Figure 17.7 also shows that more than 80% of students in 2024 agreed that their teacher 'uses ICT tools while teaching' despite the relatively low ratings given by teachers shown in Figure 17.3. Responses to several questions showed significant differences between grade III students

in 2021 and 2024. Specifically, students were slightly less likely to say that their teacher 'gives me a chance to ask questions', 'shows me how to improve', and 'uses my mother tongue to explain difficult words'. On the other hand, they were more likely to say that their teacher 'is the only one who talks in the class' – the statement with generally the lowest level of agreement amongst students.

Responses to several other questions showed significant differences between grade VI students in 2024 and grade III students in 2021. Specifically, grade VI students were more likely to say that their teacher 'checks my homework', 'gives us group activities', 'tells me what to improve', 'uses ICT tools while teaching', and 'uses teaching-learning materials'.

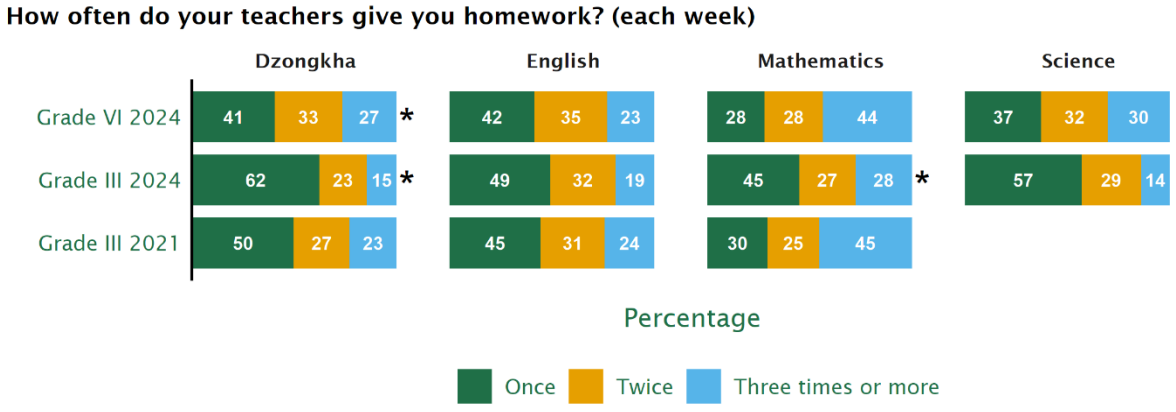
Figure 17.7: Student perceptions of teaching practices



Notes: Bars marked with * indicate statistically significant differences from NEA 2021.

Related to students' perceptions of teaching practices, Figure 17.8 displays how often students said they received homework in each subject every week (note that students were not given the option to say that this did not occur). In 2024, the percentage of students being given homework in each subject at least twice a week ranged from 38% (grade III Dzongkha) to 72% (grade VI Mathematics). Grade III students in 2024 reported a significantly reduced amount of homework being set in Dzongkha and Mathematics compared to 2021. For example, 28% of grade III students in 2024 reported being set Mathematics homework three or more times a week compared to 45% in 2021. In contrast, grade VI students in 2024 reported being set significantly more Dzongkha homework in 2024 compared to grade III in 2021. For example, 27% of grade VI students said they were set Dzongkha homework three or more times a week compared to 23% of grade III students in 2021.

Figure 17.8: Student responses relating to how often they are given homework



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Questions about the frequency of receiving Science homework were not asked in the NEA 2021 cycle.

17.2. Reflective practices

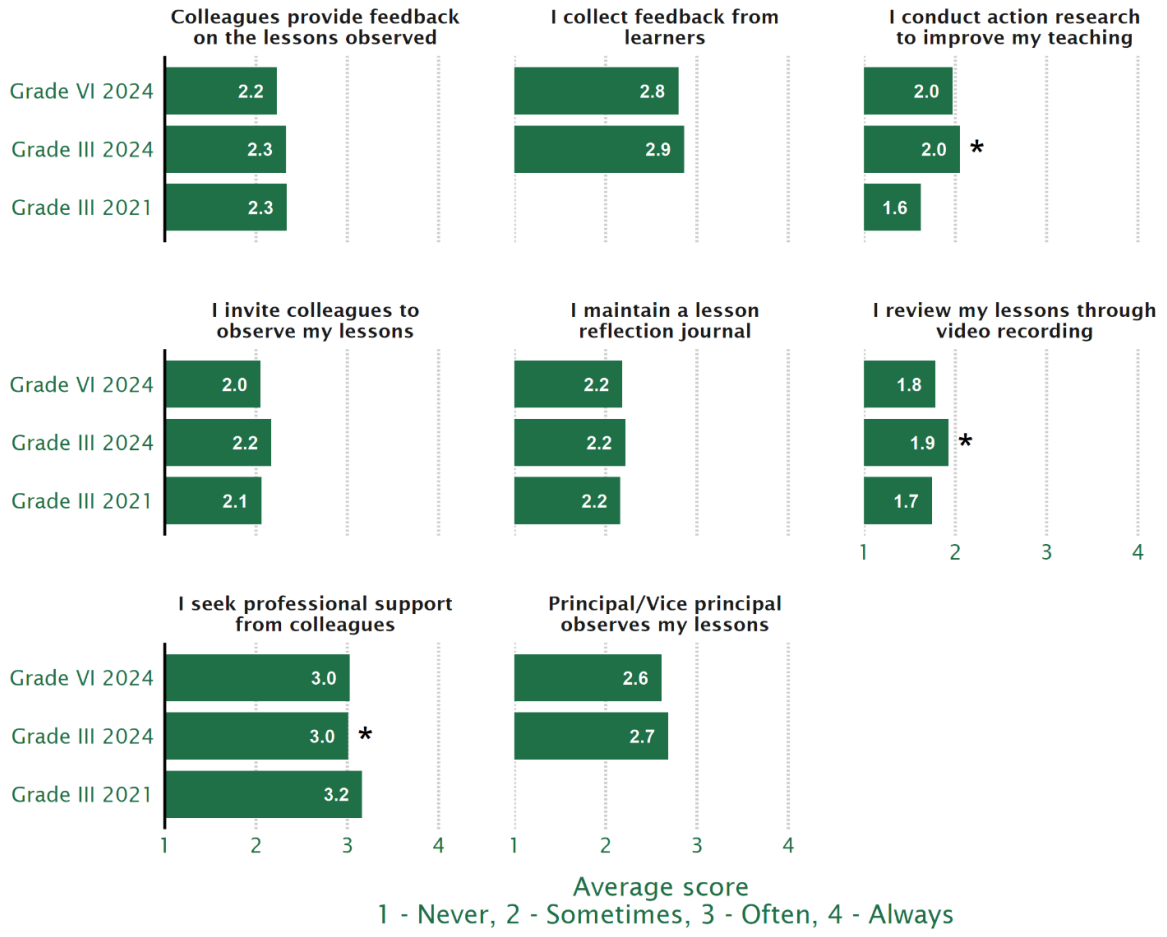
Figure 17.9 provides details of teachers' responses to statements about reflective practices. The highest mean ratings (3.0 in both grade III and grade VI in 2024) were for the statement 'I seek professional support from colleagues'. For grade III, this rating was significantly lower than in 2021, but remained high. Ratings for 'I collect feedback from learners' and 'Principal/Vice Principal observes my lessons' were also fairly high, indicating that these practices are fairly common.

The lowest mean rating was for the statement 'I review my lessons through video recording' (1.9 in grade III and 1.8 in grade VI in 2024). For grade III, this rating was significantly higher than in 2021 but remained the lowest rating for any statement.

The remaining mean ratings were at 2.0 or higher, indicating that the majority of teachers make at least some use of the different reflective practices. It was notable that, since 2021,

there was a significant increase in the mean rating for grade III teachers saying they 'conduct action research to improve my teaching'.

Figure 17.9: Teacher responses regrading reflective practices



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Chapter 18. Teacher job satisfaction and professional development

Key findings from this chapter

Motivation to teach and job satisfaction

- Teachers gave positive ratings to a number of aspects of their work. In particular, they generally feel they have good relationships with both other staff and students in their school.
- Grade III teachers' ratings of the extent to which they are supported by parents and the extent to which their initiatives are recognised have significantly improved since 2021.
- There was generally very little variation in job satisfaction between teachers with different characteristics.

Professional development

- Teachers and principals reported moderately positive impacts for a range of different types of professional development.
- Compared to 2021, grade III teachers in 2024 gave significantly higher ratings to the impact of professional development in action research.
- The type of professional development that teachers were least likely to have received was inclusive education.

Impact of teacher attrition

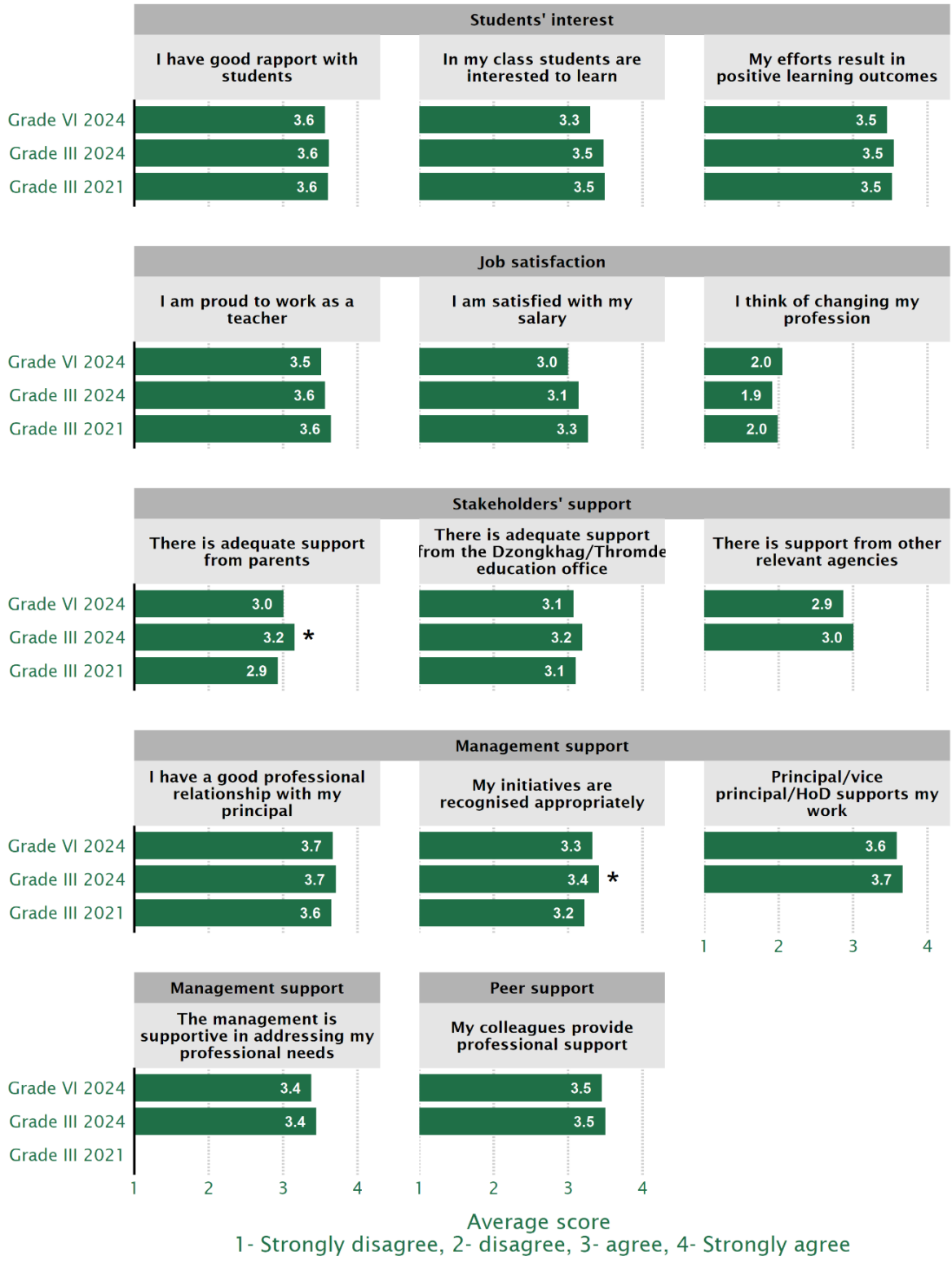
- Teachers, principals, and students are concerned about the impact of teacher attrition on the quality of their education.
- The teacher attrition rate nationally was 3% in the academic year 2024, which is lower than most OECD countries (OECD, 2024). Tsirang, Phuntsholing Thromde, and Punakha were the three districts with the highest attrition rate.

18.1. Motivation to teach and job satisfaction

Teachers' motivation to teach students was investigated through the teacher questionnaire. The questionnaire asked participants to rate several statements relating to their motivation to work in teaching on a scale of 1 ('strongly disagree') to 4 ('strongly agree'). The mean ratings for these questions are shown in Figure 18.1. Aside from the (somewhat different) statement 'I think of changing my profession', Figure 18.1 shows that teachers mean ratings were all fairly high (ranging from 2.9 to 3.7). The highest mean ratings (all at 3.6 or above) were seen for the statements 'I have good rapport with students', 'I have a good professional relationship with my principal', and 'Principal/vice principal/HoD supports my work'. This indicates that teachers generally feel they have good relationships with other people in their school. Very slightly lower, but still high, ratings were given to the statements 'In my class students are interested to learn', 'My efforts result in positive learning outcomes', 'I am proud to work as a teacher', 'The management is supportive in addressing my professional needs', and 'My colleagues provide professional support'. There has been no significant change in the mean rating since 2021 for any of these statements.

Slightly lower ratings, but still above 3.0 in 2024, were seen for the statements 'I am satisfied with my salary', "There is adequate support from the Dzongkhag/Thromde education office', 'There is adequate support from parents', and 'My initiatives are recognised appropriately'. It is notable that for the latter two statements the mean ratings from grade III teachers significantly increased between 2021 and 2024.

Figure 18.1: Teacher responses on factors relating to their motivation to teach



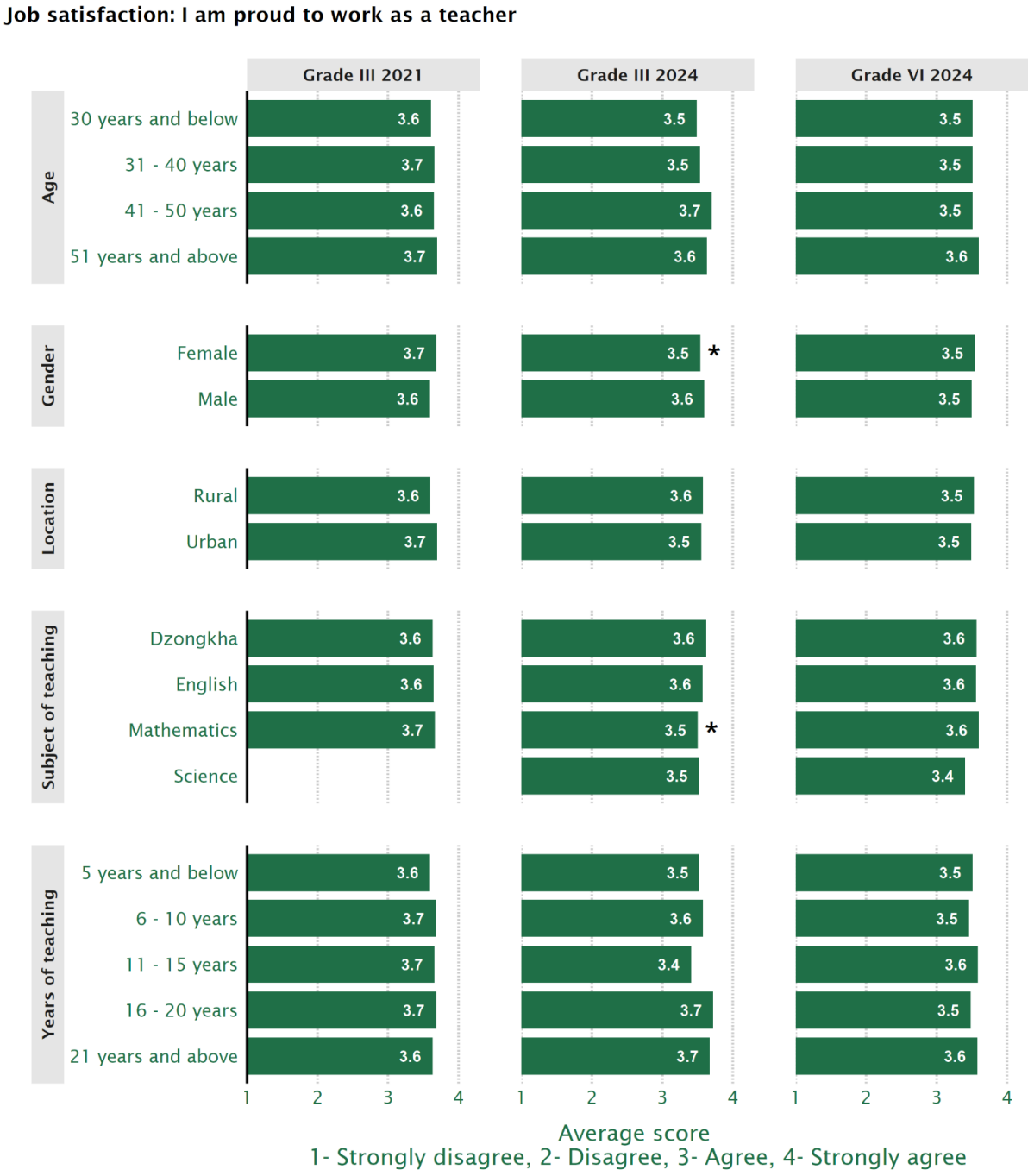
Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Figure 18.2 shows how teachers' mean ratings for the statement 'I am proud to work as a teacher' varied across teachers with different characteristics. This is shown separately for grade III teachers in 2021, grade III teachers in 2024, and grade VI teachers in 2024. Within each group, there was very little variation in mean ratings across the different characteristics. Significance testing was used to compare the mean rating of each subgroup of grade III teachers between 2021 and 2024. Two significant differences were identified. Firstly, female grade III teachers provided significantly lower mean ratings to this statement in 2024 than in 2021. Furthermore, grade III Mathematics teachers also provided significantly lower mean ratings in 2024 than in 2021. Nonetheless, in both of these subgroups, the absolute level of the mean rating remained high (3.5 in each case).

Similarly, Figure 18.3 shows how teachers' mean ratings for the statement 'I am satisfied with my salary' varied across teachers with different characteristics. There was, again, very little variation in the mean ratings given by teachers with different characteristics. Significance testing was used to compare the mean rating of each subgroup of grade III teachers between 2021 and 2024. Two significant differences were identified. Firstly, grade III teachers aged between 41 and 50 provided significantly lower mean ratings to this statement in 2024 than in 2021, perhaps indicating a drop in wage satisfaction amongst older teachers. Possibly relatedly, teachers in grade III with 21 or more years of teaching experience also provided significantly lower mean ratings in 2024 than in 2021. Nonetheless, in both of these subgroups, the absolute level of the mean rating remained high (3.1 or higher in each case).

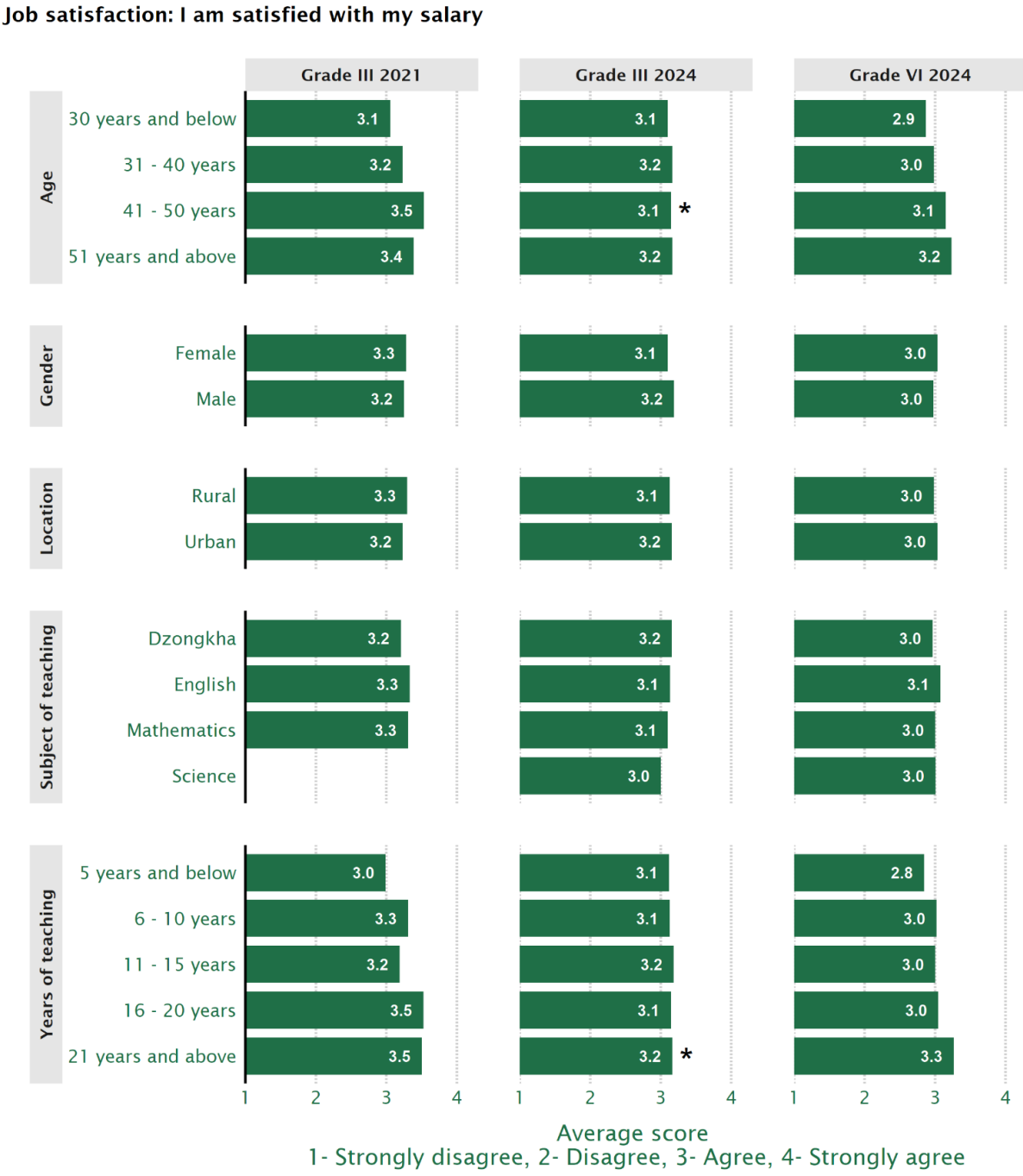
For a final comparison across subgroups of teachers, Figure 18.4 shows their mean ratings for the statement 'I think of changing my profession'. There was, again, very little variation in the mean ratings given by teachers with different characteristics. However, older teachers and those who had been teaching for the longest displayed the least agreement with the idea of leaving teaching. Significance testing was used to compare the mean rating of each subgroup of grade III teachers between 2021 and 2024. The only significant change was that male grade III teachers were significantly less likely to agree with this statement in 2024 compared to 2021.

Figure 18.2: Comparing pride in working as a teacher across teacher characteristics



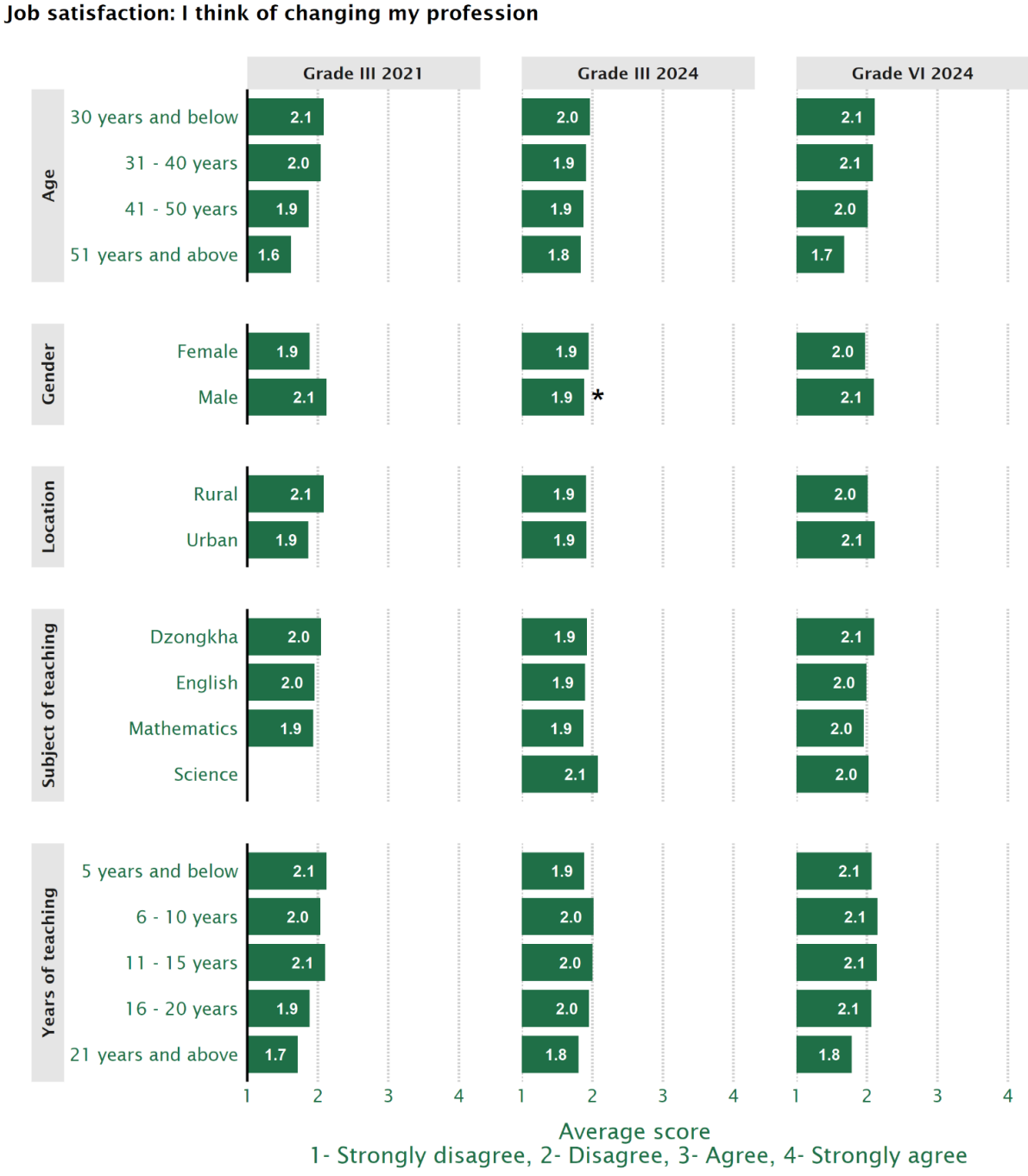
Notes: Bars marked with * show statistically significant differences from NEA 2021, based on tests conducted only for grade III teachers between 2021 and 2024. The categories for '30 years and below' and '5 years and below' were labelled 'less than 30 years' and 'less than 5 years' in NEA 2021; labels were adjusted for graphing, but no significance tests were run on these. Science was not a response option in NEA 2021 for questions on subject of teaching.

Figure 18.3: Comparing satisfaction with teacher salary across teacher characteristics



Notes: Bars marked with * show statistically significant differences from NEA 2021, based on tests conducted only for grade III teachers between 2021 and 2024. The categories for '30 years and below' and '5 years and below' were labelled 'less than 30 years' and 'less than 5 years' in NEA 2021; labels were adjusted for graphing, but no significance tests were run on these. Science was not a response option in NEA 2021 for questions on subject of teaching.

Figure 18.4: Comparing ratings for thoughts about leaving the profession across teacher characteristics

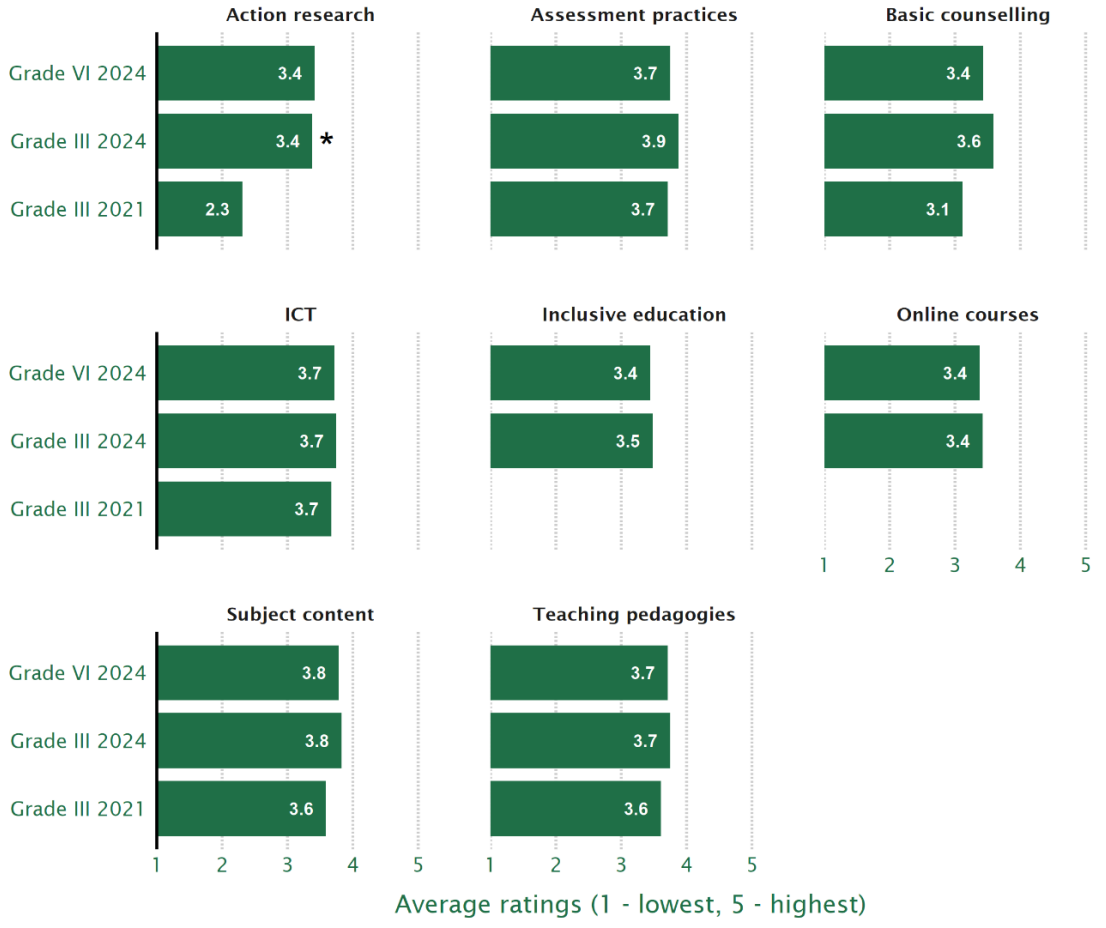


Notes: Bars marked with * show statistically significant differences from NEA 2021, based on tests conducted only for grade III teachers between 2021 and 2024. The categories for '30 years and below' and '5 years and below' were labelled 'less than 30 years' and 'less than 5 years' in NEA 2021; labels were adjusted for graphing, but no significance tests were run on these. Science was not a response option in NEA 2021 for questions on subject of teaching.

18.2. Professional development

Teachers were asked to evaluate the impact of Professional Development (PD) programmes on a scale of 1 to 5, with 1 being the lowest and 5 being the highest. Teachers were also allowed to say that a type of PD was 'not applicable'; any teachers that did this were excluded from the calculation of the mean[4]. Teachers' mean ratings are shown in Figure 18.5. The 2024 ratings ranged from 3.4 to 3.9, indicating teachers felt that each type of PD had a moderately positive impact. One significant change was found for grade III teachers: the mean rating for 'Action research' rose from 2.3 in 2021 (by far the lowest rating) to 3.4 in 2024. It is interesting to note that Figure 17.9 also indicates that teachers had increased their use of action research as a reflective practice.

Figure 18.5: Teacher responses regarding the impact of Professional Development (PD)

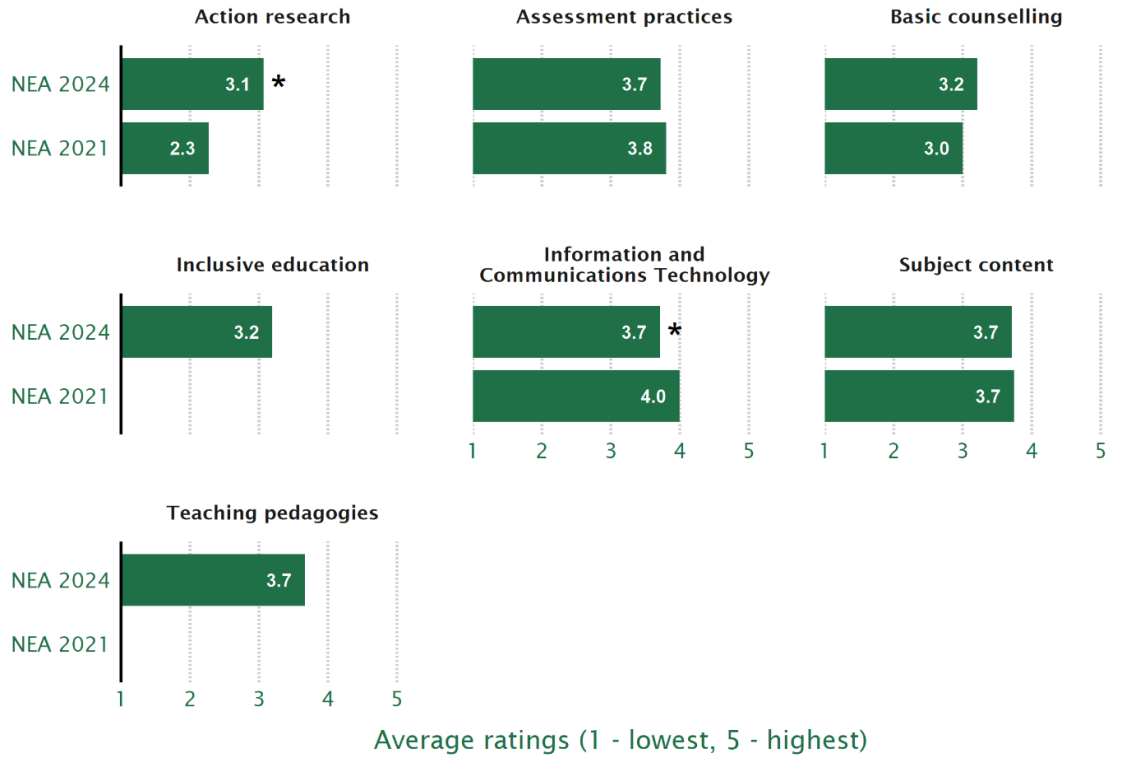


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

[4] These teachers were not removed from calculations in the 2021 NEA report. For this reason, the values in this chart for 2021 are somewhat different from those published previously.

Principals also evaluated the impact of PD programmes on the professional growth of teachers on a scale of 1 to 5, with 1 being the lowest and 5 being the highest. Principals were allowed to say that a type of PD was 'not applicable'; those who did this were excluded from the calculation of the mean. Principals' mean ratings are shown in Figure 18.6. The NEA 2024 ratings ranged from 3.1 to 3.7, indicating principals felt that each type of PD had a moderately positive impact on teachers. One significant change was found for 'Action research', which increased from 2.3 in the NEA 2021 to 3.1 in the NEA 2024. This is consistent with what teachers indicated in Figure 18.5, where the impact of action research also rose in 2024.

Figure 18.6: Principal responses regarding the impact of PD on teachers

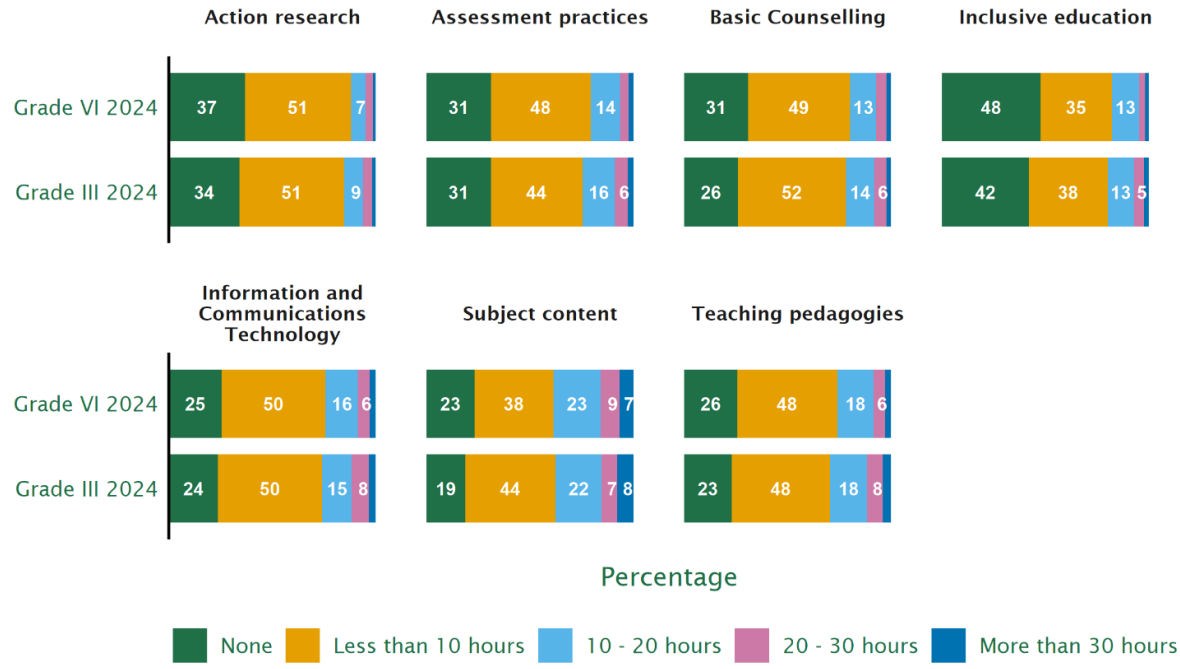


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Figure 18.7 shows the number of hours for which teachers participated in different types of PD programmes in 2024. Within each area, the majority of teachers received less than 10 hours of PD (i.e., 'none' or 'less than 10 hours'). In both grades III and VI, the areas for which teachers were most likely to say they had received no PD were 'Action research' (34% of grade III teachers and 37% of grade VI teachers) and, rather more so, 'Inclusive education' (42% in grade III and 48% in grade VI). Teachers were much more likely to report having

received at least some PD in 'ICT', 'Subject content', and 'Teaching pedagogies'.

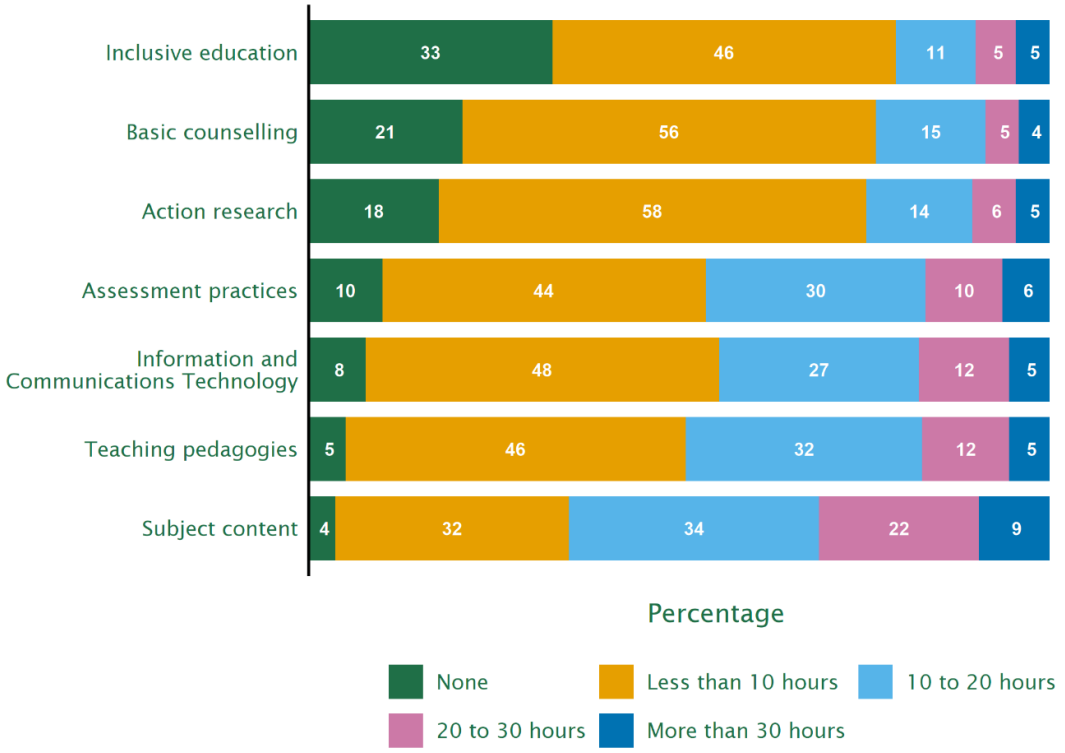
Figure 18.7: Hours of PD programmes received in 2024, by area, as reported by teachers



Note: Results from NEA 2021 results are excluded due to noticeable changes in response options in NEA 2024.

Figure 18.8 shows the number of hours for which teachers participated in different types of PD programmes in 2024, as reported by principals. The majority of teachers received less than 10 hours of PD (i.e., 'none' or 'less than 10 hours') in all areas, except for subject content, where 65% of principals reported that teachers received at least 10 hours of training. The areas in which principals were most likely to report that teachers had received no PD in 2024 were inclusive education, basic counselling, and action research.

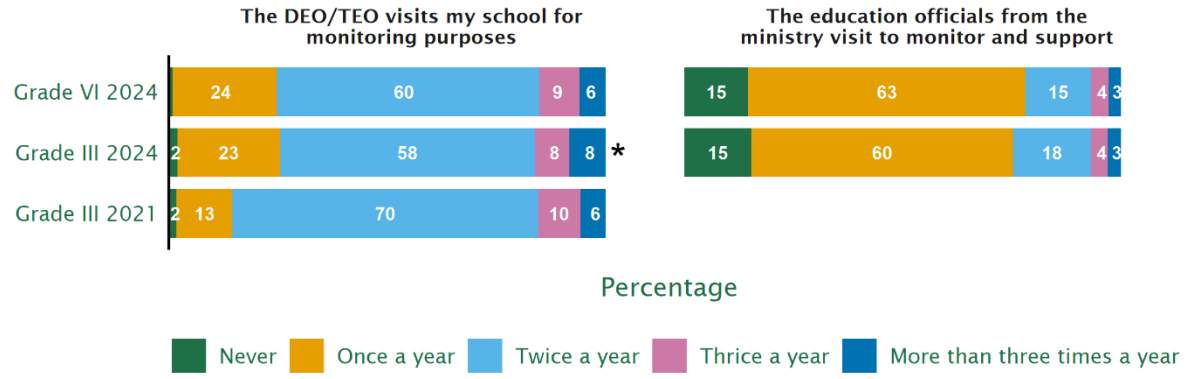
Figure 18.8: Hours of PD programmes that teachers received in 2024, by area, as reported by principals



Note: Results from NEA 2021 are excluded due to noticeable changes in response options in NEA 2024.

Teachers were also asked how often they receive monitoring visits from the District Education Officer (DEO) and/or Thromde Education Officer (TEO), or from education officials from the ministry. Their responses are shown in Figure 18.9. The majority of teachers stated that the DEO/TEO visits the school for monitoring purposes twice a year and the vast majority (at least 90%) said that this happened between 1 and 3 times. The percentage of grade III teachers saying the DEO/TEO visits twice a year significantly dropped between 2021 and 2024, whilst the percentage of teachers saying they visited just once a year increased. The majority of teachers (60% in grade III and 63% in grade VI) said that education officials from the ministry visit once a year. However, in both grade III and grade VI, 15% of teachers said this never happened.

Figure 18.9: Teacher responses relating to monitoring visits



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Significance tests were conducted only on grade III teachers between 2021 and 2024 cycles. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

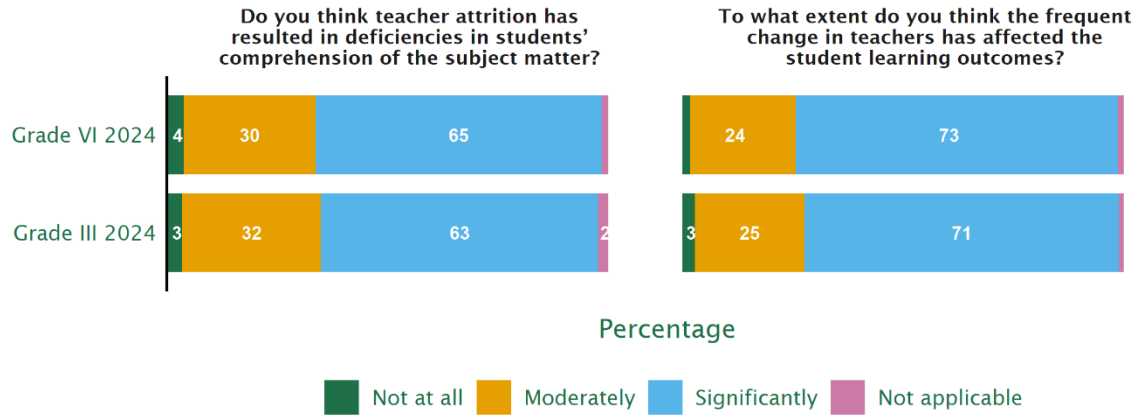
18.3. Impact of teacher attrition

Figure 18.10 and Figure 18.11 summarise teachers' and principals' views on how much teacher attrition and – likely related – frequent changes of teachers have affected students' learning. For both questions, and in both grade III and grade VI, the majority of teachers and principals said these factors have affected students 'significantly', with nearly all of the remaining teachers saying this has affected them 'moderately'.

Related to this, Figure 18.12 shows students' own views on how much teacher attrition and changes to the teachers teaching each subject has affected their learning. Compared to teachers' views, students generally rated the impact of these factors as less severe, with the largest group of students saying this had a moderate effect. A notable minority (between 31% and 38%) said this had impacted them 'not at all', however, this still implies that the clear majority of students (between 62% and 69%) felt that teacher attrition and changes to teachers had affected their learning.

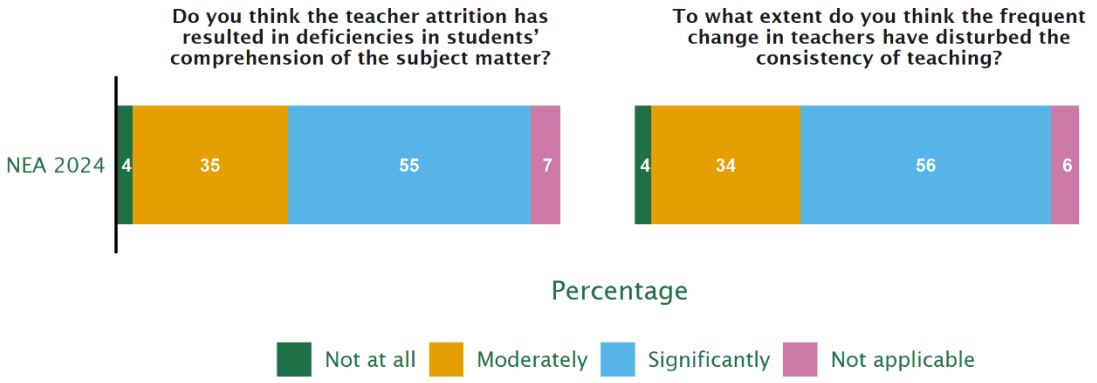
Together, these figures indicate that teachers, principals, and students are concerned about the impact of teacher attrition on the quality of their education.

Figure 18.10: Teacher views on the impact of teacher attrition on students



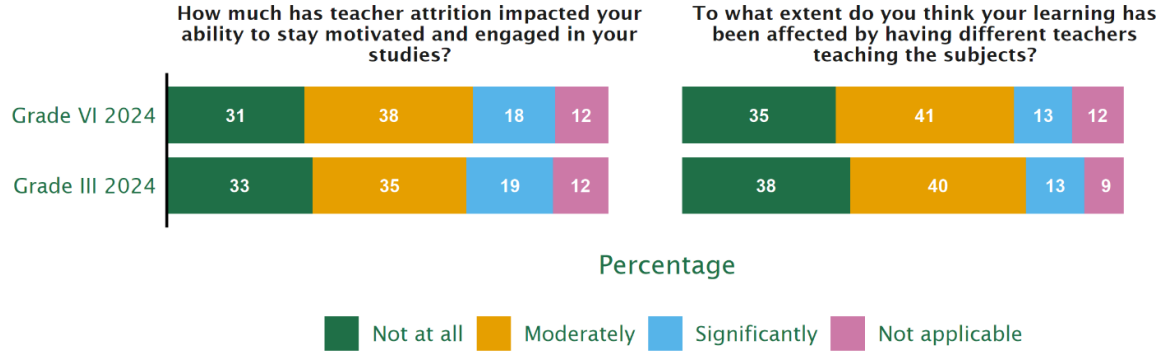
Note: Results from NEA 2021 are not shown here as these questions were not asked in NEA 2021.

Figure 18.11: Principal views on the impact of teacher attrition on students



Note: Results from NEA 2021 are not shown here as these questions were not asked in NEA 2021.

Figure 18.12: Student views on teacher attrition affecting their studies

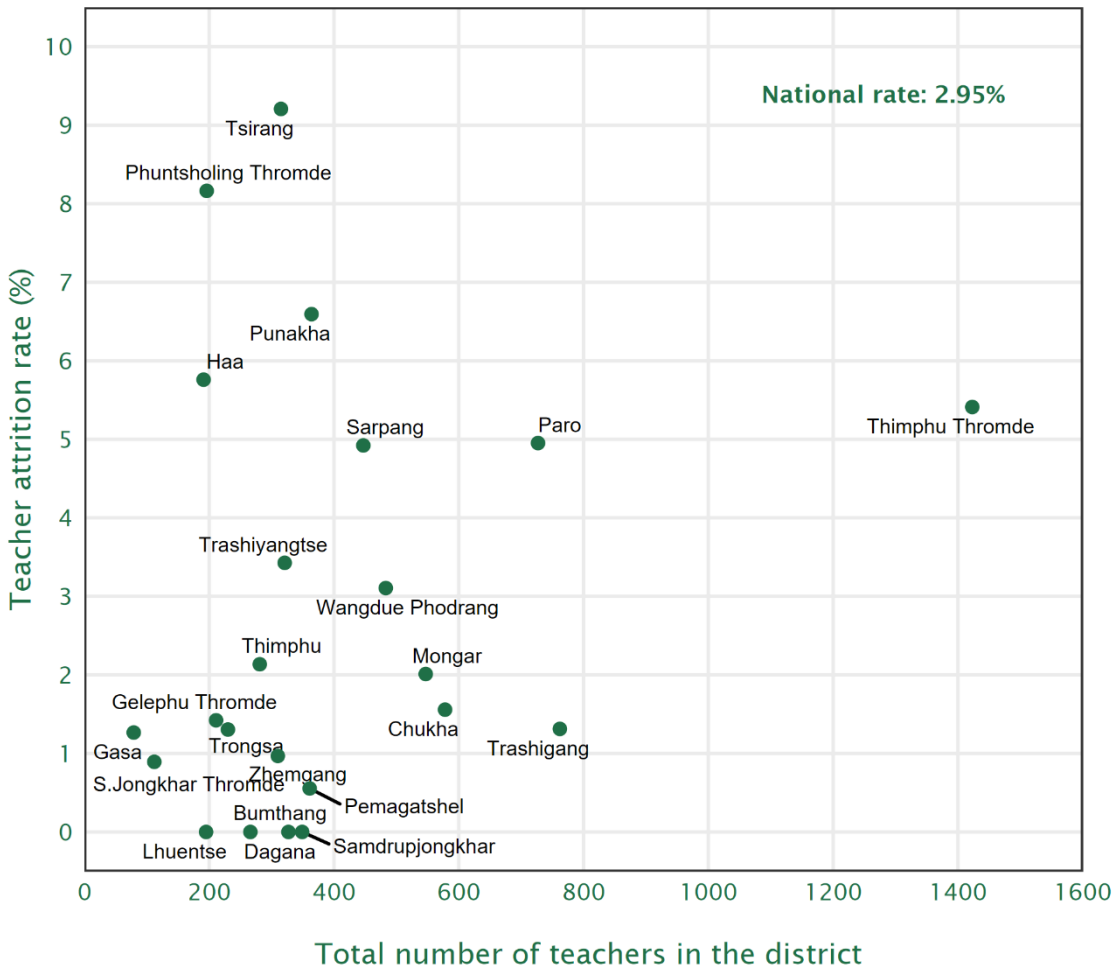


Note: Students were not asked about the impacts of teacher attrition in the NEA 2021 cycle.

To understand the prevalence of this issue, Figure 18.13 shows the teacher attrition rate nationally and across districts, based upon data reported by Chief District and Chief Thromde Education Officers (CDEOs/CTEOs) in the 2024 academic year.

Nationally, the teacher attrition rate in Bhutan is 3%. This is comparable to the teacher attrition rate (including both full-time and part-time teachers) for Turkey, France, Greece, and Ireland (OECD, 2024, p.23), but lower than most OECD countries. The seven districts with a teacher attrition rate close to 5% or above were Tsirang, Phuntsholing Thromde, Punakha, Haa, Thimphu Thromde, Paro, and Sarpang.

Figure 18.13: Total number of teachers and teacher attrition rate in academic year 2024, as reported by CDEOs/CTEOs, by district



Notes: Data is based on numbers reported by CDEOs/CTEOs. No data was provided by Samtse. In Haa, it was reported that the number of teacher attritions was 'more than 10' in 2024; this was assumed to be 11, representing a lower-end estimate.

Chapter 19. Insights from principals

Key findings from this chapter

School background

- Most principals felt that School Management Board meetings contributed to overall school improvement. In addition, the NEA 2024 provided evidence of increased provision of mentoring programmes for teachers.

- The internet bandwidth in schools significantly improved in the NEA 2024.

Principals' attitude towards their profession

- The majority of principals gave fairly high mean ratings to statements related to their attitudes, with no significant changes from 2021, in most cases. While principals felt that support from local government had increased, they also felt their efforts were less likely to result in positive student learning outcomes, compared to 2021.

Teacher efficacy

- Most principals reported high levels of teacher efficacy, particularly in the use of Information and Communications Technology (ICT) tools to support teaching and learning, and the teamwork required to improve students' levels of achievement.

Teacher behaviour

- Roughly 1 in 4 of principals indicated issues with alcohol abuse or unjustified absence amongst teachers. Furthermore, roughly 1 in 3 reported they faced issues with teachers using abusive language. These proportions are similar to 2021.

Monitoring and support

- Most principals felt that monitoring and support from both the Ministry of Education and Skills Development (MoESD) and the Dzongkhag/Thromde education office had contributed to improving the school system and student learning. There were no significant differences across NEA cycles.

Principals' job satisfaction

- Most principals reported being satisfied with their salary; however, overall salary satisfaction declined compared to 2021. Principals' salary satisfaction was similar across most demographic groups, but it was significantly lower in the NEA 2024 among males and those aged 41–50 years, relative to 2021.

- The majority of principals reported feeling proud to work in their profession and most of them were not considering a career change.

This chapter summarises data from the principal questionnaire, focussing on school this background, their attitude towards their profession, teacher efficacy, school environment, and monitoring and supervision practices. These insights offer a deeper contextual understanding of the factors that shape the delivery of education in Bhutan.

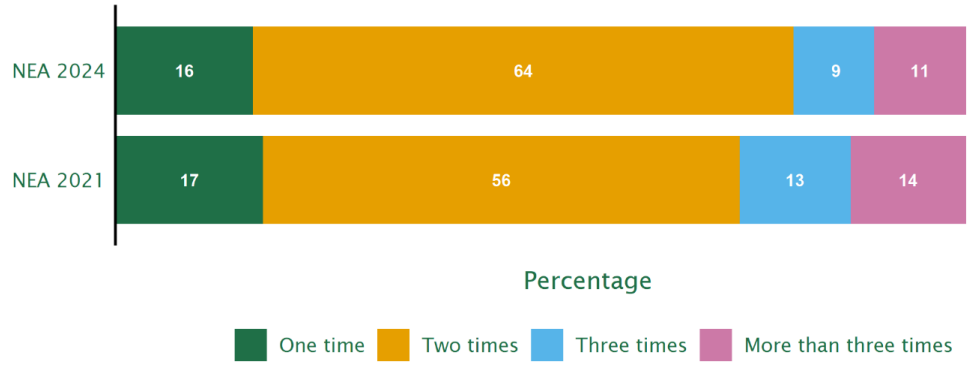
As with previous chapters, significance tests were used to compare responses between the NEA 2024 and the NEA 2021. However, as noted in the Introduction chapter, large differences between cycles may not be statistically significant when there is a small population (or sample) size, meaning that large fluctuations are more likely to occur by chance.

19.1. School background

Principals were asked about School Management Board meetings, community involvement with the school, and programmes the school provides to teachers. Figure 19.1 and Figure 19.2 summarise principals' responses about School Management Board meetings.

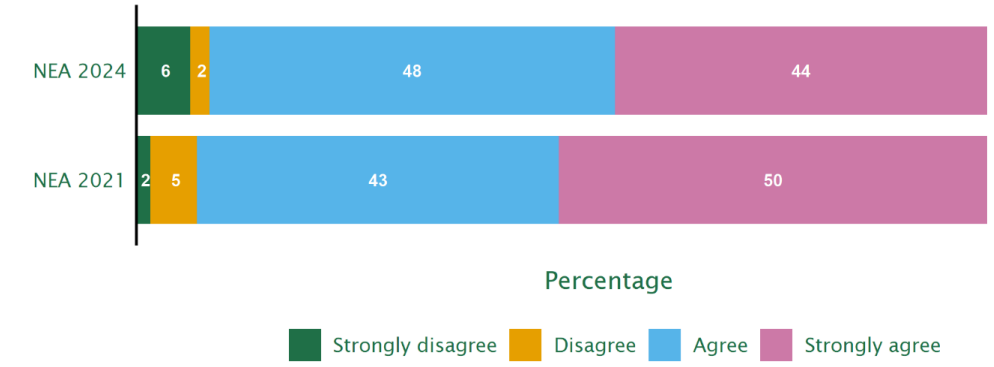
Principals reported having School Management Board meetings more frequently in the NEA 2021 than in the NEA 2024. A higher percentage of principals reported having these meetings at least three times a year in the NEA 2021 (27% in 2021 vs. 20% in 2024). Most principals in both NEA cycles agreed that School Management Board meetings are helpful for overall school improvement; just 8% of principals disagreed or strongly disagreed in the NEA 2024, and 7% in the NEA 2021. Nonetheless, overall frequency and agreement were not statistically different across NEA cycles.

Figure 19.1: Principal responses on the frequency of School Management Board meetings



Note: Bars marked with * indicate statistically significant differences from NEA 2021.

Figure 19.2: Principal responses on whether School Management Board meetings are helpful

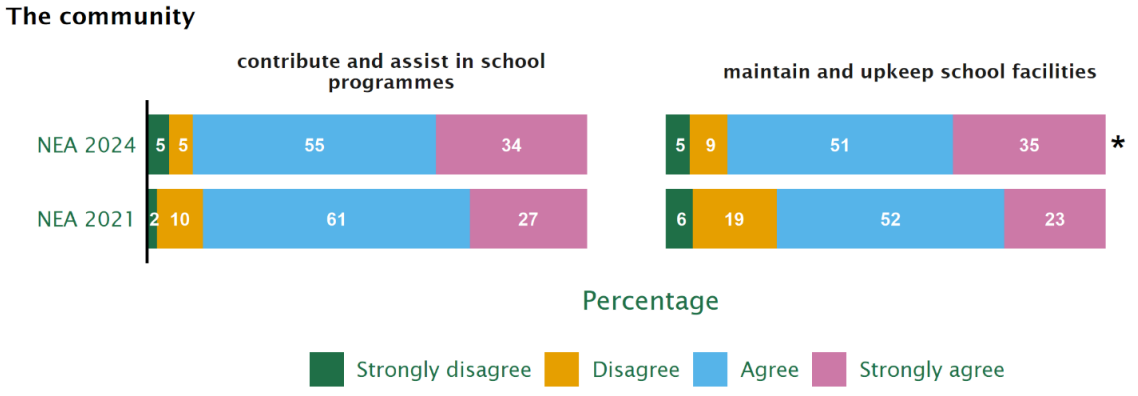


Note: Bars marked with * indicate statistically significant differences from NEA 2021.

Principals were also asked about community involvement with the school (see Figure 19.3). Compared to the NEA 2021, a higher proportion of principals in the NEA 2024 strongly agreed that the community 'Contribute and assist in school programmes' (34% in 2024 vs 27% in 2021). However, overall agreement was similar across NEA cycles.

In contrast, principals in 2024 reported higher levels of agreement that the community 'Maintain and upkeep school facilities', compared to 2021 (86% in 2024 vs 75% in 2021). Overall agreement was statistically different across cycles, suggesting that principals perceived a higher community involvement in the maintenance and upkeep of school facilities in 2024.

Figure 19.3: Principal responses to statements related to community involvement with the school



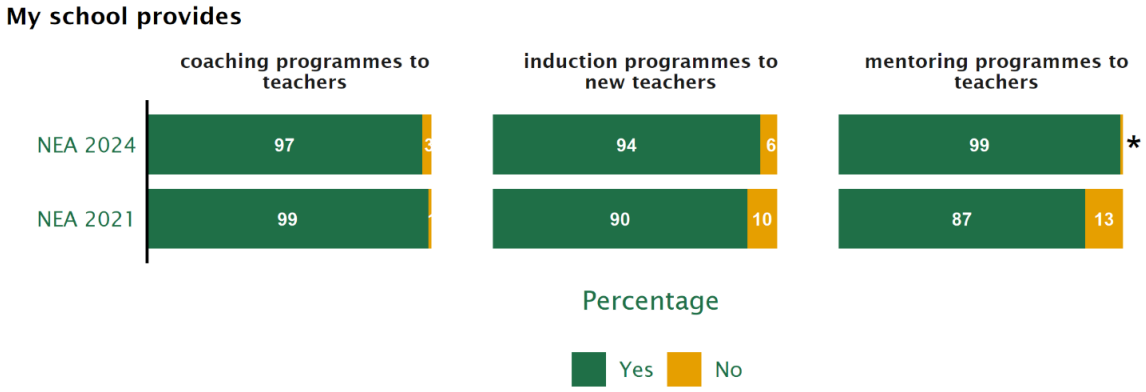
Note: Bars marked with * indicate statistically significant differences from NEA 2021.

Principals also reported on whether their school provided programmes for teachers (see Figure 19.4). Overall, more than 90% of principals in 2024 indicated that their school provides coaching, induction, and mentoring programmes to teachers. Whilst programme provision was high across NEA cycles, there was a statistically significant difference in

mentoring programs, suggesting that in 2024, principals reported higher provision of mentoring programs to teachers than in 2021 (99% in 2024 vs 87% in 2021).

It is important to note that the wording in 2021 was 'mentoring programmes to junior teachers', whereas in 2024, it was 'mentoring programmes to teachers'. Therefore, the reported provision might have increased because the wording included all teachers in 2024.

Figure 19.4: Principal responses to statements related to programmes provided by their schools



Note: Bars marked with * indicate statistically significant differences from NEA 2021.

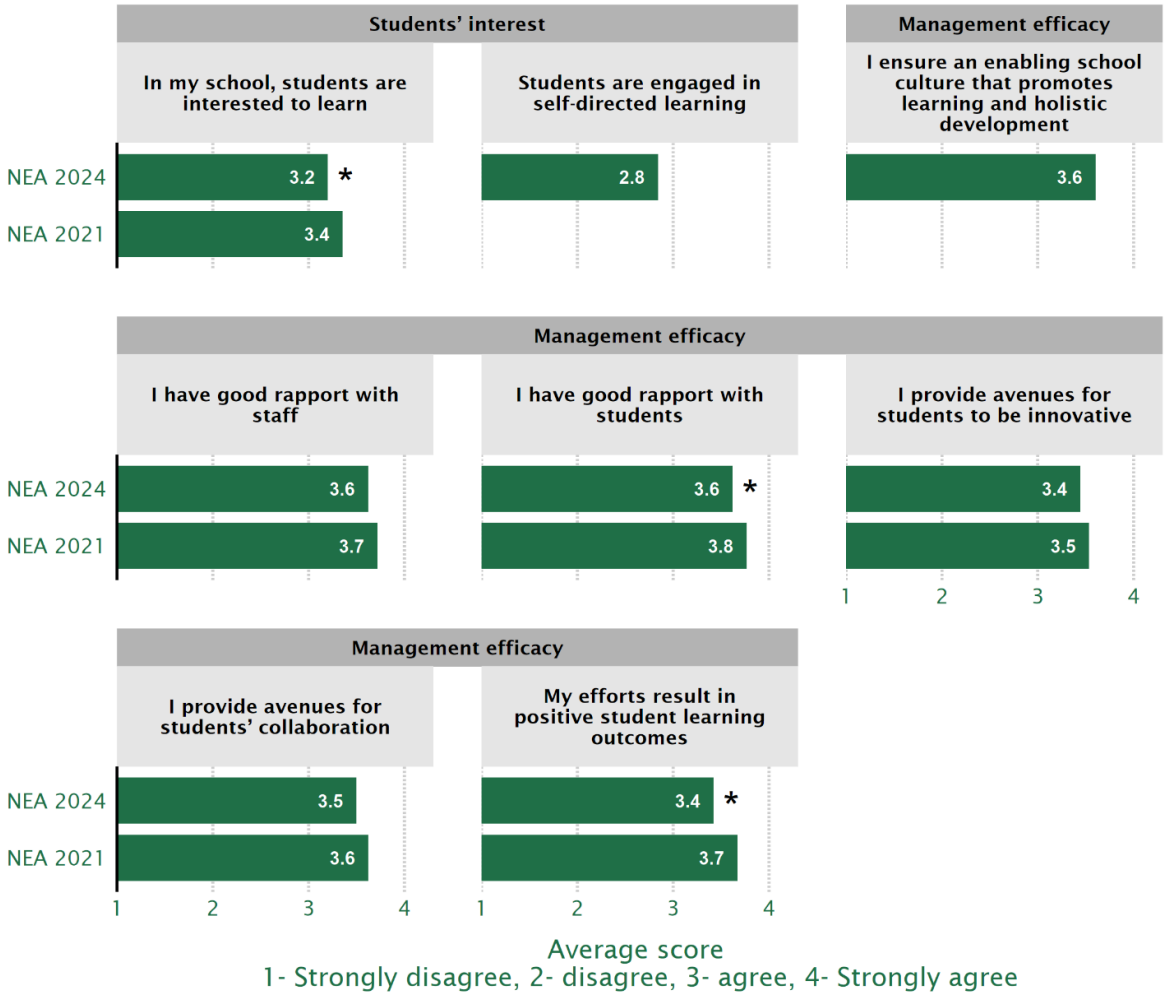
19.2. Principals' attitude towards their profession

Principals were asked about their attitude towards their profession. The questionnaire asked participants to rate several statements relating to their profession on a scale of 1 ('strongly disagree') to 4 ('strongly agree'). The mean ratings for these questions are shown in Figure 19.5 and Figure 19.6. Figure 19.5 shows that principals' mean ratings were all fairly high (ranging from 3.2 to 3.6) in 2024, except for the statement 'Students are engaged in self-directed learning', which had a mean rating of 2.8. For most statements, there was no significant change in the mean rating since 2021, with three exceptions: 'In my school, students are interested to learn', 'I have good rapport with students', and 'My efforts result in positive student learning outcomes'. Ratings for all three of these statements significantly decreased in 2024, compared to 2021; however, they are all still above 3.0 in 2024.

Figure 19.6 also shows that principals' mean ratings were all fairly high (ranging from 3.0 to 3.6) in 2024, except for the statement 'I think of changing my profession', which had a mean rating of 2.0. This, however, is positive because it suggests that most principals do not wish to change their profession. For most statements, there was no significant change in the mean rating since 2021, with two exceptions: 'I am satisfied with my salary' and 'There is adequate support from local government'. Ratings for these statements significantly changed in 2024, compared to 2021. In 2024, principals were slightly less satisfied with their salaries, compared to 2021. However, they perceived higher levels of

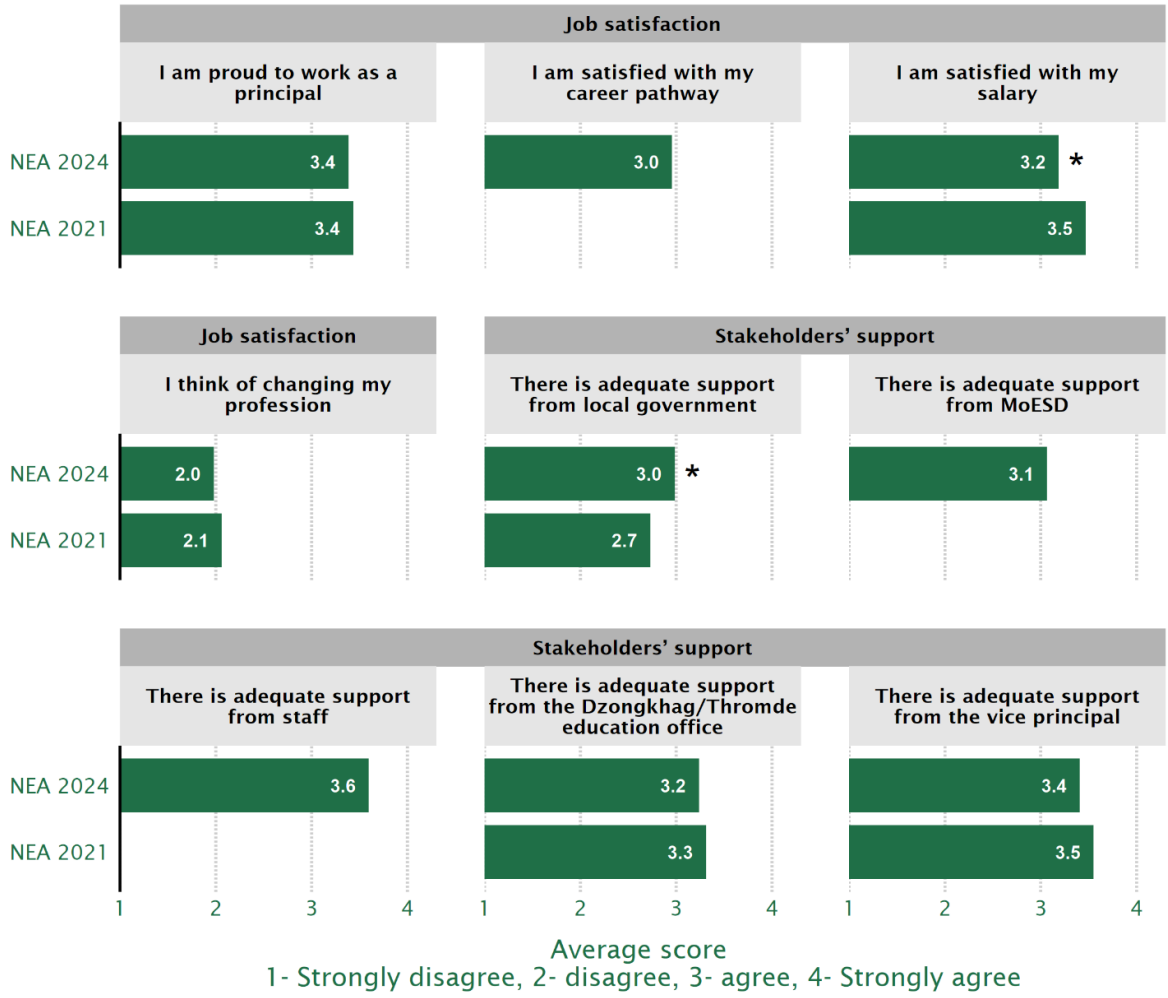
support from local government relative to 2021.

Figure 19.5: Principal attitudes towards their profession – students' interest and management efficacy



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Figure 19.6: Principal attitudes towards their profession – job satisfaction and stakeholders' support

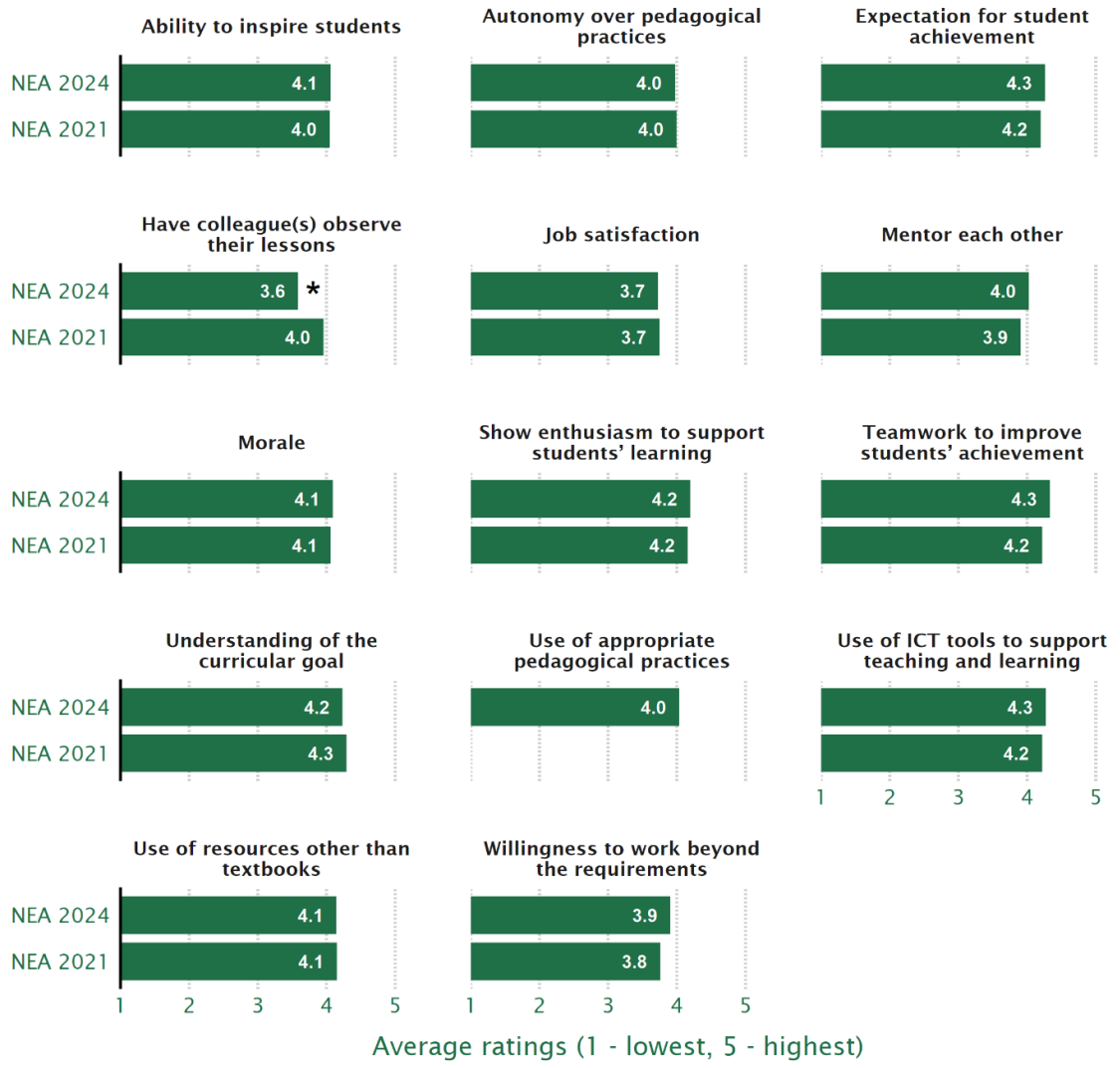


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

19.3. Teacher efficacy

Principals were asked to rate teacher efficacy on a scale of 1 to 5, with 1 being the lowest and 5 being the highest (see Figure 19.7). The NEA 2024 ratings ranged from 3.6 to 4.3, indicating that principals observed high levels of teacher efficacy. One significant change was found for the mean rating of 'Have colleague(s) observe their lessons', which slightly decreased from 4.0 in 2021 to 3.6 in 2024.

Figure 19.7: Principal views about teacher efficacy



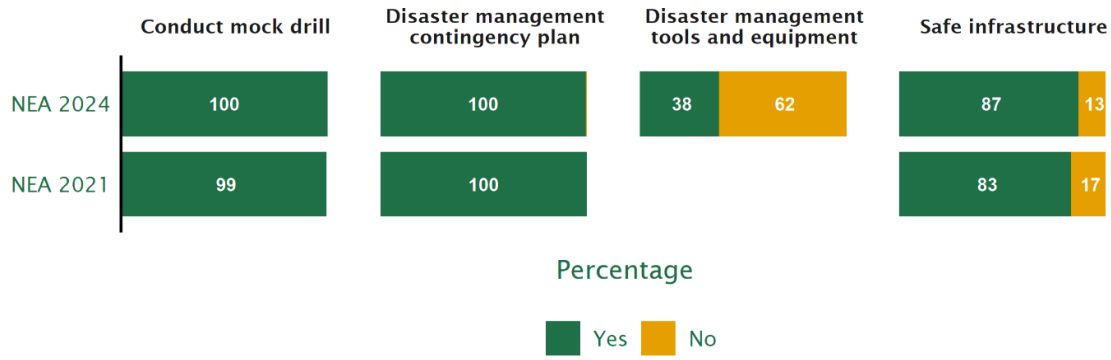
Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded as these questions were not asked in NEA 2021.

19.4. School environment

19.4.1. Safety measures and internet bandwidth

Principals reported on whether safety measures were in place at their school (see Figure 19.8). In the NEA 2024, all principals reported conducting mock drills and having a disaster management contingency plan. Safety measures related to safe infrastructure were in place according to 87% of principals in 2024 compared to 83% in 2021. In contrast, 62% of principals in 2024 reported that safety measures related to disaster management tools and equipment were not in place in their school.

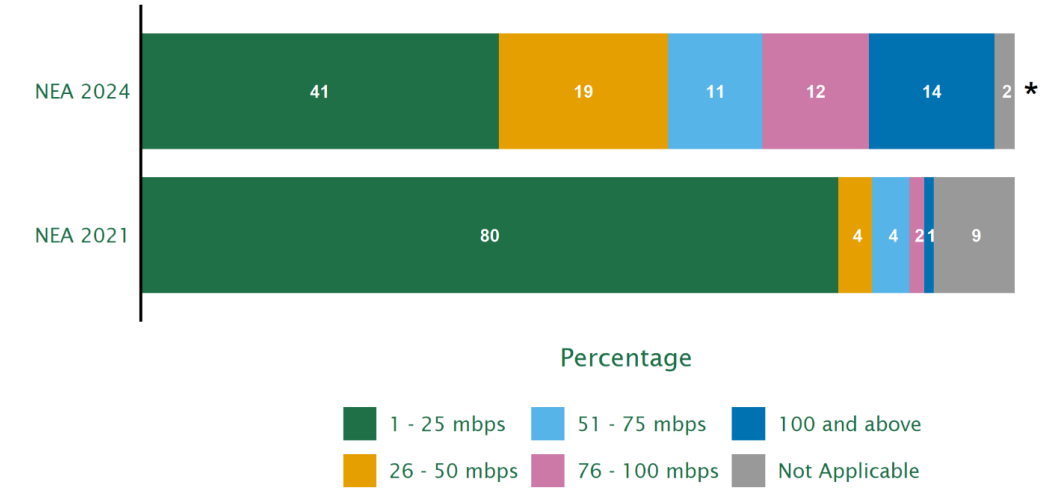
Figure 19.8: Principal responses regarding school safety measures



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Figure 19.9 indicates that the internet bandwidth in schools has significantly improved between NEA cycles. In 2021, 80% of principals reported having an internet bandwidth of 1–25 mbps, whereas in 2024, the percentage declined by almost half (41%). In contrast, the percentage of principals who reported an internet bandwidth between 26–50 mbps quintupled between 2021 and 2024 (4% in 2021 vs 19% in 2024).

Figure 19.9: Principal responses regarding school internet bandwidth

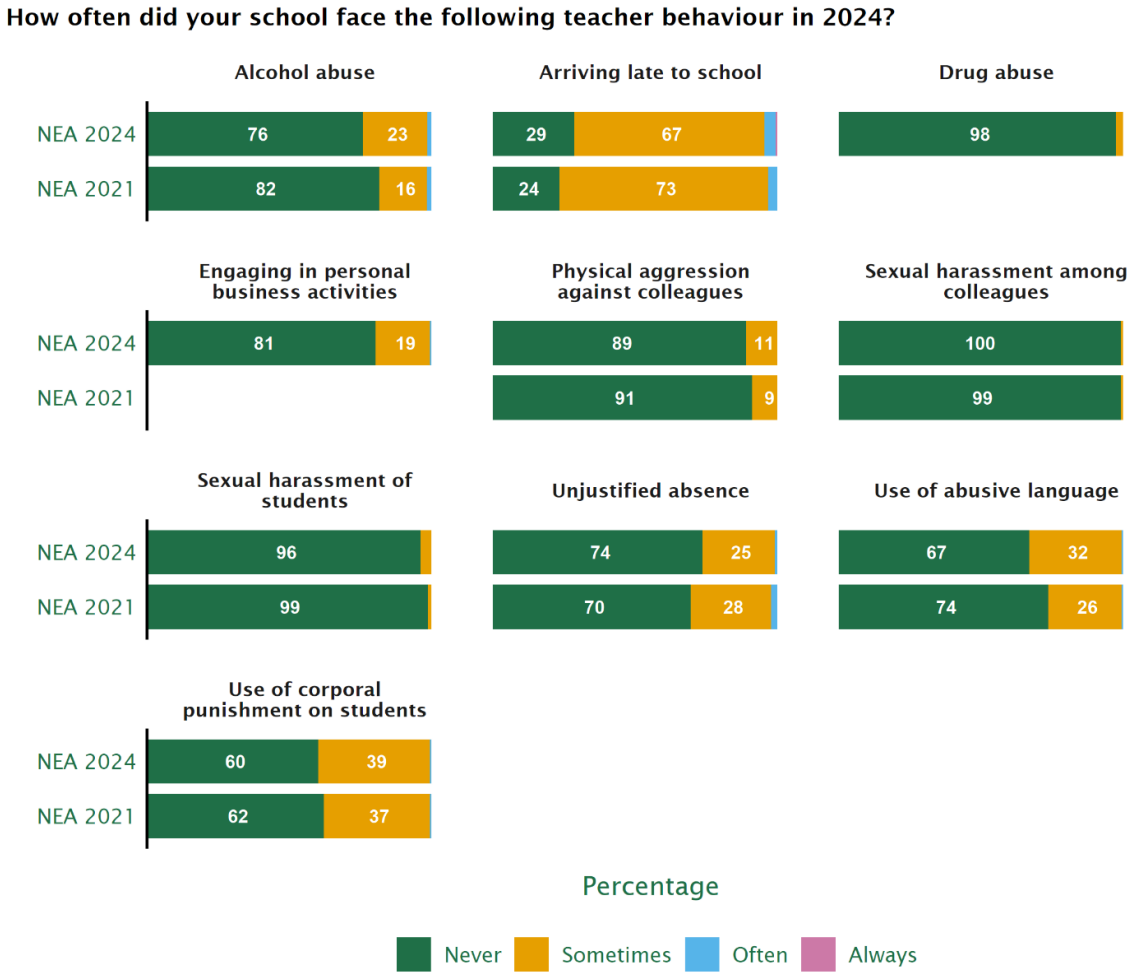


Note: Bars marked with * indicate statistically significant differences from NEA 2021.

19.4.2. Teacher and student behaviour

Principals reported on both teacher and student behaviour in 2024. Figure 19.10 summarises principals' responses to statements about how often their school faced different types of teacher behaviour. Whilst nearly all principals in 2024 reported that their school had never faced issues with sexual harassment among colleagues, sexual harassment of students, or drug abuse by teachers, some principals reported that their school had at least sometimes faced the following teacher behaviour in 2024: alcohol abuse (24%), unjustified teacher absence (26%), use of abusive language (33%), and use of corporal punishment on students (40%). Lastly, most principals (71%) reported that teachers at least sometimes arrived late to school. Compared to the NEA 2021, the overall frequency of these events was similar in 2024; there was no significant change.

Figure 19.10: Principal responses regarding teacher behaviour

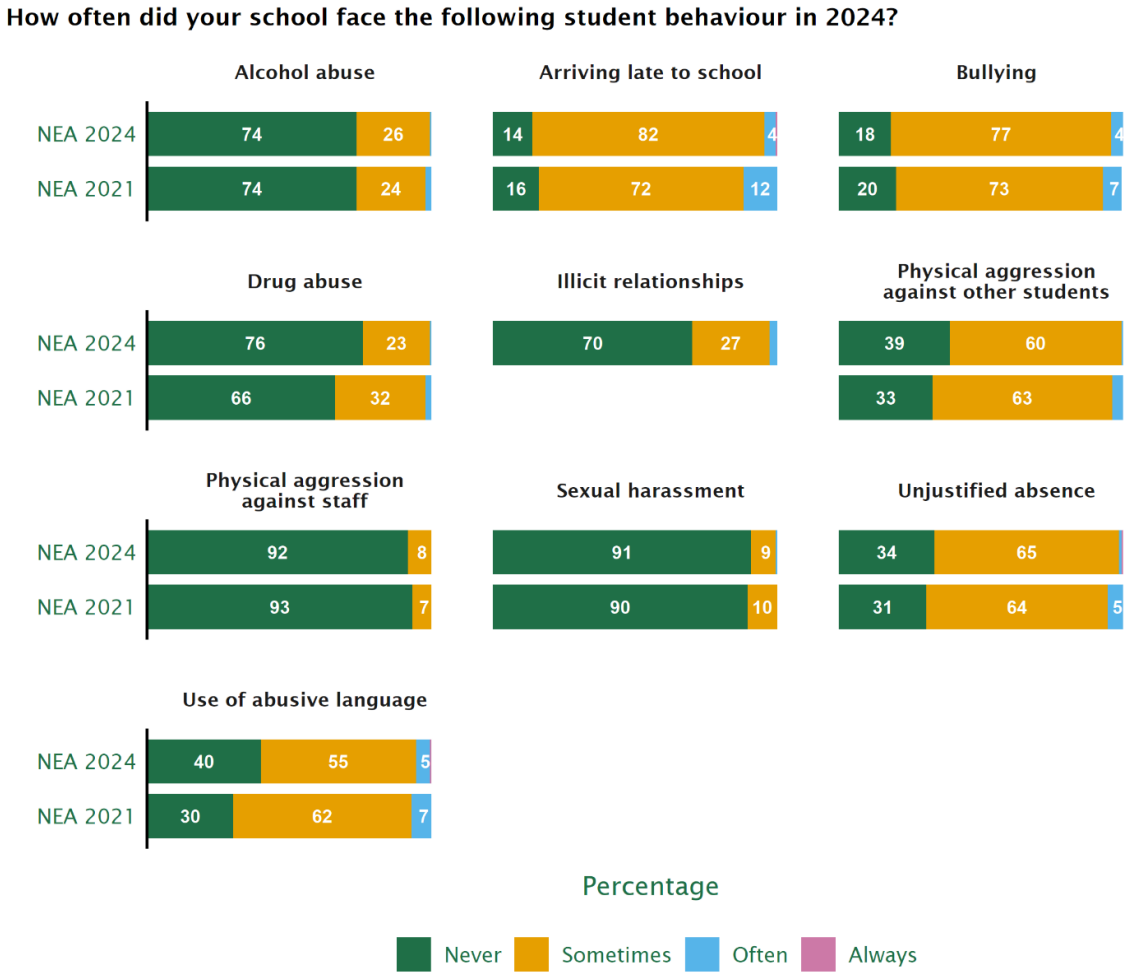


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

Principals were also asked about student behaviour; Figure 19.11 summarises their responses. The vast majority of principals reported that their school had never faced issues with physical aggression against staff or sexual harassment. Some principals reported observing the following student behaviour at least sometimes in their school in 2024: drug abuse (24%), alcohol abuse (26%), and illicit relationships (30%).

In contrast, student behaviour that most principals reported as occurring at least 'sometimes' in 2024 included physical aggression against other students (61%), unjustified absences (66%), bullying (82%), and students arriving late to school (86%). Compared to 2021, the frequency of these types of student behaviour was not significantly different in 2024.

Figure 19.11: Principal responses regarding student behaviour

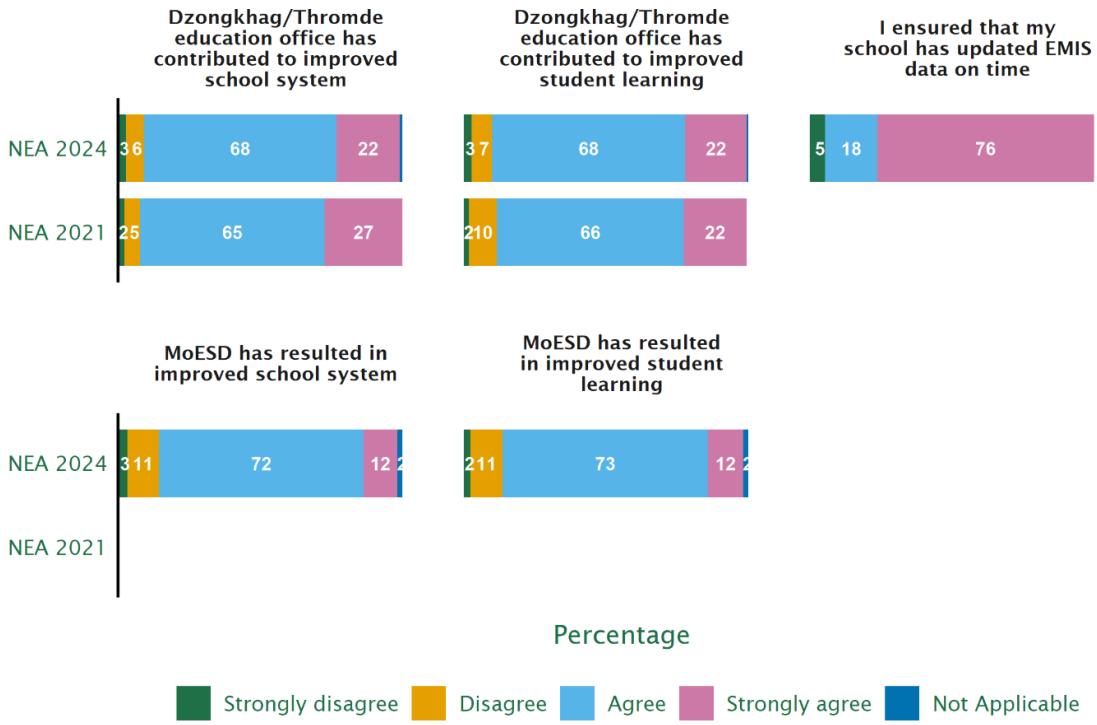


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

19.5. Monitoring and support

Principals were asked to indicate their level of agreement with statements about the impact of monitoring and support that they received from different stakeholders in 2024. Figure 19.12 shows that most principals agreed that the monitoring and support received from the MoESD resulted in improved student learning (73%) and an improved school system (72%), and that the Dzongkhag/Thromde education office contributed to an improved school system (68%) and improved student learning (68%) with many others strongly agreeing. Most principals (76%) strongly agreed with the statement 'I ensured that my school has updated EMIS data on time'. There were no significant differences across NEA cycles.

Figure 19.12: Principal responses about the impact of monitoring and support received in 2024



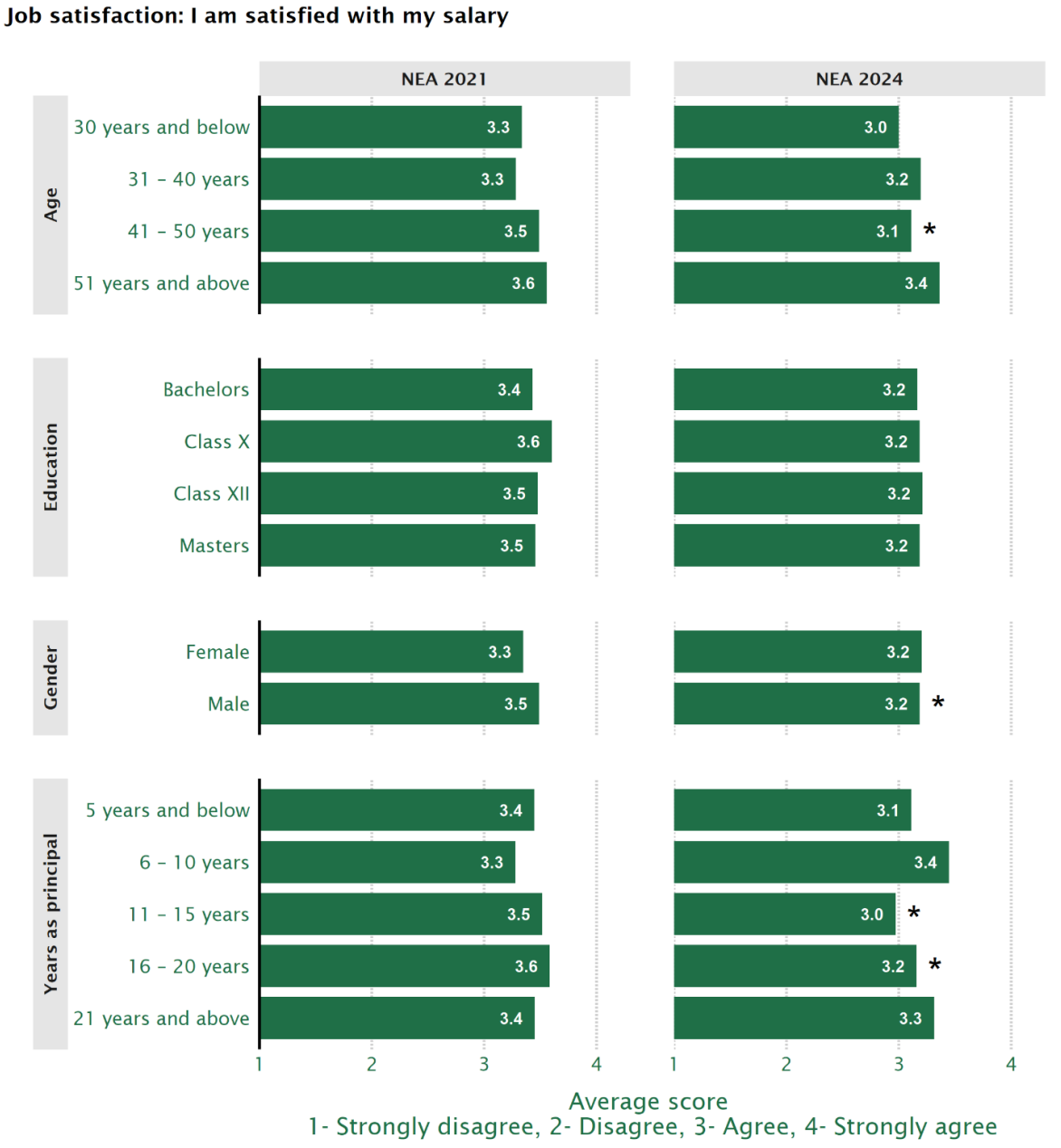
Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes in NEA 2024 that may affect comparability.

19.6. Principals' job satisfaction

Statements related to job satisfaction were disaggregated across multiple principals' characteristics. Figure 19.13 summarises how principals' mean ratings varied for the statement 'I am satisfied with my salary'. The mean ratings in 2024 ranged from 3.0 to 3.4. There was no variation across different education levels or gender. There was some variation within age groups and the number of years spent working as a principal: principals aged 30 or below had a rating of 3.0, whereas principals aged 51 years and above had a mean rating of 3.4.

Significance testing was used to compare the mean ratings of each subgroup of principals between 2021 and 2024. Male principals, and principals aged 41 to 50 years, recorded significantly lower mean ratings for the statement 'I am satisfied by my salary' in 2024 compared to 2021. Finally, some differences were also found for 'Years as principal': principals with 11–15 years and 16–20 years of experience reported significantly lower mean ratings in 2024 than in 2021.

Figure 19.13: Comparing salary satisfaction across principal characteristics



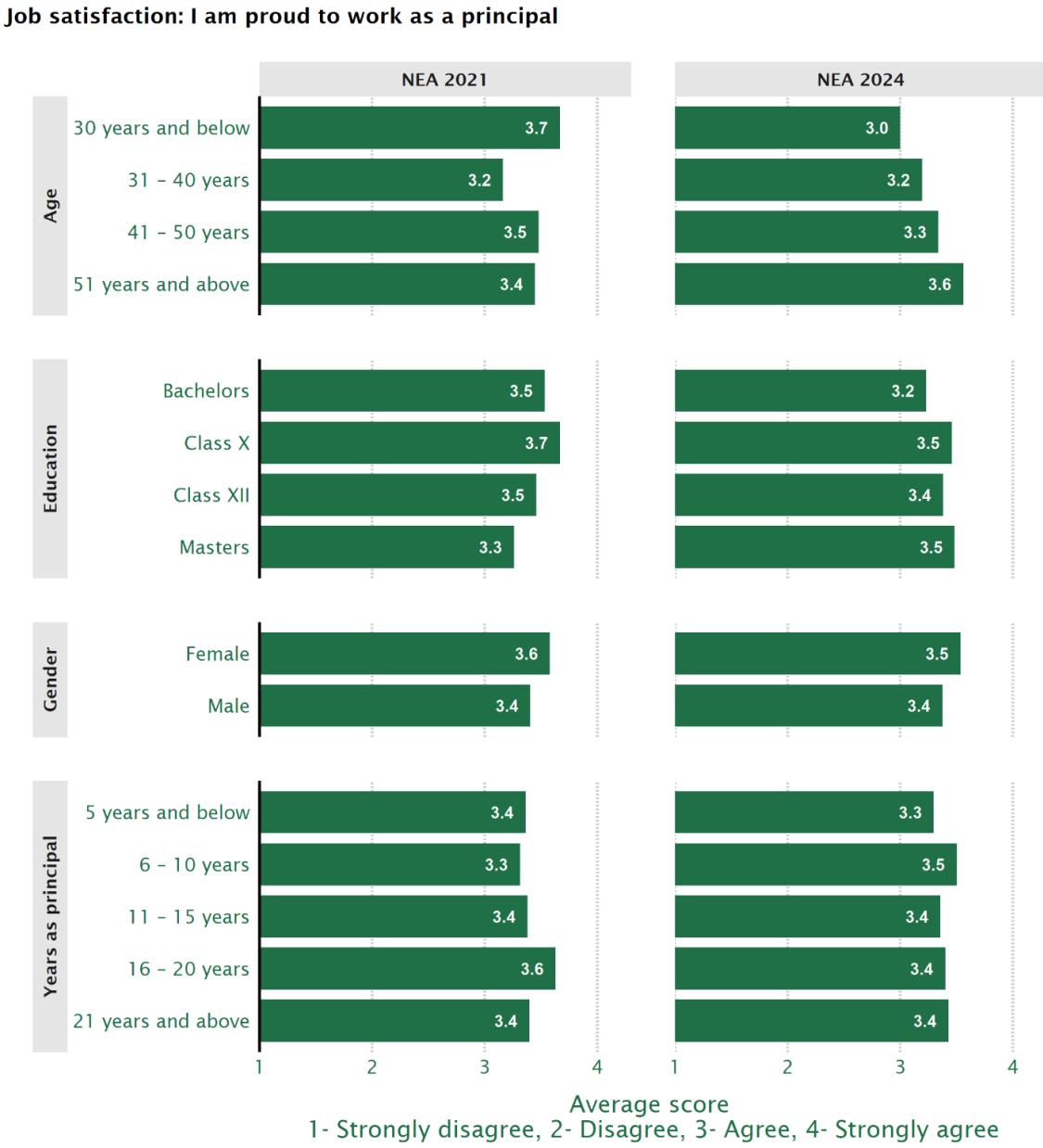
Notes: Bars marked with * show statistically significant differences from NEA 2021. In NEA 2021, categories '30 years and below' and '5 years and below' were labelled 'less than 30 years' and 'less than 5 years', respectively

Figure 19.14 summarises how principals' mean ratings varied for the statement 'I am proud to work as a principal'. The mean ratings in 2024 ranged from 3.0 to 3.6. There was little variation across gender, years as principal, or education. There was some variation within age groups: principals aged 30 or below reported a mean rating of 3.0, whereas principals aged 51 years and above reported a mean rating of 3.6.

Significance testing was used to compare the mean ratings of each subgroup of principals

between 2021 and 2024. No significant differences were found, suggesting that the mean ratings related to being proud to work as a principal were similar across NEA cycles.

Figure 19.14: Comparing pride in working as a principal across principal characteristics

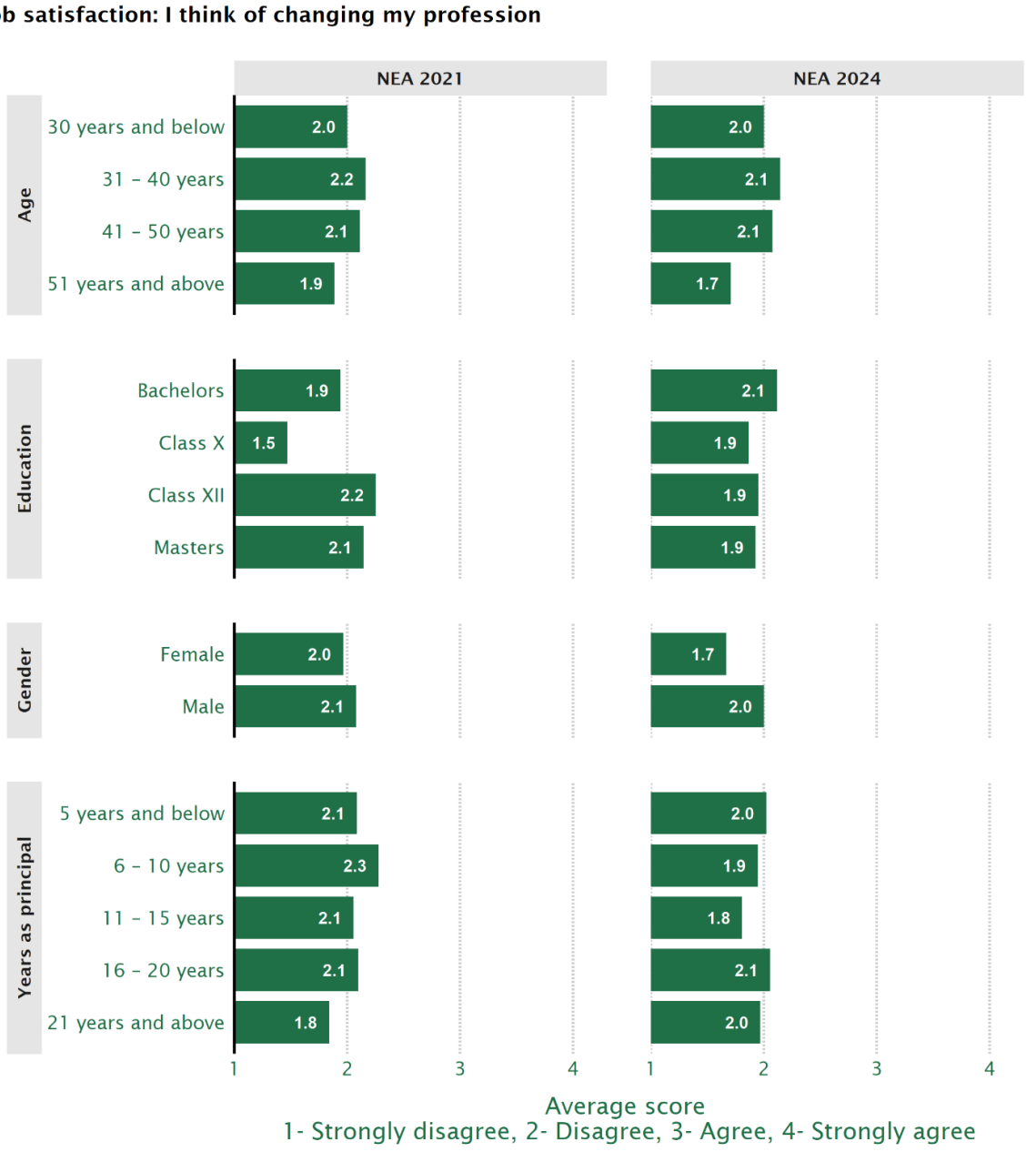


Notes: Bars marked with * show statistically significant differences from NEA 2021. In NEA 2021, categories '30 years and below' and '5 years and below' were labelled 'less than 30 years' and 'less than 5 years', respectively

Figure 19.15 summarises how principals' mean ratings varied for the statement 'I think of changing my profession'. The mean ratings in 2024 ranged from 1.7 to 2.1. There was not a lot of variation across principal characteristics. Significance testing was used to compare the mean ratings of each subgroup of principals between 2021 and 2024. No significant

differences were found, suggesting that the mean ratings related to changing their profession were similar across NEA cycles.

Figure 19.15: Comparing thinking about changing profession across principal characteristics

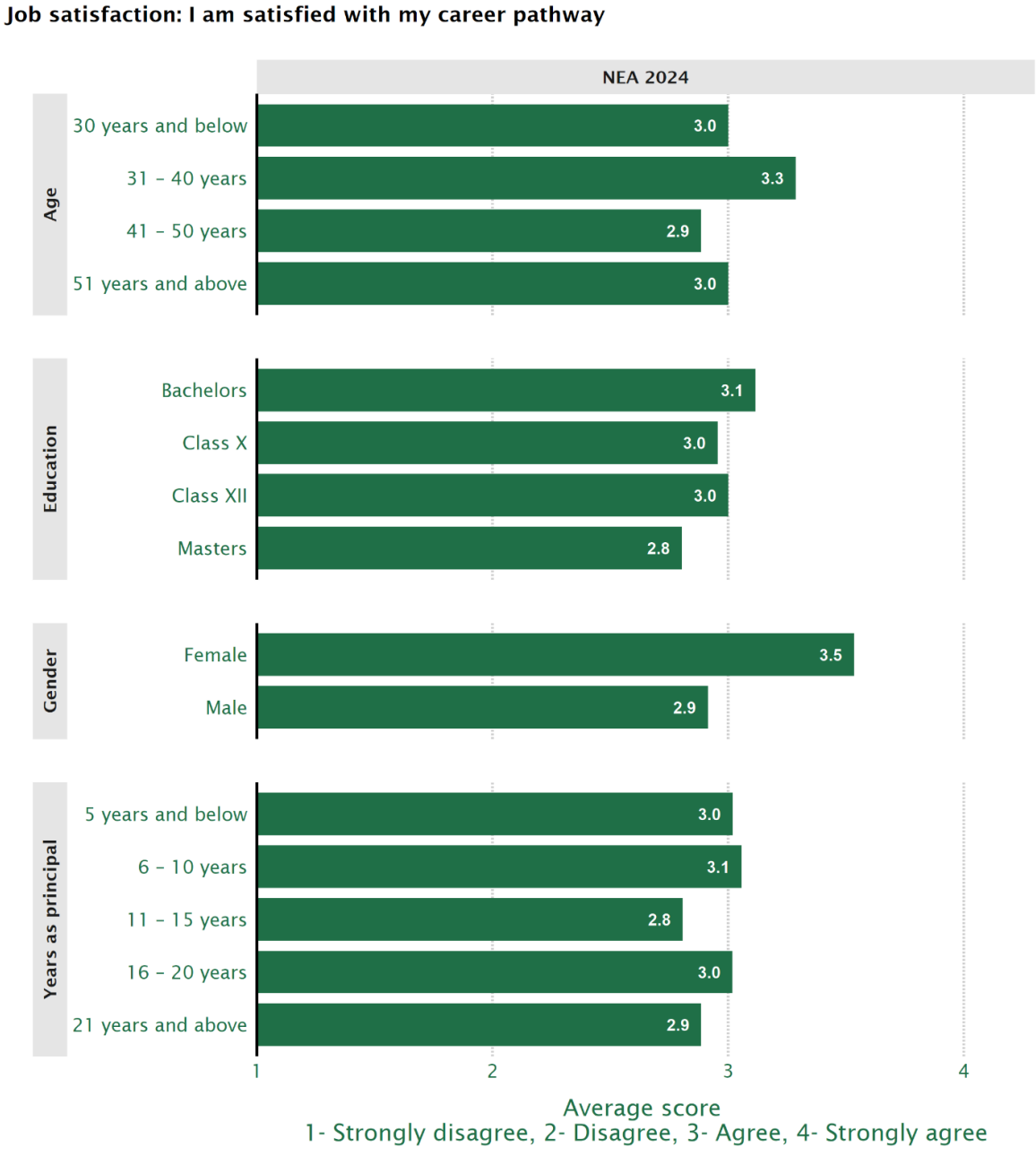


Notes: Bars marked with * show statistically significant differences from NEA 2021. In NEA 2021, categories '30 years and below' and '5 years and below' were labelled 'less than 30 years' and 'less than 5 years', respectively

Principals were also asked about the extent to which they feel satisfied with their career pathway. Figure 19.16 summarises how principals' mean ratings varied for the statement 'I am satisfied with my career pathway'. The mean ratings in different subgroups in 2024

ranged from 2.8 to 3.5. Males reported a mean rating of 2.9, whereas females reported a mean rating of 3.5. Significance testing was not used to compare NEA cycles, as this statement was not included in the NEA 2021.

Figure 19.16: Comparing satisfaction with career pathway across principal characteristics



Note: NEA 2021 results are excluded as this question was not asked in NEA 2021.

Chapter 20. Insights from Chief District and Chief Thromde Education Officers

Key findings from this chapter

Professional development activities

- Chief District and Chief Thromde Education Officers (CDEOs/CTEOs) participated more frequently in professional development (PD) programmes and provided increased mentoring support to principals compared to 2021. However, fewer reported delivering PD focussed on 21st-century skills or ICT, and fewer facilitated sessions for schools more than once per year. Overall, 14 out of 24 districts reported providing 20 hours of PD to all teachers in the past year.

Supervision and monitoring activities

- Well over half of CDEOs/CTEOs reported conducting key supervision activities at least twice a year, except for lesson observations. Compared to 2021, the frequency of several activities, such as providing teacher feedback and observing lessons, had slightly declined.

- Nearly all CDEOs/CTEOs agreed they had conducted key monitoring activities in the NEA 2024, although the proportion who strongly agreed was slightly lower than in 2021. Overall, agreement levels remained high across most activities.

Policy and planning

- Nearly all CDEOs/CTEOs reported that schools had key planning documents aligned with national priorities and developed with stakeholder input. However, 3 out of 24 indicated their district does not have education guidelines and 3 indicated that stakeholders are not aware of education policies.

Resources management

- Five CDEOs/CTEOs (out of 24) disagreed that schools in their district had counsellors or vibrant non-formal education programmes.

- While budget utilisation was widely seen as efficient, 17 out of 24 CDEOs/CTEOs expressed concerns about the adequacy of allocated budgets to meet school requirements.

Effectiveness of Individual Work Plans and performance management systems

- The majority of CDEOs/CTEOs agreed that the school performance management system had positive impacts, especially on school leadership and educational programmes, although many disagreed about its ability to motivate teachers or encourage healthy competition.

Job satisfaction and experience

- Most CDEOs/CTEOs felt supported by the system and actively contributed to it. One in four reported concerns regarding salary satisfaction.

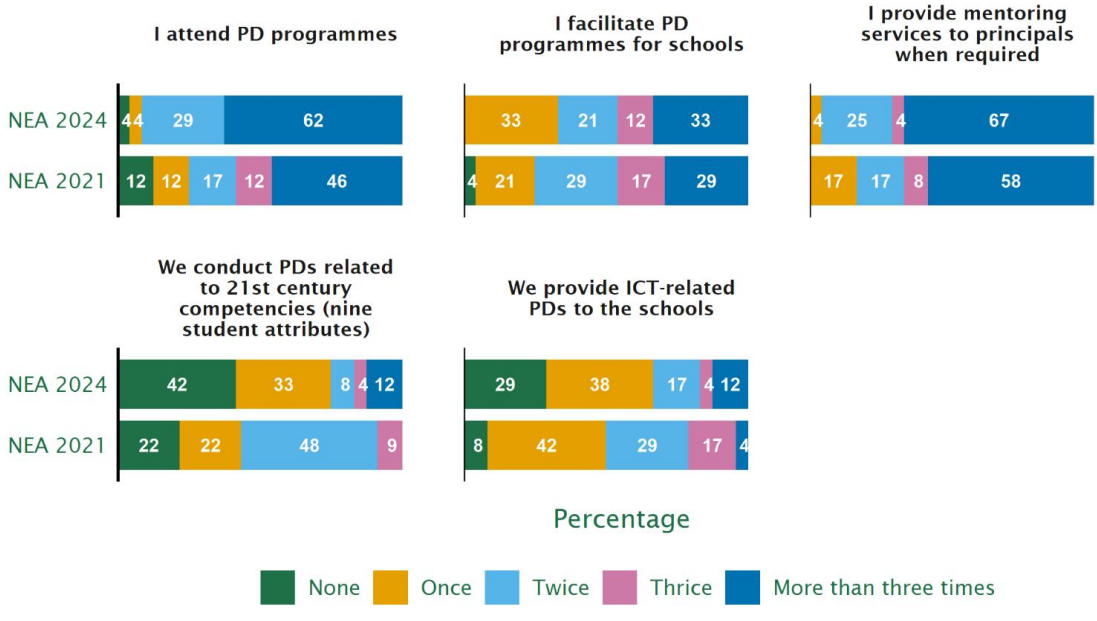
This chapter summarises data from the questionnaire completed by Chief District Education Officers (CDEOs) and Chief Thromde Education Officers (CTEOs), focussing on their involvement in professional development (PD), supervision and monitoring practices, policy implementation, and planning and management processes. These insights help to provide another layer of contextual understanding of the factors that shape educational delivery in Bhutan. All 24 of the CDEO/CTEOs completed this questionnaire. For consistency with other chapters, figures in this section report the percentages of CDEO/CTEOs giving each response. However, it is important to bear in mind that these percentages are based on small numbers. As such, apparently large differences from 2021 may result from just a handful of CDEO/CTEOs changing their responses.

As with previous chapters, significance tests were used to compare responses between the NEA 2024 and the NEA 2021. However, as noted in the Introduction chapter, large differences between cycles may not be statistically significant when there is a small population (or sample) size, meaning that large fluctuations are more likely to occur by chance. As a result, most of the significance tests conducted were statistically insignificant. However, given that the data reflects the entire population of CDEOs/CTEOs, differences that are not statistically significant may still carry practical importance.

20.1. Professional development

CDEOs and CTEOs were asked to indicate the frequency with which they attended, facilitated, and provided given professional development (PD) activities in their district. Figure 20.1 summarises these responses for both NEA cycles.

Figure 20.1: CDEOs/CTEOs' responses relating to the frequency of PD activities

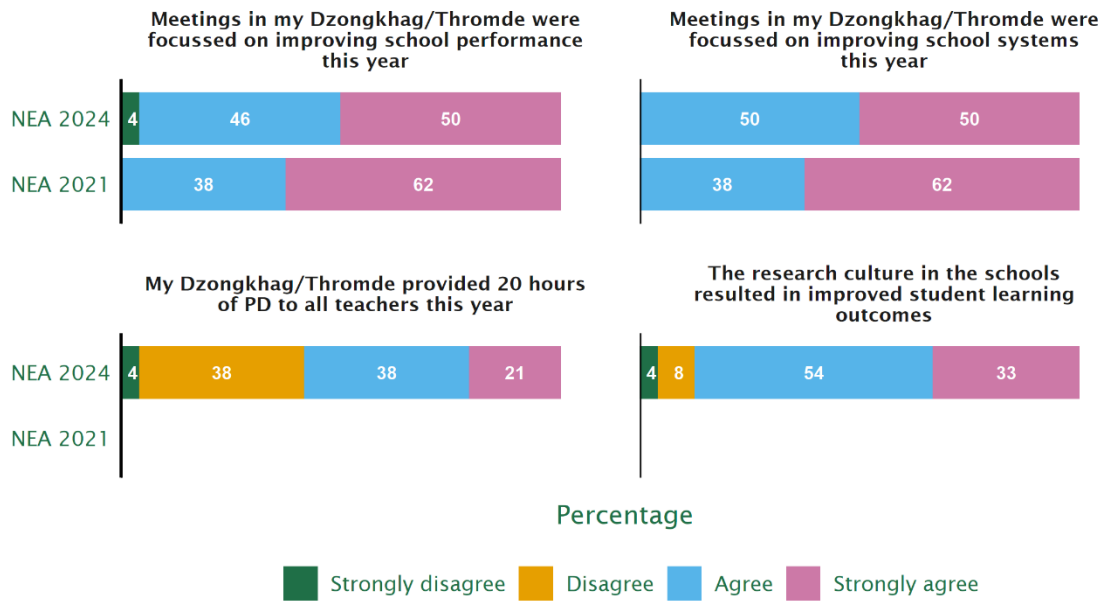


Note: Bars marked with * indicate statistically significant differences from NEA 2021.

The result shows that CDEOs/CTEOs reported attending PD programmes more frequently in the NEA 2024 than the NEA 2021. A slightly higher percentage reported attending at least one PD programme during the year, with a notable increase in those attending more than three times annually (62% in 2024 vs 46% in 2021). Similarly, there was an increase in the frequency of CDEOs/CTEOs providing mentoring services to principals when needed. However, proportionally fewer CDEOs/CTEOs reported conducting at least one PD session on 21st-century skills or delivering ICT-related PD to schools within the year. Additionally, the proportion of those who facilitated more than one PD programme for schools also declined.

CDEOs and CTEOs were also asked to indicate their level of agreement with statements related to PD on a scale of 1 (strongly disagree) to 4 (strongly agree). Figure 20.2 summarises CDEOs/CTEOs agreement to these statements in both NEA cycles.

Figure 20.2: CDEOs/CTEOs' responses relating to the frequency of PD activities



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes or because they were not included in NEA 2024.

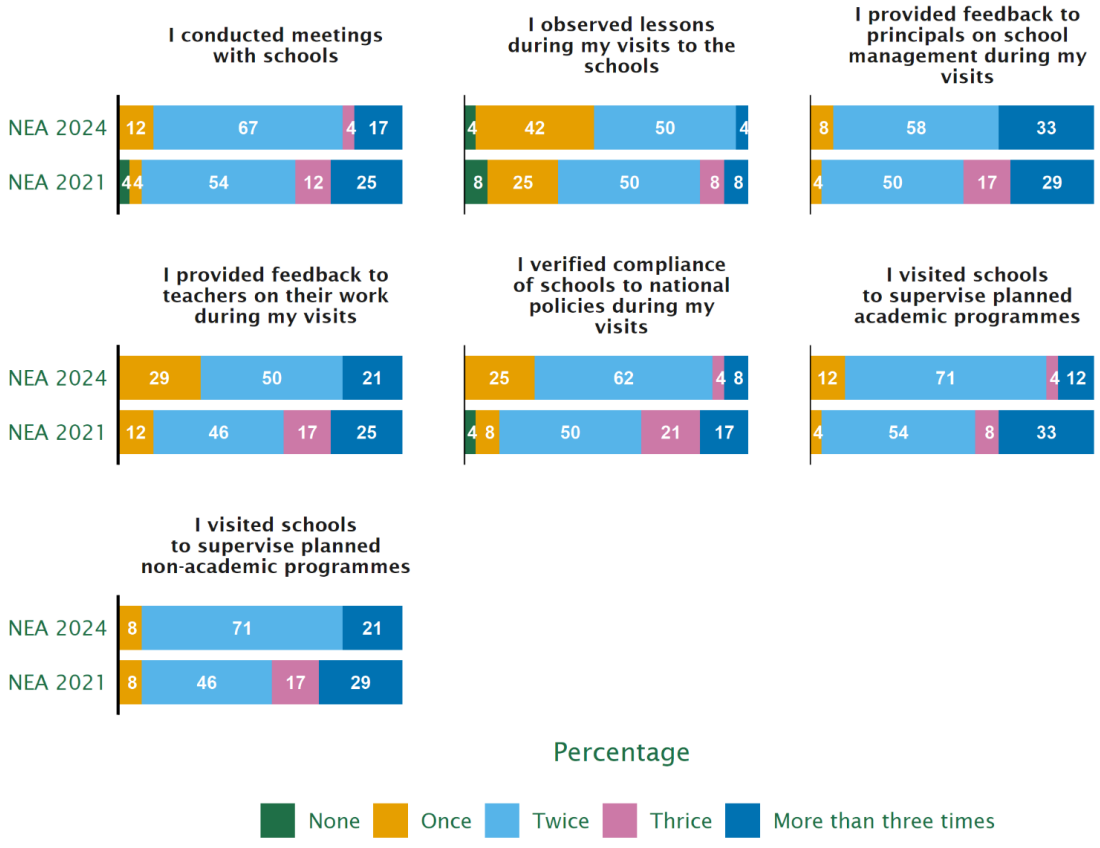
Compared to the NEA 2021, a smaller proportion of CDEOs and CTEOs strongly agreed that the meetings held in their district over the past year were focussed on improving school performance and the overall school system. However, nearly if not all respondents at least agreed with these statements.

Additionally, 59% of CDEOs/CTEOs (14 out of 24) indicated agreement or strong agreement that they had delivered 20 hours of PD programmes to teachers in their respective district during the past year. A large majority (87%) also agreed that having a research culture in schools positively influenced student learning outcomes.

20.2. Supervision and monitoring

CDEOs and CTEOs were asked to indicate the frequency with which they provided supervision activities in their districts in 2024 to both teachers and principals in schools. Figure 20.3 presents the reported frequency of several supervision activities across both NEA cycles.

Figure 20.3: CDEOs/CTEOs' responses relating to the frequency of professional supervision activities



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes or because they were not included in NEA 2024.

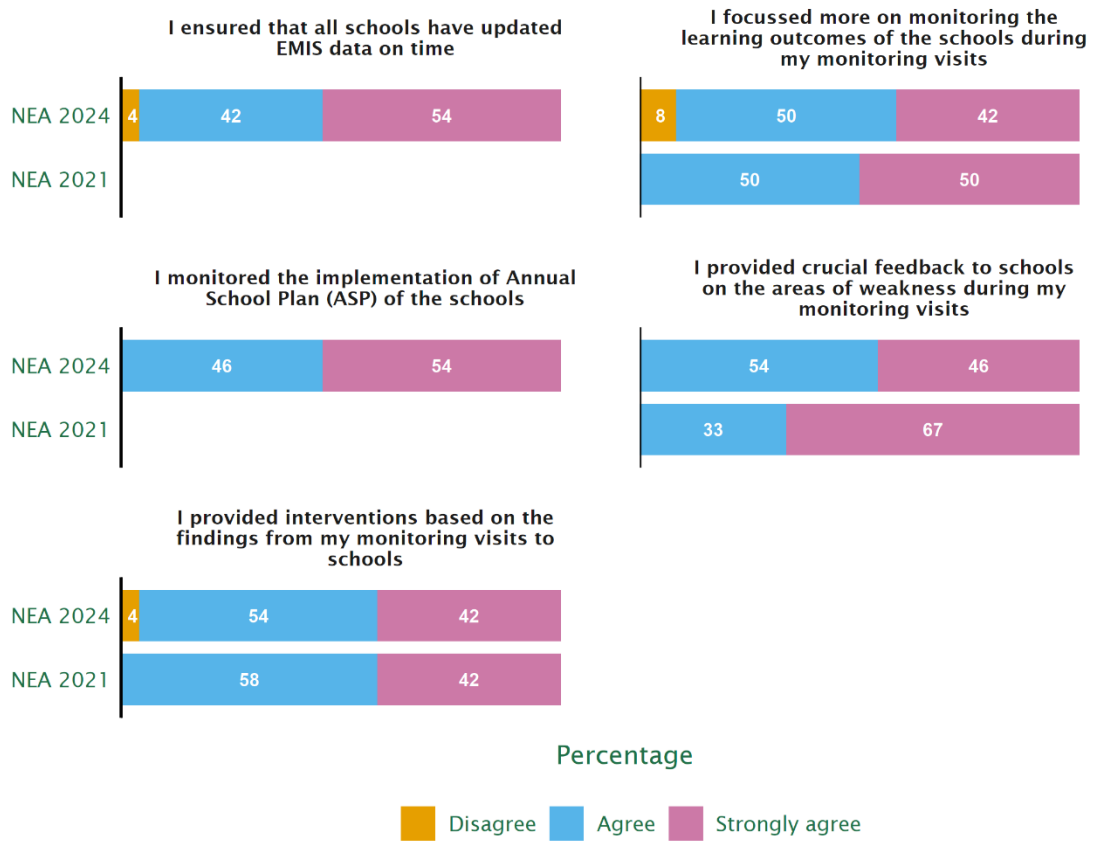
The first key observation from the figure is that, with the exception of one activity, the vast majority of CDEOs/CTEOs in 2024 reported conducting each supervision activity at least twice a year or more. The exception was 'I observed lessons during my visits to the schools,' where 46% of respondents indicated they had done this either once or not at all during the year.

Compared to the NEA 2021, the percentage of CDEOs/CTEOs conducting several supervision activities twice a year or more has slightly declined. This is evident in statements

such as ‘I provided feedback to teachers on their work…’, ‘I verified compliance of schools with national policies…’, and ‘I observed lessons during my visits…’.

CDEOs and CTEOs were also asked about the activities they carried out during their school monitoring visits and other related monitoring activities. Figure 20.4 summarises the extent to which they agreed with statements about whether they had conducted various monitoring activities across both NEA cycles.

Figure 20.4: CDEOs/CTEOs’ responses relating to monitoring activities



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes or because they were not included in NEA 2024.

Overall, nearly all CDEOs and CTEOs agreed (either ‘strongly agree’ or ‘agree’) that they had carried out the five stated monitoring activities: ensuring that Education Management Information System (EMIS) data was updated on time, monitoring learning outcomes, monitoring the implementation of the Annual School Plan (ASP), providing feedback on areas of weakness, and offering interventions during school visits.

For activities where 2021 data is available, the level of agreement in the NEA 2024 appears slightly lower. A smaller proportion of CDEOs/CTEOs strongly agreed with the statements, while more selected ‘agree’. Nonetheless, as previously noted, the overall level of agreement

remains high across most monitoring activities.

20.3. Policy and planning

To gather CDEOs' and CTEOs' views on education policy and planning, they were asked several questions about the availability of existing plans and policies, as well as the alignment of those plans. Their responses for both NEA cycles are summarised in Figure 20.5.

Figure 20.5: CDEOs/CTEOs' responses relating to policy and planning

Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes or because they were not included in NEA 2024.

Findings show that nearly all CDEOs/CTEOs reported that schools in their districts have an ASP, Strategic Plan, and Education Plan, and that these plans are aligned with national policies and priorities. Almost all respondents also indicated that the Education Plan was developed in consultation with relevant stakeholders in their district.

The statements with the lowest (though still relatively high) levels of agreement were related to education guidelines and policies: around 17% of CDEOs/CTEOs (4 respondents) reported that their district does not have education guidelines, and 12% (3 respondents) indicated that stakeholders in their district are not aware of the education policies.

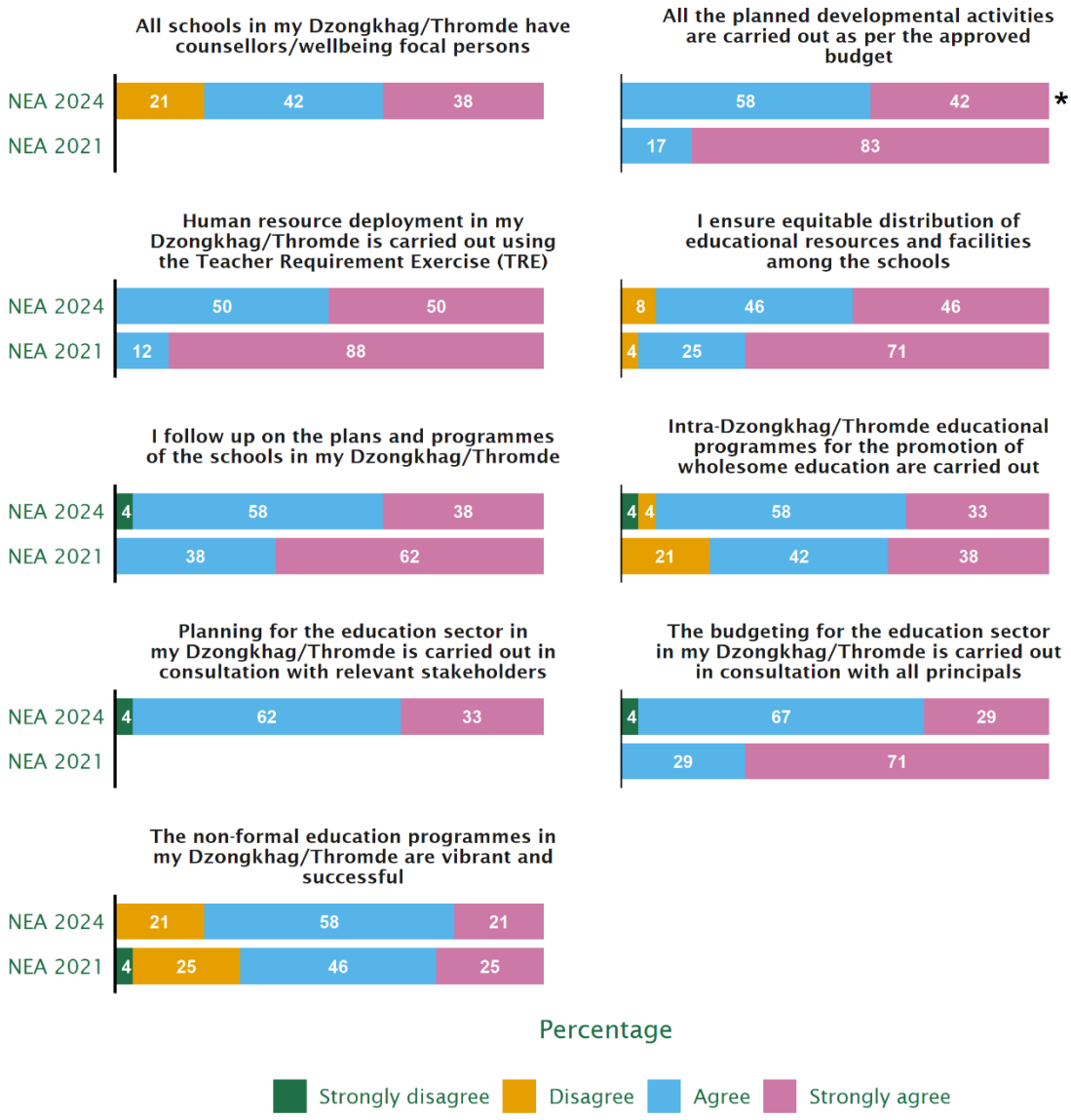
20.4. Resources management

20.4.1. Administrative management

CDEOs and CTEOs were asked to indicate their level of agreement with several statements relating to the availability and management of administrative resources in schools within their districts. Figure 20.6 presents their level of agreement with each statement across both NEA cycles.

At least 90% of CDEOs/CTEOs agreed with all but two of the statements: the first exception was that 21% of respondents (5 out of 24) disagreed that all schools in their districts have counsellors or wellbeing focal persons; the second was that 21% (5 out of 24) disagreed with the statement that non-formal education programmes in their districts 'are vibrant and successful'. It is also worth noting that, for activities where data from 2021 is available, there is a slightly lower level of agreement in the NEA 2024. In 2024, a smaller proportion of CDEOs/CTEOs strongly agreed with the statements, while more selected 'agree'. Nonetheless, as previously mentioned, overall agreement remains high across most statements.

Figure 20.6: CDEOs/CTEOs' responses relating to administrative resources and management

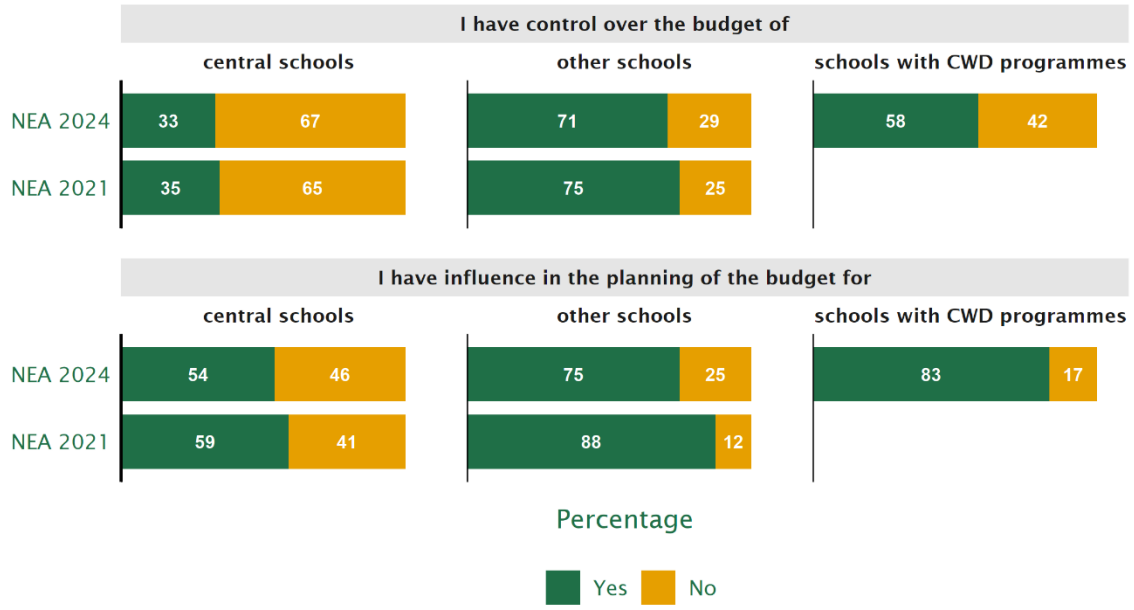


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes or because they were not included in NEA 2024.

20.4.2. Financial management

In addition to administrative resources, CDEOs and CTEOs were also asked about the management of financial resources. Figure 20.7 shows the percentage of CDEOs/CTEOs who reported having control and influence over budget planning for three types of schools: central schools, schools with CWD programmes, and other schools.

Figure 20.7: CDEOs/CTEOs' responses relating to their control and influence of school budgets

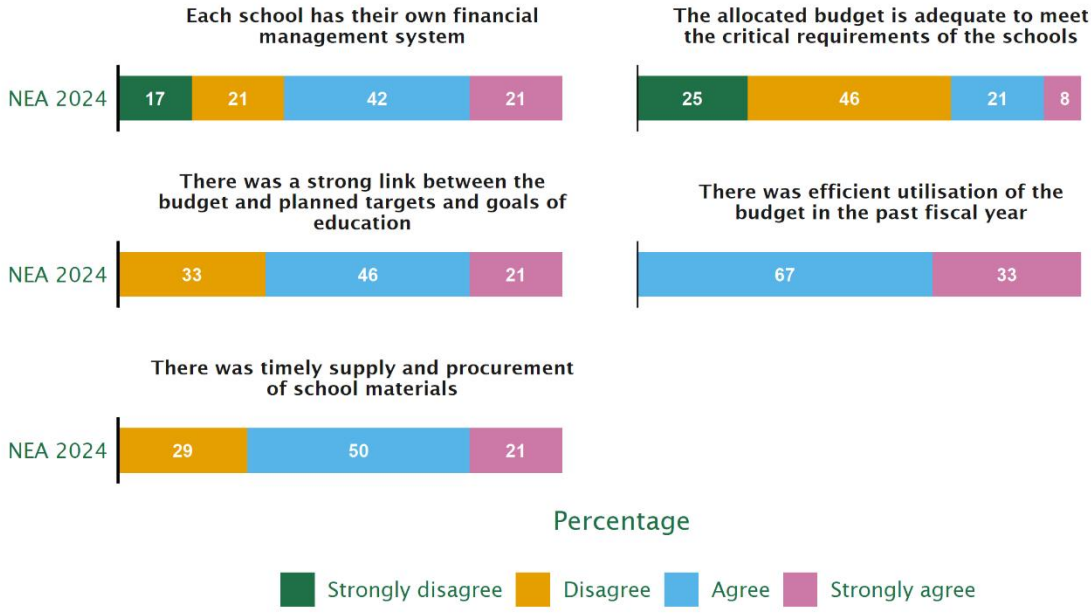


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes or because they were not included in NEA 2024.

As shown in Figure 20.7, more CDEOs/CTEOs reported having influence over budget planning than actual control of the budget across all three types of schools. Respondents had the least influence and control over central schools, with only 54% reporting influence in budget planning and just 33% reporting having control over budgets. In contrast, 75% of respondents reported having influence over the budget planning of 'other schools' (i.e., those that are not central schools or schools with CWD programmes), and 71% reported having control over budgets. For schools with CWD programmes, 83% of CDEOs/CTEOs reported having influence over budget planning, while slightly more than half indicated they had control over the budget.

CDEOs/CTEOs were also asked to respond to several statements relating to the adequacy and delivery of financial resources. Their responses are summarised in Figure 20.8. Results for the NEA 2021 are not shown on this graph as these questions were not asked in 2021.

Figure 20.8: CDEOs/CTEOs' responses relating to financial management



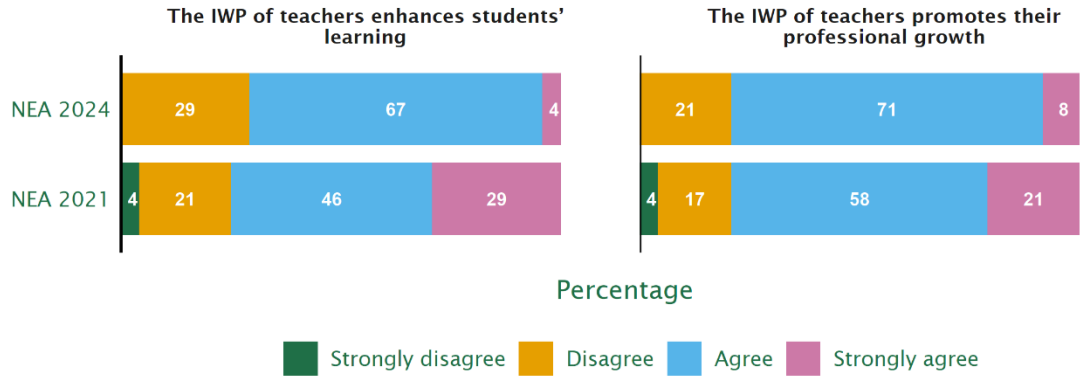
Note: These questions were not asked in NEA 2021.

As shown in Figure 20.8, all CDEOs/CTEOs agreed (either 'strongly agree' or 'agree') that budget utilisation in the past fiscal year was efficient. However, the remaining statements received varying levels of disagreement. Responses indicated moderate disagreement with two statements: 29% of respondents disagreed that school materials were supplied and procured in a timely manner, and 33% disagreed that there was a strong link between the budget/planned targets and educational goals. Two other statements received even higher levels of disagreement. Notably, 71% of respondents disagreed (either 'strongly disagree' or 'disagree') that the allocated budget was adequate to meet the schools' requirements, and 38% disagreed that each school had its own financial management system.

20.5. Effectiveness of Individual Work Plans and performance management systems

CDEOs and CTEOs were asked to give their opinions on the effectiveness of teachers' Individual Work Plans (IWPs) on their professional growth and students' learning outcomes. Their responses, together with those collected during the NEA 2021, are summarised in Figure 20.9.

Figure 20.9: CDEOs/CTEOs' responses relating to the effectiveness of teachers' IWPs



Note: Bars marked with * indicate statistically significant differences from NEA 2021.

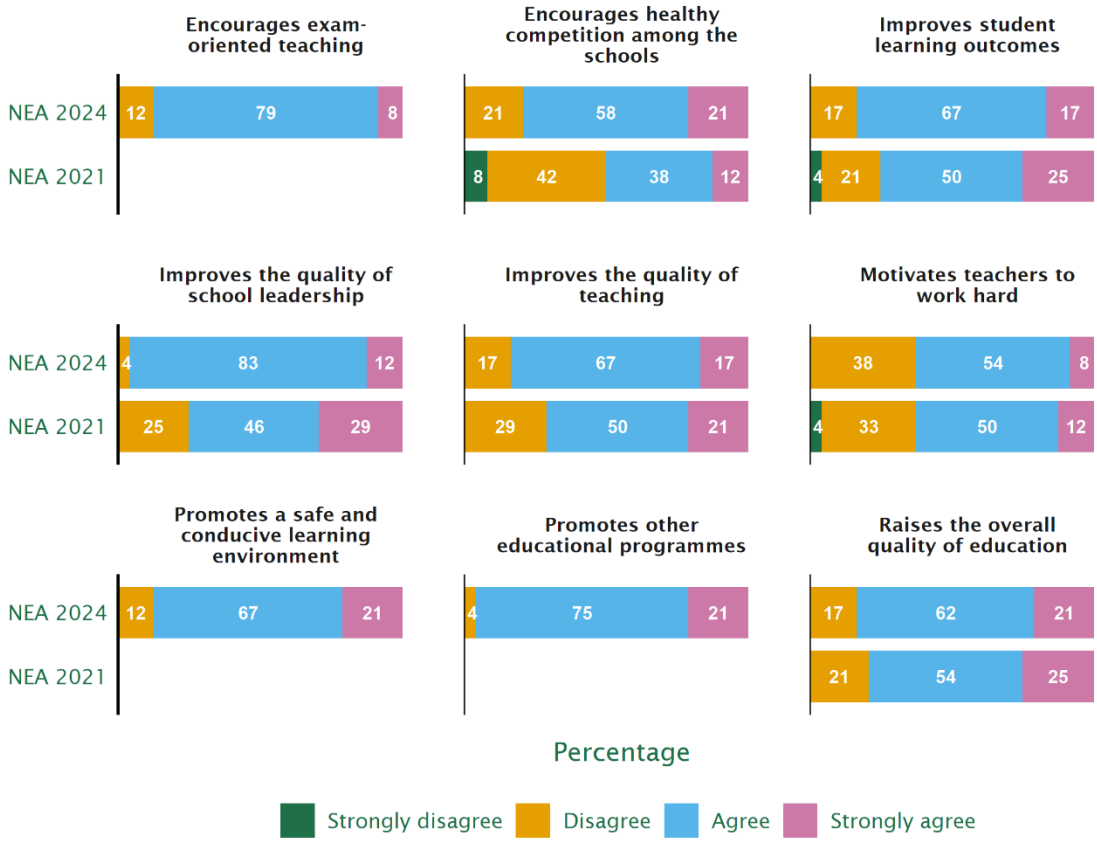
Findings indicate that 71% of CDEOs/CTEOs agreed (either 'strongly agree' or 'agree') that teachers' IWPs are effective in enhancing students' learning, and 79% agreed that they promote teachers' professional growth. These levels of agreements were broadly comparable to those observed in the NEA 2021. However, proportionally fewer CDEOs/CTEOs in the NEA 2024 strongly agreed that teachers' IWPs were effective compared to responses from the NEA 2021.

In addition to the IWP, CDEOs/CTEOs were asked to share their views on the impact of the current school performance management system within their district. Figure 20.10 summarises their responses, alongside those collected during the NEA 2021.

Results from the NEA 2024 show that the majority of CDEOs/CTEOs agreed – to varying degrees – that the current school performance management system had had desirable impacts. Respondents were most likely to disagree with the statement that the current school performance management system 'Motivates teachers to work hard', with 38% expressing disagreement – similar to the level reported in the NEA 2021. Additionally, 21% disagreed that the system 'Encourages healthy competition among the schools', which is a noticeable improvement from the higher disagreement levels observed in the NEA 2021.

Among the listed impacts, the two statements with the highest levels of agreement were that the current system 'Improves the quality of school leadership' and 'Promotes other educational programmes', with 96% agreeing to each of these statements.

Figure 20.10: CDEOs/CTEOs' responses relating to the impact of the current school performance management system

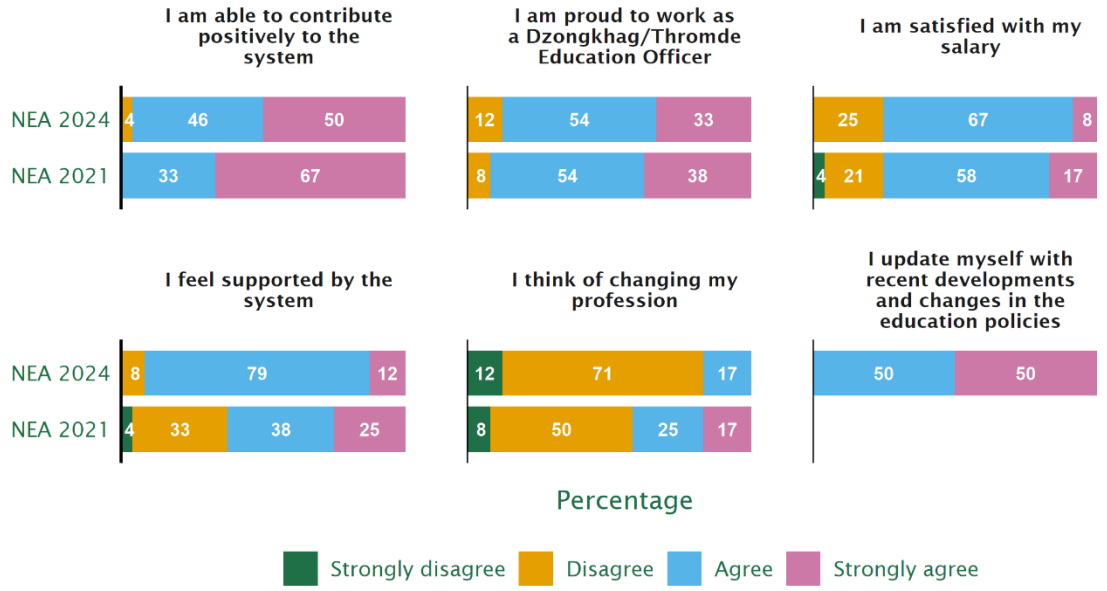


Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes or because they were not included in NEA 2024.

20.6. Job satisfaction and experience

Finally, CDEOs and CTEOs were asked about their experience of and satisfaction with their job. Their responses, together with those from the NEA 2021, are summarised in Figure 20.11.

Figure 20.11: CDEOs/CTEOs' responses relating to their job satisfaction and experience



Notes: Bars marked with * indicate statistically significant differences from NEA 2021. Some NEA 2021 results are excluded due to noticeable wording changes or because they were not included in NEA 2024.

Encouragingly, most CDEOs/CTEOs felt supported by the system and reported being able to contribute positively to it. There was notably higher agreement with the statement 'I feel supported by the system' in the NEA 2024 compared to the NEA 2021. Furthermore, all respondents agreed that they kept themselves updated with new developments and changes in educational policies.

In terms of job satisfaction, 17% reported considering a change in profession, which is lower than the percentage reported in the NEA 2021. Similarly, 12% disagreed with the statement 'I am proud to work as a Dzongkhag/Thromde Education Officer', and 25% disagreed that they are satisfied with their salary. While the overall levels of disagreement for these statements remained broadly consistent across NEA cycles, a smaller proportion of CDEOs/CTEOs selected 'strongly agree' in 2024, indicating a slight decline in the intensity of positive sentiment.

Chapter 21. Summary and recommendations

This chapter presents a summary of the NEA 2024 findings and offers policy recommendations across key areas. Many of these areas were also highlighted in the NEA 2021 report. Where data permits, comparisons are made between the 2024 and 2021 results. This provides a prism through which to assess whether there is any evidence of progress against the previously identified areas of attention. The chapter is organised into five themes: (1) national domain performance, (2) district-level performance, (3) performance gaps between student groups, based on their background and school characteristics, (4) student wellbeing and experiences, and (5) learning environments and educational resources. A conclusion is provided in the final section of this chapter.

21.1. National performance

Evidence of academic progression among grade III students can be tracked by comparing the NEA 2024 results with those from the NEA 2021. Improvements were observed in English Reading and Mathematical Literacy, while progress in Dzongkha Reading Literacy was not evident. Similarly, the proportion of students achieving the minimum proficiency level increased in English Reading and Mathematical Literacy, but not in Dzongkha Reading Literacy. These findings are elaborated on, and recommendations provided, in Table 21.1.

Table 21.1: Evidence of progress in grade III student performance and recommendations

Grade III domain	Evidence of progress (2021-2024)	Recommendations
English Reading Literacy	Significant improvement, by 21 points	Continue existing policies, as actions taken following the NEA 2021 have led to improved national outcomes.
Dzongkha Reading Literacy	No visible improvement	Evaluate existing policies for their effectiveness, relevance and alignment with the current educational needs, as they have not resulted in improved national outcomes.
Mathematical Literacy	Notable improvement by 14 points	Continue existing policies, as actions taken following the NEA 2021 have led to improved national outcomes.

As this is the first year that grade VI performance has been assessed in the NEA, it is not yet possible to track progress over time. However, based on the minimum proficiency standards established by educational stakeholders in Bhutan, the results indicate a need for significant policy support in Mathematical and Scientific Literacy – domains in which the lowest

percentages of students met the proficiency standards. In contrast, higher proportions of students achieved minimum proficiency in Dzongkha Reading and Writing Literacy, with the highest performance observed in English Reading and Writing Literacy. These findings suggest additional national policies are needed to strengthen teaching and learning in Mathematical and Scientific Literacy at grade VI.

21.2. District performance

In grade III, in both English Reading and Mathematical Literacy, the majority of districts reported an improved performance between 2021 and 2024. Nonetheless, regional differences remain evident in all subjects across both grade III and grade VI.

There was a notable split between districts with the highest performances in Dzongkha Reading and Writing Literacy and those with the highest performances in other subjects. Specifically, in both grades, and in both Dzongkha Reading and Writing Literacy, Lhuentse consistently displayed the highest level of performance. Very strong performances were also seen in Trashiyangtse (ranked 4th for grade III Dzongkha Reading, grade VI Dzongkha Reading and grade VI Dzongkha Writing Literacy) and Trashigang (ranked 6th, 5th, and 2nd respectively). No other districts displayed such consistently strong performances across all aspects of Dzongkha.

In contrast, across both grades and all of the English, Mathematical and Scientific Literacy domains, Thimphu Thromde and Samdrup Jongkhar Thromde ranked amongst the top five districts every time. Phuntsholing Thromde did likewise, with the exception of ranking 6th for grade VI mathematics.

These findings indicate that different districts have different strengths and weaknesses in the various domains. As such, it would be worthwhile to make continued efforts to identify the support that is needed in each district. These findings are further elaborated on, and recommendations provided, in Table 21.2.

Table 21.2: Regional differences in domain performance and recommendations

Domain	Evidence of regional differences[5]	Recommendations
English Literacy	The performance gap between the highest and lowest performing districts – hereafter referred to as the regional gap – is 50 points for grade VI Reading, 54 points for grade VI Writing, and 77 points for grade III Reading.	Tailor support for districts like Mongar, Samdrup Jongkhar, Samtse, and Tsirang, which consistently ranked among the bottom five in at least two domains: grade VI English Reading/Writing and grade III English Reading.
Dzongkha Literacy	This is the domain with the widest regional gaps between grades VI and III domains: 67 points for both grade VI Reading and Writing Literacy and 84 points for grade III Reading Literacy.	Tailor support for districts such as Dagana, Gelephu Thromde, Phuntsholing Thromde, Samtse, and Tsirang, which consistently ranked among the bottom five in at least two Dzongkha Literacy domains: grade VI Reading/Writing and grade III Reading.
Mathematical Literacy	This is the domain with the smallest regional gaps between grades VI and III domains: 56 points for grade III and 44 points for grade VI.	Tailor additional support for districts such as Samdrup Jongkhar and Tsirang, which consistently ranked among the bottom five in Mathematical Literacy across grades III and VI.
Scientific Literacy	The regional gap is comparable to English Literacy: 51 points for grade VI.	Tailor additional support for the five lowest-performing districts in grade VI Scientific Literacy: Lhuentse, Mongar, Samdrup Jongkhar, Tsirang, and Zhemgang.

21.3. Performance gaps

Findings from the NEA 2024 imply that policy efforts to address performance gaps between students need to be differentiated between Dzongkha and non-Dzongkha domains.

In English, Mathematical, and Scientific Literacy, students with the following characteristics consistently outperformed their peers across both grade III and grade VI: those from higher socio-economic backgrounds, those from English-speaking households, those with ECCD participation, those attending urban or private schools, and day scholars. In contrast, Dzongkha performance showed less variation by socio-economic status, school location, or

[5] Excluding data from Gelephu Thromde as only one school participated in the NEA 2024, which will affect the robustness of the estimates.

ECCD participation. Instead, students from Dzongkha-speaking households and those attending public schools tended to perform better. Considerable performance gaps were also observed for children with disabilities (CWD), with students with disabilities generally underperforming. Gender differences were also domain-specific: girls tended to outperform boys in language literacy domains, and slightly underperform in the STEM domains. Further evidence on these gaps, along with recommendations, is presented in Table 21.3.

Table 21.3: Evidence of performance gaps and progress, and recommendations

Performance gap	Evidence of gaps and progress	Recommendations
Children with disabilities (CWD)	Gaps were evident across all domains, with students with disabilities underperforming. Gaps were particularly large in grade VI domains, with strong evidence for Dzongkha Writing Literacy (a gap of 29 points) and Scientific Literacy (a gap of 20 points).	Strengthen inclusive education strategies by providing targeted support for students with disabilities, such as more usage of differentiated instruction and accessible learning materials.
Gender	**Grade III:** Gaps slightly narrowed in English and Dzongkha Reading Literacy (from 8 to 4 points, and 9 to 6 points, respectively), with girls slightly outperforming boys. A gap in Mathematical Literacy emerged in this NEA cycle, with boys outperforming girls by an average of 6 points. **Grade VI (2024 only):** Girls outperformed boys in all language literacy domains by 7 to 21 points. Gaps in Mathematical and Scientific Literacy are comparatively smaller—ranging from 4 to 7 points, with boys, on average, outperforming girls.	Continue existing policies to provide additional support for boys in language literacy domains, and for girls in Mathematical and Scientific domains. Continue monitoring recommended to evaluate policy impact.
ECCD	Students who attended ECCD programmes continued to outperform those who did not, by 5 to 8 points in grade III domains and 13 to 16 points in grade VI domains, except for Dzongkha, where no significant gap was observed.	Expand access and improve the quality of ECCD programmes, to align with Bhutan's current national priority to commit to the provision of universal access to ECCD by 2030.
School management type	Private schools noticeably outperformed public schools in non-Dzongkha subjects. Conversely, they	Continue efforts to improve the standard of education in public schools, especially in

	underperformed in Dzongkha domains. This pattern is evident across both grade III and grade VI, with gaps ranging from 19 to 60 points. However, progress in narrowing the gap is visible in grade III English Reading and Mathematical Literacy.	non-Dzongkha subjects. Strengthen Dzongkha teaching practices and promote usage of Dzongkha in private schools.
School location	Urban schools outperformed rural schools in non-Dzongkha domains by at least 30 points in grade III domains and, 17 points in grade VI domains. In grade III, these performance gaps have hardly changed since 2021.	Re-evaluate and revise existing policies supporting rural schools to ensure their effectiveness, relevance, and alignment with current educational needs, particularly in the teaching and learning of non-Dzongkha subjects.
Socio-economic status	Students from high-income families and highly educated parents outperformed others in non-Dzongkha domains in grade VI (with gaps of at least 26 points) and across all domains in grade III (with gaps of at least 14 points). However, the gap in grade III has shown signs of narrowing.	Continue existing policies focussing on supporting students from lower socio-economic backgrounds, as any actions taken following the NEA 2021 have helped to narrow gaps. Consider allocating more support to students from lower socio-economic backgrounds at higher grades, as the gaps were bigger in grade VI than in grade III.
Home language	Students who speak English at home performed better in non-Dzongkha domains but worse in Dzongkha-related domains. This trend is evident in both grade III and grade VI, with larger gaps in grade VI. In grade III, gaps have narrowed across all domains, with reductions from 31 to 24 points in Mathematical Literacy, 16 to 12 points in Dzongkha Reading, and 38 to 36 points in English Reading. Gaps between English speakers and those who speak languages other than Dzongkha and English are also evident,	Continue and strengthen efforts to support English-speaking students in Dzongkha domains and other students in non-Dzongkha domains, as the gaps are narrowing but remain noticeable. Promote greater use of Dzongkha beyond the classroom among English-speaking students, and encourage English usage

	although smaller in size.	among Dzongkha-speaking students to support bilingual proficiency.

21.4. Students' wellbeing and experiences

In addition to monitoring domain performance, contextual questionnaires were administered to students as part of the NEA to capture various aspects of students' wellbeing and experiences both inside and outside of school. Key findings are presented in Table 21.4 and, where possible, compared with results from the NEA 2021. The table also includes recommendations for policy consideration.

Table 21.4: Evidence and progress of students' wellbeing and experiences inside and outside of school

Aspect	Evidence of progress (2021-2024)	Recommendations
Students' wellbeing	The proportion of students saying they feel happy has decreased since 2021; i.e., 44% said they are always happy in 2021, but this had fallen to 28% of grade III students and 19% in grade VI students in 2024.	Initiate further qualitative investigation to validate these findings and identify potential factors driving the decline to inform appropriate policy responses.
Students' values	Students' rating for statements relating to values remained very high, although several ratings were significantly lower than in 2021.	Strengthen the emphasis of students' values in schools to prevent further decline as teachers' ratings on students' value have been found to be positively linked to performance across all grades III and VI domains.
Out-of-school activities	Fewer grade III students in 2024 reported studying or playing outdoor games for an hour or more daily; both were down by 6 percentage points compared to 2021.	Investigate what is displacing students' time from self-study and outdoor play, and implement initiatives to promote both activities to prevent further decline.
Digital engagement	Around 20% of grades III and VI students spend over two hours daily on digital games or electronic devices, while 40% of grade VI and just over 30% of grade III students spend at least one hour a day on social media.	Consider providing clear guidelines to ensure safe and age-appropriate use of digital devices, especially for younger students.

Family life	Most students regularly eat with their families and discuss about school, but the frequency of these conversations has declined among grade III students since 2021.	Investigate the factors behind this decline in parent-child interactions, and implement initiatives to promote regular communication to mitigate further decline as some evidence showed that family engagement time was positively linked to grade VI performance in most domains.
Students' health	In 2024, 71% of grade III and 75% of grade VI students missed class at least once due to illness. Additionally, fewer grade III students than in 2021 reported access to clean drinking water and a clean school environment.	Strengthen policy efforts to improve school health and hygiene infrastructure to reduce illness-related absences, and ensure consistent access to clean drinking water and a clean environment as sickness was found to be negatively linked to student performance in several grade VI domains.
Bullying	Compared to 2021, neither students nor teachers indicated any meaningful change in levels of bullying, with 57% of grade III and 41% of grade VI students reporting being bullied at least sometimes.	Strengthen anti-bullying measures through consistent monitoring, awareness programmes, and school-wide interventions.
Corporal punishment	Most students in 2024 reported that teachers use corporal punishment and that they were afraid of their teachers at least 'sometimes'.	Continued monitoring is recommended via the NEA 2027, using the same questionnaire wording as in 2024.

21.5. Learning environments and resources

Hundreds of teachers from sampled schools completed a questionnaire. These responses provide valuable insights into their perspective on the school environment – both for students and for themselves – and act as a useful indicator of the school climate and working conditions.

In addition, principals of the sampled schools, as well as Chief District and Chief Thromde Education Officers (CDEO/CTEOs) from all districts and Thromde, were administered tailored questionnaires to gather their perspectives on various issues, including school environment, resource availability, and management practices.

For brevity, only selected key findings with direct policy relevance are presented here.

Readers interested in a more detailed analysis are encouraged to consult the relevant chapters. A summary of the key findings and corresponding policy recommendations is provided in Table 21.5.

Table 21.5: Findings relating to school environment for both students and teachers, as well as resources

Aspect	Findings	Recommendations
Physical environment	Most teachers and students reported having the necessary physical equipment, but 40% of students reported having no heating or cooling systems at school.	Ensure all schools meet minimum infrastructure standards by providing adequate heating and cooling systems to support a safe and comfortable learning environment. Change the wording of the questionnaire ahead of NEA 2027 to distinguish between the availability of heating and cooling systems.
Teacher attrition	Bhutan's national teacher attrition rate was 3% in 2024 – lower than most OECD countries. However, teachers, principals, and students are concerned about its impact on education quality.	Direct policy attention to specific districts with high teacher attrition – Tsirang, Phuntsholing Thromde, and Punakha – to identify the underlying causes, and implement targeted retention strategies to improve teacher attrition.
Teachers' job satisfaction	Grade III teachers reported improved parental support and recognition of their efforts since 2021.	Maintain current policy efforts aimed at enhancing parental support and recognition of teachers, as these have shown a positive impact since 2021.
Teacher behaviour	Roughly 1 in 4 of principals indicated issues with alcohol abuse or unjustified absence amongst teachers and 1 in 3 reported teachers using abusive language. These proportions have not changed since 2021.	Strengthen policies to address teacher behaviour issues as these have not improved since 2021.
Professional development (PD)	In 2024, grade III teachers rated action research in PD more positively than in 2021.	Sustain initiatives that promote teachers' use of action research, as it remains among the least-

	Fourteen of 24 districts reported offering at least 20 hours of training to teachers.	used strategies. Ensure equitable access to high-quality training across all districts.
Teaching and learning materials (TLMs)	Teachers reported they did not always have adequate TLMs, with 27–37% of principals reporting that TLMs for the main subjects were not available or in poor condition in the school.	Strengthen policies to ensure consistent provision and maintenance of high-quality TLM across all schools.
Resources for students with disabilities	More than 80% of principals said TLMs for students with disabilities were either unavailable or not applicable. Inclusive education was the least-received PD amongst teachers.	Expand inclusive education training for teachers and ensure availability of suitable TLM for students with disabilities.
Resource management	While budget utilisation was widely seen as efficient, 17 out of 24 CDEOs/CTEOs expressed concerns about the adequacy of allocated budgets to meet school requirements.	Initiate further conversations to understand schools' needs for increasing budget allocation and reassess the existing allocation of budgets.

21.6. Conclusion

This report summarised a wide range of data from cognitive and contextual questionnaires. Building on earlier work, and the methodology established in 2021, we have now been able to track national improvements in the standards of grade III English Reading Literacy and Mathematical Literacy in Bhutan since 2021. Having established a baseline for performance in grade VI, future rounds of the NEA will enable the Bhutan Council for School Examinations and Assessment (BCSEA) to measure progress over time.

Aside from headline performance levels, the NEA also reports on performance gaps between different subgroups of students, and on how student attitudes and behaviours change over time. Whilst there are some encouraging signs in these latter issues, such as a reduction in the performance gap between public and private schools, it is clear that many of these issues will be difficult to resolve in the relatively short space of time between successive cycles of the NEA. For this reason, many of the 2021 NEA recommendations still apply, and the findings in this report serve as encouragement to continue to build upon work in the various areas of attention.

Additionally, responses from the contextual questionnaire completed by teachers, principals, and CDEOs/CTEOs provided valuable insights into various aspects essential for enabling a safe, engaging, and inspiring school environment for both students and other stakeholders. Many aspects were rated highly, and certain areas showed improvements, such as grade III teachers reported an improvement in parental support and recognition of their efforts since 2021. However, the responses also highlighted some areas needing attention, such as the adequacy of the allocated budget in meeting school requirements and the availability of TLMs for students with disabilities. It is hoped that in future years, the NEA will reveal progress in each of these areas.

References

Agirdag, O., & Vanlaar, G. (2016). Does more exposure to the language of instruction lead to higher academic achievement? A cross-national examination. *International Journal of Bilingualism*, 22(1), 123-137. https://doi.org/10.1177/1367006916658711

BCSEA (2019). *National Education Assessment Framework 2019*. https://allchildrenlearning.org/wp-content/uploads/2020/11/Bhutans-National-Education-Assessment-Framework-2019.pdf

BCSEA (2021). *Item Response Theory Guidelines – NEA 2021, Using Conquest*. https://www.bcsea.bt/uploads/publications/NEA%20IRT%20Guidelines%20Version-1%20-2022_sml_1665723082.pdf

BCSEA (2023a). *National Education Assessment 2021 – Grade III Report*. https://www.bcsea.bt/uploads/publications/NEA2021-Grade%20III%20REPORT_1677917819.pdf

BCSEA (2023b). *National Education Assessment 2021 End of Lower Primary School Grade III: Technical Report*.

Benton, T. (2017). The effect of using principal components to create plausible values. In: Wiberg, M., Culpepper, S., Janssen, R., González, J., Molenaar, D. (eds) *Quantitative Psychology.* Springer Proceedings in Mathematics & Statistics, vol 265. Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-030-01310-3_26

Bialystok, E. (2016). Bilingual education for young children: review of the effects and consequences. *International Journal of Bilingual Education and Bilingualism,* 21(6), 666-679. https://doi-org.ezp3.lib.umn.edu/10.1080/13670050.2016.1203859

Carroll, M. & Benton, T. (2018). The link between subject choices and achievement at GCSE and performance in PISA 2015. *Cambridge Assessment Research Report.* Cambridge, UK: Cambridge Assessment. https://www.cambridgeassessment.org.uk/Images/517876-the-link-between-subject-choices-and-achievement-at-gcse-and-performance-in-pisa-2015.pdf

Chalmers, R.P. (2012). mirt: A multidimensional Item Response Theory package for the R environment. *Journal of Statistical Software*, 48(6), 1-29. https://doi.org/10.18637/jss.v048.i06

Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences*. New York: Routledge.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: a meta-analysis. *Educational Psychology Review*, 13(1), 1–22. https://doi.org/10.1023/A:1009048817385

Huynh, H. & Meyer, P., (2010). Use of Robust z in detecting unstable items in Item Response Theory models. *Practical Assessment, Research, and Evaluation*, 15(1), 2. https://doi.org/10.7275/ycx6-e864

Jerrim, J., Lopez-Agudo, L. A., Marcenaro-Gutierrez, O. D., & Shure, N. (2017). What happens when econometrics and psychometrics collide? An example using the PISA data. *Economics of Education Review*, 61, 51–58. https://doi.org/10.1016/j.econedurev.2017.09.007

Lumley, T. (2004). Analysis of complex survey samples. *Journal of Statistical Software*, 9, 1–19. https://doi.org/10.18637/jss.v009.i08

OECD (2012). *PISA 2009 Technical Report*, PISA, Paris: OECD Publishing. https://doi.org/10.1787/9789264167872-en

OECD (2024). *Education Policy Outlook 2024: Reshaping teaching into a thriving profession from ABCs to AI.* Paris: OECD Publishing. https://doi.org/10.1787/dd5140e4-en

R Core Team (2024). *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org

Supol, M., Satyen, L., Ghayour-Minaie, M., & Toumbourou, J. W. (2020). Effects of family violence exposure on adolescent academic achievement: a systematic review. *Trauma, Violence & Abuse*, 22(5), 1042–1056. https://doi.org/10.1177/1524838019899486

Torres Irribarra D., & Freund R. (2024). *WrightMap: IRT Item-Person Map with 'ConQuest' Integration*. R package version 1.4. https://CRAN.R-project.org/package=WrightMap

Wang, Y., Zhang, L., & Zhai, F. (2023). Spanking and parental verbal aggression during early childhood: Association with later academic achievement and the mediating role of executive function. *Infant and Child Development*, 32(5). https://doi.org/10.1002/icd.2446

Warm, T. A. (1989). Weighted likelihood estimation of ability in item response theory. *Psychometrika*, 54(3), 427–450. https://doi.org/10.1007/BF02294627

Wilder, S. (2014). Effects of parental involvement on academic achievement: a meta-synthesis. *Educational Review*, 66(3), 377–397.

https://doi.org/10.1080/00131911.2013.780009

Wolf, C., & Best, H. (2014). 'Linear regression'. In H. Best, C. Wolf (Eds.) *The SAGE Handbook of Regression Analysis and Causal Inference* (pp. 57-82). London, UK: SAGE Publications Ltd. https://doi.org/10.4135/9781446288146.n4

Appendix A: Cognitive results for NEA 2021, grade III

This appendix includes grade III results from the NEA 2021. The results here may differ slightly from those published previously (BCSEA, 2023a) as, to ensure absolute continuity, all analyses were rerun using identical software and approaches as per those used for the analysis of the NEA 2024. The results reproduced here provide the basis for all comparisons between 2021 and 2024.

These tables are provided purely for information and no commentary is included.

Dzongkha Reading Literacy 2021

Table A1.1: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy by district

District	Mean	Standard error	95% confidence interval
Bumthang	307	11.6	284 – 329
Chukha	305	7.5	290 – 319
Dagana	289	9.3	271 – 307
Gasa	350	14.0	322 – 377
Gelephu Thromde	314	0.3	313 – 314
Haa	306	4.0	298 – 314
Lhuentse	309	5.9	297 – 320
Mongar	309	8.8	292 – 326
Paro	307	6.7	294 – 320
Pemagatshel	296	9.3	278 – 315
Phuntsholing Thromde	301	5.7	290 – 312
Punakha	323	5.1	313 – 333
Samdrup Jongkhar	299	4.9	289 – 308
Samdrup Jongkhar Thromde	316	16.9	283 – 349
Samtse	274	6.4	262 – 287
Sarpang	305	3.9	297 – 312
Thimphu	287	6.2	275 – 299
Thimphu Thromde	306	3.1	300 – 312
Trashigang	296	8.6	279 – 313
Trashiyangtse	294	12.8	269 – 319
Trongsa	293	13.8	266 – 320
Tsirang	279	3.3	272 – 285
Wangdue Phodrang	310	5.9	299 – 322
Zhemgang	299	11.3	277 – 322
National	**300**	**1.9**	**296 – 304**

Table A1.2: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy, by gender and district

District	Mean (Male)	Standard error (Male)	Mean (Female)	Standard error (Female)
Bumthang	296	14.5	315	13.7
Chukha	301	7.6	309	7.9
Dagana	286	10.6	292	9.3
Gasa	342	14.6	367	12.3
Gelephu Thromde	307	3.7	320	3.9
Haa	299	5.4	312	4.2
Lhuentse	305	4.7	311	8.0
Mongar	302	9.3	316	10.9
Paro	303	5.9	310	8.9
Pemagatshel	290	12.3	301	7.5
Phuntsholing Thromde	295	8.3	307	5.3
Punakha	314	5.6	333	5.4
Samdrup Jongkhar	296	6.7	301	6.5
Samdrup Jongkhar Thromde	304	13.8	326	17.4
Samtse	271	5.2	278	8.2
Sarpang	296	5.2	314	4.3
Thimphu	283	2.7	292	10.4
Thimphu Thromde	300	3.2	312	4.0
Trashigang	295	8.1	298	10.6
Trashiyangtse	296	12.6	293	16.6
Trongsa	289	9.6	297	18.0
Tsirang	273	2.5	284	6.1
Wangdue Phodrang	308	7.5	313	6.9
Zhemgang	295	15.0	303	8.0
National	**295**	**1.9**	**305**	**2.2**

Table A1.3: Percentile scores in grade III Dzongkha Reading Literacy in 2021, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	233	270	304	336	396	65	163
Male	220	266	296	320	375	54	154
National	**220**	**270**	**296**	**328**	**388**	**58**	**168**

Table A1.4: Percentile scores in grade III Dzongkha Reading Literacy in 2021 by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	233	270	288	331	413	60	180
Chukha	233	270	304	331	383	60	150
Dagana	214	260	287	318	383	58	169
Gasa	270	313	343	388	437	76	167
Gelephu Thromde	254	287	313	343	383	56	129
Haa	248	277	304	328	374	51	127
Lhuentse	239	280	304	336	381	56	142
Mongar	220	277	304	343	392	66	172
Paro	233	277	304	336	396	59	163
Pemagatshel	233	270	287	324	374	54	141
Phuntsholing Thromde	220	277	296	328	375	51	154
Punakha	260	288	320	349	396	61	136
Samdrup Jongkhar	239	266	296	324	392	58	153
S.Jongkhar Thromde	233	280	318	351	396	71	163
Samtse	187	254	277	304	349	50	162
Sarpang	239	277	304	328	388	51	149
Thimphu	220	260	280	311	374	51	154
Thimphu Thromde	239	277	304	331	383	54	144
Trashigang	195	266	296	328	383	62	188
Trashiyangtse	187	239	304	337	402	98	215
Trongsa	233	254	288	324	388	71	155
Tsirang	220	260	277	296	343	37	123
Wangdue Phodrang	239	277	304	337	402	60	163
Zhemgang	233	270	296	328	392	58	159
National	**220**	**270**	**296**	**328**	**388**	**58**	**168**

Table A1.5: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy by gender

Gender	Mean	Standard error	95% confidence interval
Female	305	2.2	300 - 309
Male	295	1.9	292 - 299

Table A1.6: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy by ECCD

ECCD status	Mean	Standard error	95% confidence interval
ECCD	303	2.4	298 - 307
Non-ECCD	298	2.2	294 - 302

Table A1.7: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy by home language

Home language	Mean	Standard error	95% confidence interval
Dzongkha	308	2.2	303 – 312
English	291	4.2	283 – 300
Others	297	2.2	293 – 301

Table A1.8: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy by family income

Family income	Mean	Standard Error	95% confidence interval
Less than Nu 100000	293	2.5	288 – 298
More than Nu 500000	311	3.2	304 – 317
Nu 100000-499999	305	2.0	301 – 309

Table A1.9: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy by father's education

Father's education	Mean	Standard error	95% confidence interval
College education	311	3.1	305 – 317
Did not go to school	294	2.6	288 – 299
School education	303	2.2	299 – 308

Table A1.10: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy by mother's education

Mother's education	Mean	Standard error	95% confidence interval
College education	306	4.1	298 – 314
Did not go to school	297	2.2	292 – 301
School education	308	2.2	304 – 313

Table A1.11: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy by school location

School location	Mean	Standard error	95% confidence interval
Rural	296	2.6	291 – 301
Urban	307	2.4	302 – 311

Table A1.12: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy by school management

School management	Mean	Standard error	95% confidence interval
Private school	298	4.2	290 – 306
Public school	300	1.9	296 – 304

Table A1.13: Mean scores for NEA 2021 grade III Dzongkha Reading Literacy by accommodation type

Accommodation type	Mean	Standard error	95% confidence interval
Boarder	287	4.3	279 – 296
Day scholar	301	1.9	297 – 305

English Reading Literacy 2021

Table A2.1: Mean scores for NEA 2021 grade III English Reading Literacy by district

District	Mean	Standard error	95% confidence interval
Bumthang	301	8.7	284 – 318
Chukha	301	8.1	285 – 317
Dagana	286	8.6	270 – 303
Gasa	304	9.7	285 – 323
Gelephu Thromde	319	2.2	315 – 323
Haa	303	9.7	284 – 322
Lhuentse	278	4.2	270 – 287
Mongar	289	4.1	281 – 297
Paro	321	7.9	305 – 336
Pemagatshel	283	3.5	276 – 290
Phuntsholing Thromde	334	3.6	327 – 341
Punakha	295	8.1	279 – 311
Samdrup Jongkhar	285	2.3	281 – 290
Samdrup Jongkhar Thromde	319	5.8	308 – 330
Samtse	288	5.6	277 – 299
Sarpang	299	6.5	286 – 312
Thimphu	293	5.9	281 – 304
Thimphu Thromde	339	5.4	328 – 349
Trashigang	290	5.9	278 – 301
Trashiyangtse	279	12.0	255 – 302
Trongsa	295	15.8	264 – 326
Tsirang	279	4.0	271 – 287
Wangdue Phodrang	295	8.2	279 – 311
Zhemgang	272	9.0	254 – 290
National	**300**	**2.1**	**296 – 304**

Table A2.2: Mean scores for NEA 2021 grade III English Reading Literacy, by gender and district

District	Mean (Male)	Standard error (Male)	Mean (Female)	Standard error (Female)
Bumthang	297	12.8	305	6.8
Chukha	301	7.8	301	9.4
Dagana	276	8.4	297	8.9
Gasa	300	6.0	314	18.6
Gelephu Thromde	313	1.5	325	3.7
Haa	295	10.5	310	10.4
Lhuentse	279	3.2	278	5.4
Mongar	282	5.8	296	4.6
Paro	315	7.6	326	8.7
Pemagatshel	286	6.2	281	5.5
Phuntsholing Thromde	322	6.7	347	6.6
Punakha	290	8.9	302	6.9
Samdrup Jongkhar	279	3.7	292	1.0
Samdrup Jongkhar Thromde	306	6.2	331	7.9
Samtse	287	5.6	289	6.2
Sarpang	294	6.7	305	6.8
Thimphu	291	6.4	295	7.1
Thimphu Thromde	335	5.8	343	5.8
Trashigang	283	5.6	298	6.6
Trashiyangtse	277	14.7	281	9.4
Trongsa	293	15.3	298	16.6
Tsirang	278	2.2	280	6.7
Wangdue Phodrang	294	8.6	296	8.5
Zhemgang	280	14.7	265	9.3
National	**296**	**2.2**	**304**	**2.3**

Table A2.3: Percentile scores in grade III English Reading Literacy in 2021, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	235	272	297	328	399	56	164
Male	230	263	289	319	399	56	168
National	**235**	**265**	**290**	**326**	**399**	**60**	**164**

Table A2.4: Percentile scores in grade III English Reading Literacy in 2021 by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	246	265	298	326	378	61	131
Chukha	235	269	290	326	399	57	163
Dagana	217	261	281	304	380	43	163
Gasa	235	281	290	348	412	67	176
Gelephu Thromde	230	274	328	360	410	86	179
Haa	235	272	298	333	380	61	144
Lhuentse	235	256	272	304	326	48	91
Mongar	242	263	289	312	343	49	101
Paro	247	281	312	355	412	74	165
Pemagatshel	223	266	282	306	336	40	113
Phuntsholing Thromde	246	297	326	371	437	74	191
Punakha	235	265	290	317	388	52	152
Samdrup Jongkhar	242	265	282	298	340	33	98
S.Jongkhar Thromde	253	289	312	348	427	59	174
Samtse	230	256	282	312	360	56	129
Sarpang	235	272	290	319	388	47	152
Thimphu	235	262	289	321	378	59	143
Thimphu Thromde	256	297	333	380	427	83	171
Trashigang	230	263	282	310	371	46	141
Trashiyangtse	200	253	278	297	378	44	178
Trongsa	217	263	289	319	399	56	182
Tsirang	223	256	274	298	343	42	120
Wangdue Phodrang	235	263	289	319	389	56	153
Zhemgang	209	246	267	297	351	51	142
National	**235**	**265**	**290**	**326**	**399**	**60**	**164**

Table A2.5: Mean scores for NEA 2021 grade III English Reading Literacy by gender

Gender	Mean	Standard error	95% confidence interval
Female	304	2.3	299 – 308
Male	296	2.2	292 – 301

Table A2.6: Mean scores for NEA 2021 grade III English Reading Literacy by ECCD status

ECCD status	Mean	Standard error	95% confidence interval
ECCD	305	2.9	300 – 311
Non-ECCD	295	2.1	291 – 299

Table A2.7: Mean scores for NEA 2021 grade III English Reading Literacy by home language

Home language	Mean	Standard error	95% confidence interval
Dzongkha	306	2.7	301 – 312
English	344	6.3	332 – 356
Others	294	2.1	290 – 298

Table A2.8: Mean scores for NEA 2021 grade III English Reading Literacy by family income

Family income	Mean	Standard error	95% confidence interval
Less than Nu 100000	285	1.9	281 – 288
More than Nu 500000	342	4.5	334 – 351
Nu 100000-499999	305	2.1	301 – 309

Table A2.9: Mean scores for NEA 2021 grade III English Reading Literacy by father's education

Father's education	Mean	Standard error	95% confidence interval
College education	347	4.3	338 – 355
Did not go to school	283	1.8	280 – 287
School education	303	2.1	299 – 307

Table A2.10: Mean scores for NEA 2021 grade III English Reading Literacy by mother's education

Mother's education	Mean	Standard error	95% confidence interval
College education	359	6.1	347 – 371
Did not go to school	287	1.7	284 – 290
School education	312	2.5	307 – 317

Table A2.11: Mean scores for NEA 2021 grade III English Reading Literacy by school location

School location	Mean	Standard error	95% confidence interval
Rural	286	2.1	281 – 290
Urban	322	2.7	316 – 327

Table A2.12: Mean scores for NEA 2021 grade III English Reading Literacy by school management

School management	Mean	Standard error	95% confidence interval
Private school	367	5.4	356 – 377
Public school	297	2.0	293 – 301

Table A2.13: Mean scores for NEA 2021 grade III English Reading Literacy by accommodation type

Accommodation type	Mean	Standard error	95% confidence interval
Boarder	281	2.7	275 – 286
Day scholar	302	2.2	298 – 306

Mathematical Literacy 2021

Table A3.1: Mean scores for NEA 2021 grade III Mathematical Literacy by district

District	Mean	Standard error	95% confidence interval
Bumthang	304	5.1	294 – 314
Chukha	304	8.8	287 – 322
Dagana	286	7.1	272 – 300
Gasa	307	14.5	278 – 335
Gelephu Thromde	329	3.4	322 – 335
Haa	291	8.1	275 – 307
Lhuentse	280	2.9	274 – 286
Mongar	287	2.5	282 – 292
Paro	321	6.9	307 – 334
Pemagatshel	287	6.3	275 – 299
Phuntsholing Thromde	329	5.2	319 – 339
Punakha	295	9.9	275 – 314
Samdrup Jongkhar	285	5.0	275 – 294
Samdrup Jongkhar Thromde	313	0.7	312 – 315
Samtse	289	4.5	280 – 298
Sarpang	308	8.4	291 – 324
Thimphu	288	2.9	282 – 294
Thimphu Thromde	330	4.2	321 – 338
Trashigang	288	5.0	279 – 298
Trashiyangtse	282	11.8	259 – 305
Trongsa	299	15.7	268 – 330
Tsirang	278	2.3	273 – 282
Wangdue Phodrang	301	6.9	287 – 314
Zhemgang	282	7.6	268 – 297
National	**300**	**1.9**	**296 – 304**

Table A3.2: Mean scores for NEA 2021 grade III Mathematical Literacy, by gender and district

District	Mean (Male)	Standard Error (Male)	Mean (Female)	Standard Error (Female)
Bumthang	305	7.6	302	3.6
Chukha	304	8.8	305	10.2
Dagana	275	8.1	296	7.3
Gasa	304	9.6	313	26.2
Gelephu Thromde	326	5.6	331	0.8
Haa	294	13.4	289	5.1
Lhuentse	275	4.6	284	4.6
Mongar	289	3.7	285	3.1
Paro	320	6.0	321	8.2
Pemagatshel	287	8.1	287	5.2
Phuntsholing Thromde	322	8.3	337	4.9
Punakha	296	9.1	294	12.8
Samdrup Jongkhar	286	5.2	282	6.6
Samdrup Jongkhar Thromde	309	3.0	318	0.5
Samtse	290	4.6	288	5.5
Sarpang	306	8.9	310	8.8
Thimphu	289	3.1	287	3.7
Thimphu Thromde	329	5.0	331	4.4
Trashigang	288	5.0	290	5.7
Trashiyangtse	282	18.5	282	5.8
Trongsa	289	16.5	311	13.9
Tsirang	279	2.7	277	4.4
Wangdue Phodrang	300	8.8	301	6.7
Zhemgang	290	14.6	276	5.1
National	**299**	**2.1**	**301**	**2.1**

Table A3.3: Percentile scores in grade III Mathematical Literacy in 2021, nationally and by gender

Group	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Female	232	269	291	325	399	56	167
Male	228	269	291	324	402	54	174
National	**232**	**269**	**291**	**324**	**402**	**54**	**170**

Table A3.4: Percentile scores in grade III Mathematical Literacy in 2021 by district

District	Percentile scores					Score range	
	5th	25th	50th	75th	95th	25th–75th	5th–95th
Bumthang	258	273	291	324	409	50	150
Chukha	232	269	291	334	409	64	177
Dagana	216	256	280	308	367	51	151
Gasa	246	264	291	342	404	78	158
Gelephu Thromde	247	289	324	364	445	75	198
Haa	232	264	289	316	364	52	132
Lhuentse	228	258	280	299	339	41	111
Mongar	232	264	282	308	364	44	132
Paro	247	286	316	347	415	62	169
Pemagatshel	228	264	289	307	350	43	122
Phuntsholing Thromde	246	291	318	359	426	68	180
Punakha	233	265	282	316	382	51	149
Samdrup Jongkhar	212	258	282	308	347	49	135
S.Jongkhar Thromde	258	282	303	340	402	57	144
Samtse	232	264	289	309	363	46	131
Sarpang	241	273	300	332	406	59	165
Thimphu	216	258	290	315	364	57	148
Thimphu Thromde	253	289	324	364	426	75	173
Trashigang	232	264	282	308	364	44	132
Trashiyangtse	212	258	280	307	382	49	169
Trongsa	228	258	291	331	404	73	176
Tsirang	228	253	280	298	348	45	120
Wangdue Phodrang	232	269	291	331	406	62	174
Zhemgang	232	258	280	299	347	41	115
National	**232**	**269**	**291**	**324**	**402**	**54**	**170**

Table A3.5: Mean scores for NEA 2021 grade III Mathematical Literacy by gender

Gender	Mean	Standard error	95% confidence interval
Female	301	2.1	297 – 305
Male	299	2.1	295 – 303

Table A3.6: Mean scores for NEA 2021 grade III Mathematical Literacy by ECCD status

ECCD status	Mean	Standard error	95% confidence interval
ECCD	305	2.6	300 – 310
non-ECCD	296	1.9	292 – 300

Table A3.7: Mean scores for NEA 2021 grade III Mathematical Literacy by home language

Home language	Mean	Standard error	95% confidence interval
Dzongkha	306	2.5	301 – 311
English	336	5.0	327 – 346
Others	295	2.0	291 – 299

Table A3.8: Mean scores for NEA 2021 grade III Mathematical Literacy by family income

Family income	Mean	Standard error	95% confidence interval
Less than Nu 100000	285	1.8	282 – 289
More than Nu 500000	338	3.9	330 – 346
Nu 100000-499999	305	1.9	302 – 309

Table A3.9: Mean scores for NEA 2021 grade III Mathematical Literacy by father's education

Father's education	Mean	Standard error	95% confidence interval
College education	342	3.4	335 – 349
Did not go to school	285	1.7	281 – 288
School education	304	2.1	299 – 308

Table A3.10: Mean scores for NEA 2021 grade III Mathematical Literacy by mother's education

Mother's education	Mean	Standard error	95% confidence interval
College education	352	5.3	342 – 363
Did not go to school	287	1.6	284 – 290
School education	314	2.3	309 – 318

Table A3.11: Mean scores for NEA 2021 grade III Mathematical Literacy by school location

School location	Mean	Standard error	95% confidence interval
Rural	288	2.0	283 – 292
Urban	319	2.4	314 – 324

Table A3.12: Mean scores for NEA 2021 grade III Mathematical Literacy by school management

School management	Mean	Standard error	95% confidence interval
Private school	350	5.1	340 – 360
Public school	298	1.9	294 – 302

Table A3.13: Mean scores for NEA 2021 grade III Mathematical literacy, by accommodation type

Accommodation type	Mean	Standard error	95% confidence interval
Boarder	278	2.6	273 – 283
Day scholar	302	2.0	298 – 306

Appendix B: Technical annex

This appendix includes details of how analysis of the 2024 NEA was completed. Many of the techniques follow those that were used for the 2021 NEA. For that reason, some of the text in this annex is the same as in the technical report on the previous cycle of the NEA (BCSEA, 2023b). This annex begins by describing changes to the methodology that have been made since the analysis of the 2021 NEA.

Summary of methodological changes since NEA 2021

A small number of methodological changes were made for the analysis of the 2024 NEA compared to 2021. In every case, the changes were made to simplify the process of running the analysis and to improve the reproducibility of results. None of the changes represent a change to the underlying philosophy behind the design and analysis of the NEA. Furthermore, all major analyses of data from the NEA 2021 have been repeated using the adjusted methodology (see Appendix A: Cognitive results for NEA 2021, grade III), and we have confirmed that the methodological changes have had no major impact on the conclusions from the earlier study. Further details of the changes are given below.

Minor adjustments to the formulae used for sample weighting

The approach we have used is intended to achieve exactly the same goals as the Australian Council for Educational Research's (ACER) approach to weighting in 2021. The only change is that for calculating the 2024 weights we have fewer formulae (as some stages have been collapsed). Furthermore, the new approach allows us to adjust weighting in light of explicit checks on the representativeness of the sample. In particular, the 'strata' variable used to create student weights is not the same as that used for sampling. Rather, it is a new variable devised after data collection is complete, to account for any identified lack of representativeness in the sample.

Same student weights used for all cognitive domains

In 2021, to account for slightly different non-response patterns within each cognitive domain, different weights were used for each one. However, since nearly all students completed assessments in all domains, the various sets of weights were almost identical, with a correlation in excess of 0.999. That is, using different sets of weights hardly affected analysis.

The advantage of using a single set of weights is that it greatly simplifies further secondary analysis. For example, if an analyst wishes to look at more than one subject simultaneously, there is no need to recalculate weights. Furthermore, using a single set of weights is common practice within international studies such as the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS), even for analysis of questionnaires where not all students respond to all questions.

Change of Item Response Theory (IRT) software

In 2021, IRT (Rasch) models were fitted using the Conquest software. However, this software is not universally available to analysts outside of ACER. Thus, to improve reproducibility, we have used freely available packages within the statistical software R (R Core Team, 2024). Specifically, the R package 'mirt' (Chalmers, 2012) was used to complete IRT analyses.

The accuracy of the software has been verified by reanalysing data from 2021, and by checking that all item difficulties calculated using this software match those reported in 2021 up to three decimal places.

Formal approach to delinking items across test versions

Part of the NEA analysis involves establishing whether the difficulty of common (or 'link') items varies depending upon which test version they are included in. This is an important part of placing the results of students on the same scale, regardless of which test version they have completed. The guidelines for analysis of the 2021 NEA suggested a manual approach to this issue (BCSEA, 2021). Items with very different parameters were *delinked* for the purposes of further analysis (see the section on ability estimation and test equating, below).

For new grade VI tests, we adopted essentially the same approach, but using a specific set formula for deciding which items should be considered to have different parameters in test versions A and B. Specifically, we used the criterion on page 2 of Huynh & Meyer (2010). Using a specific formula makes it clear how decisions about which items to delink were made so that other analysts could reproduce the same results.

For 2024 grade III tests, we delinked exactly the same items between tests A and B as were identified for delinking in 2021 (unless there were extremely strong reasons to delink further items). This was done because taking a consistent approach within grade III improves comparability between 2021 and 2024.

Scale scores derived using weighted likelihood estimation (WLE) of student abilities rather than plausible values

Much of the NEA analysis in both 2021 and 2024 is concerned with the scale scores achieved in each domain by different subgroups of students. For the 2021 NEA, scale scores were derived in the form of 'plausible values' (BCSEA, 2023b, page 57). Using plausible values means that, rather than producing a single estimate of each student's ability, we generate five imputed values, each of which are drawn from the distribution of each student's *true* ability conditional upon their responses to cognitive items and to (some of) the questionnaire. That is, the use of plausible values is intended to explicitly account for the fact that a single, short assessment cannot perfectly measure a student's ability across the entirety of a subject, and to account for this uncertainty within analysis. In theory, using plausible values should improve estimates at population level. For example, the

methodology might allow more accurate estimates of the gaps in performance between two subgroups of students within the population (e.g., boys and girls).

However, despite these theoretical advantages, we believe that, in practice, for the NEA in Bhutan it is better to generate a single scale score for each student, and to base all analyses on these whilst acknowledging that, like scores from any educational assessment, NEA scale scores contain a little measurement error.

As with the changes above, the main reason for preferring the use of a single scale score is reproducibility. Reproducibility is difficult to achieve using plausible values, since they effectively rely on drawing random numbers from a distribution for each student. Thus, reproducing the same random numbers as a previous researcher is difficult. This can affect reported results, particularly for subgroups with small samples, such as those within smaller districts. In contrast, using single ability estimates means that each student's scale scores are a direct function of which questions they attempted (i.e., which test version) and how many they answered correctly. By extension, this means that when we report that (say) one district has displayed a higher performance than another, this result can be directly traced back to how many items students answered correctly within each test version. This is preferable, both in terms of reproducibility and also for quality assurance of results.

On the issue of producing accurate population estimates, it is notable that, since, at baseline, scale scores are defined to have a given mean and standard deviation (SD), the change to using single ability estimates has no real impact on the ability distribution we see at a national level.

More importantly, in order to benefit from the use of plausible values, every variable that might later be linked to performance should be included in the 'conditioning model' used to generate them (BCSEA, 2023b, page 59). However, this is difficult to achieve early in analysis when ideas for later research are still being developed. Indeed, it is possible that, in future, later researchers may wish to investigate the impact of other factors, so far not considered, on performance during the NEA. For example, research may wish to link NEA data to wider administrative data (see Carroll & Benton, 2018, for an example of this approach being used with PISA data). In fact, in 2021, certain variables used in later analysis were not included in the conditioning model (which they should have been). For example, regression modelling explored the impact of 'attitude towards learning' on performance (BCSEA, 2023a, page 79). However, this was not included in the conditioning model (BCSEA, 2023b, page 59). Previous research (Benton, 2017) demonstrated some of the problems that can occur when the conditioning model is not properly specified. Furthermore, other research (Jerrim et al., 2017) has shown that uncritical reliance on the plausible values methodology can lead to misleading results. For this reason, it is safer to use estimates of each student's ability based upon their performance on the cognitive tests alone, and to accept the caveats associated with this.

As mentioned earlier, as part of the analysis of the 2024 NEA we verified that the changes in approach (including the change to not using plausible values) did not have any major impact on results from the 2021 NEA. Furthermore, previous work (Carroll & Benton, 2018, page 35) compared the impact of relying on single estimates of ability rather than plausible values in analysis of PISA data and found that the main results of analysis were robust to this change. For these reasons, we are confident that the use of single ability estimates is an appropriate approach to the analysis of NEA 2024 data. For the purposes of our analysis, we have used Warm's WLE approach to generate these (Warm, 1989).

One caveat regarding our recommendation is that this decision may need to be revisited if the design of the NEA assessments is substantially changed in future (e.g., increased in length). However, as long as the test design is kept fairly consistent, we would expect the approach to analysis recommended here to produce robust results.

Technical notes on producing scale scores

Item review

In the first phase of analysis, all items were first reviewed for quality. Item reviews were conducted based upon Classical Test Theory (CTT) only. Specifically, in each test booklet, any items displaying a correlation between the score on the item and the score on the rest of the test below 0.2 were reviewed by subject experts. In a small number of cases, this review identified an issue with the scoring key which could be corrected before continuing with analysis. For the remaining items, reviewers chose whether to drop the item or to retain it for further analysis. Items showing negative discriminations were dropped, along with any others where, after review, experts felt there were obvious issues with the content of the item.

Further analysis then proceeded using data from the retained (and, in some cases, rescored) items only. The next stage of analysis was to fit IRT models.

Item Response Theory (IRT) models

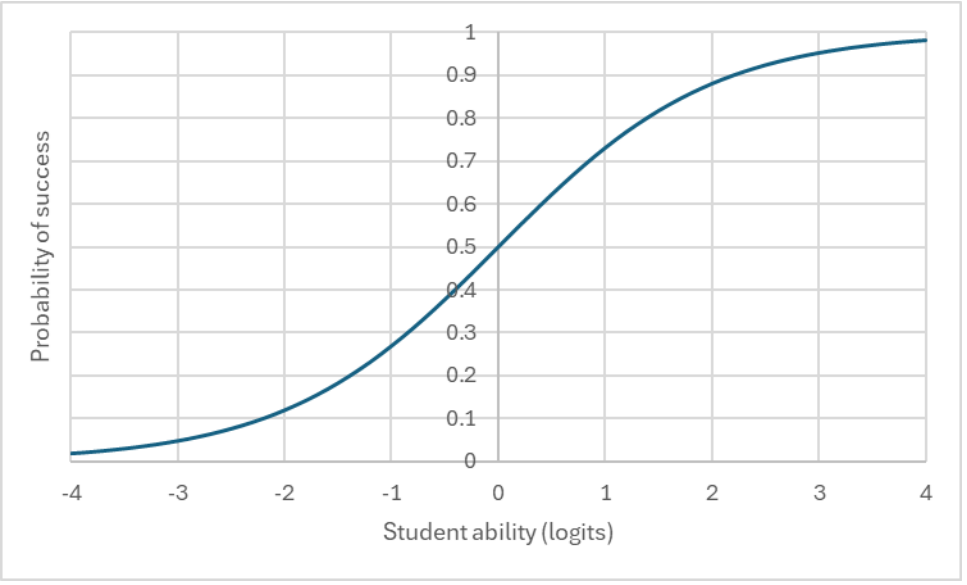
IRT models focus on estimating each student's ability on the construct (i.e., a latent trait such as reading ability) that is being tested. Because constructs are latent, they must be indirectly measured through related observables. A score on a questionnaire or test corresponds to the set of responses on the observed variables (the items), which in turn are indicators of the latent construct.

Unlike CTT, where student ability is described within the boundaries of 0% and 100% correct on a test, a latent trait is measured on an infinite continuum, where the measurement unit is denoted as a logit. If a mathematics test is given to students, the IRT approach would try to estimate each student's level on the latent trait of mathematics. The logit defines distances between differences in scores, which can be easily interpreted. It can also link

item scores to person scores. IRT offers greater capacity than CTT for linking different tests and providing substantive interpretations to scores on a test. It also helps in placing scores from different tests on the same scale for comparison over time.

IRT models are probabilistic. They give the probability of a successful response to an item by a person. In the example given in Figure B1, the blue line shows the probability of success on an item at each ability level. For a high-ability student, towards the right-hand side of the figure, the probability of success on this item is close to 1. For a low-ability student, towards the left-hand side of the figure, the probability of success on this item is close to 0. For a student of average ability, the probability of success is 0.5. The ability level of the average person (0 in this case) is also the item difficulty of this item. The notion of an item difficulty is defined as the ability level at which a person would have a 50% chance of being successful on the item.

Figure B1: Probability of success on an item with difficulty 0, for students at different levels of ability



For consistency with the 2021 NEA, throughout analysis we have relied upon the Rasch model (one-parameter logistic model). The Rasch model links a single latent trait in each cognitive domain (i.e., student ability) with a single item parameter (the item difficulty).

It is modelled as:

$$P(x_{ij} = 1) = \frac{\exp(\theta_j - b_i)}{1 + \exp(\theta_j - b_i)}$$

where x_{ij} is the score of the jth person on the ith item, θj is the ability of the jth person and b_i is the difficulty of the ith item.

The model above only works for dichotomous items – that is, items that are either answered fully correctly or incorrectly. For items with more than two categories, such as writing items that may be given scores between 0 and 4, the more general Rasch partial credit model can be applied. It takes the form of:

$$P(x_{ij} = k) = \frac{\exp\left(\sum_{l=0}^{k} \theta_j - b_i + t_{il}\right)}{\sum_{h=0}^{m_i} \exp\left(\sum_{l=0}^{h} \theta_j - b_i + t_{il}\right)}$$

where $P(x_{ij} = k)$ is the probability of the jth person achieving a score of k on the ith item, θj is the ability of the jth person, b_i is the overall difficulty of the ith item, t_{il} is an additional step parameter for the lth mark on the ith item, and m_i is the maximum available score on the ith item.

More complex IRT models are available (see BCSEA, 2023b, page 49, for brief descriptions) and different IRT models have different strengths and weaknesses. For example, recent analyses of data from PISA and TIMSS have relied upon more complex IRT approaches. However, for consistency with the NEA 2021, the Rasch model was used for analysis of the 2024 NEA.

Ability estimation and test equating

The aim of test equating is to report test scores on a consistent scale so that, regardless of which test version students have taken, their performance can be directly compared. For the 2024 NEA, data from students who had taken either test A or test B were analysed concurrently. That is, all data from all students was combined into a single data set with rows representing students and columns representing items.

However, before this could be done, it was necessary to check whether, for common items, the same item difficulty was applicable across both test versions. To do this, an IRT model was fitted independently to each test version and the item difficulties were compared. Outlying differences in item difficulties (that is, items with unusually large changes) were identified using the method from Huynh & Meyer (2010). These outlying items were treated as if they were different items within each test version. Note that, for grade III, such 'delinked' items had already been identified in analysis for the 2021 NEA, and this list was used as the basis for delinking in the 2024 NEA.

Having identified delinked items, and combined data from both test versions on this basis, IRT analysis was then undertaken in two steps:

1. Analysis with omitted items treated as missing – this initial IRT analysis was used to estimate the difficulty of each item.
2. Analysis with omitted items treated as incorrect – note that if an item was not included in the booklet that the student attempted, it was still treated as missing.

The item difficulties in this secondary IRT analysis were anchored at the values from step 1. This latter IRT analysis was used to generate student abilities using the WLE method.

The reason for using the above approach was primarily for consistency with the 2021 NEA. The rationale for the two-step procedure is as follows:

- A student omitting an item should not be taken to indicate that an item is hard. After all, most items are multiple choice, and the student could easily have had a guess. For this reason, an omitted item indicates at least some level of lack of engagement from the student. For this reason, when we estimate the Rasch (or IRT) difficulties of items, omitted answers are treated as missing data and not used within estimation.
- On the other hand, a student omitting an item does imply something about their ability. That is, even if they have omitted the item due to a lack of engagement, this may still be an indicator of a low ability level. For this reason, when we estimate the Rasch (or IRT) abilities of students, omitted answers are treated as incorrect answers. Thus, a separate IRT estimation stage from that detailed above is needed to compute student abilities.

An advantage of this approach is that results relating to (say) the performance of different regions in Bhutan will be very strongly associated with the simple total correct scores achieved in these regions (with minor differences, for the reasons explained below). This can be helpful for quality assurance purposes, and also when results need further explanation.

Note that a small number of (very rarely used) codes were still treated as missing values within the step 2 IRT model. Specifically, codes 7 (invalid answers) and 5 (misprinted question) were treated as missing values. In addition, where invalid codes have been entered during data entry, these too will be treated as missing. These factors may lead to very small discrepancies between student results based upon total sum scores and those based upon WLE.

Note that, for grade III students in the 2024 NEA, an extra step was applied between steps 1 and 2 above to identify whether the item difficulties from the 2021 analysis could be used in 2024. In order to do this, item difficulties from (step 1 in) 2021 and 2024 were compared. Any outlying items were treated as if they were distinct items in the two cycles. Then, in step 2, item difficulties for all other items from 2021 were used to anchor the analysis of grade III in 2024.

NEA proficiency scales

Having calculated the WLE ability estimates for each student in each domain, the next step was to convert them to scale scores. For grade VI, the WLE estimates of ability in each domain in 2024 were linearly rescaled to have a (weighted) mean of 300 and a (weighted) SD of 50. For grade III, WLE estimates of ability in each domain in 2021 were linearly rescaled to have a (weighted) mean of 300 and a (weighted) SD of 50. The rescaling parameters from 2021 were reapplied to the WLE estimates of students taking the 2024 NEA to put scale scores from 2024 participants on a scale that could be compared to 2021.

The coefficients to convert WLE estimates of ability to scale scores in each domain are shown in Tables B1 and B2. More specifically, the tables show the (weighted) means and SDs of the WLE estimates of ability based on analyses where omitted items were treated as incorrect. The values for the grade III assessments are based upon analysis of data from 2021 and those for grade VI are based on 2024 data. Scale scores are created by first standardising the ability estimates by subtracting the relevant mean and multiplying by the SD. Then the scale scores are created by multiplying the resulting number by 50 and, finally, adding 300. The values ensure a (weighted) national mean of 300 and a SD of 50 in the baseline years for each set of assessments (2021 and 2024 for grades III and VI respectively).

Table B1: Scale score conversion parameters for the grade III assessments

Domain	Mean of WLE estimates in 2021	SD of WLE estimates in 2021
English Reading	-0.1378	1.0186
Dzongkha Reading	-0.2825	1.0722
Mathematics	-0.1371	1.0365

Table B2: Scale score conversion parameters for the grade VI assessments

Domain	Mean of WLE estimates in 2024	SD of WLE estimates in 2024
English Reading	0.0104	0.9453
English Writing	-0.0201	0.9407
Dzongkha Reading	-0.1786	0.9233
Dzongkha Writing	-0.1646	1.0468
Mathematics	-0.0091	0.7868
Science	-0.0077	0.7764

Proficiency level cut-offs

As described in the main report, student achievement was also reported in terms of proficiency levels. The scores of students can be converted into proficiency levels using the cut-offs shown in Tables B3 to B6. This can either be done based upon the original WLE estimates of ability or based upon scale scores. The former has a closer relationship with

how proficiency bands were defined in the first place (derived from item difficulties), whereas the latter may be more convenient during secondary analyses. The two sets of values can be converted to one another using the scale score conversion parameters listed in Tables B1 and B2.

Note that the cut-off values for 2021 are taken from previous analyses in 2021, whereas those in 2024 were newly defined for the current report. To improve reproducibility, the cut-offs on the WLE scale for 2024 were rounded to 2 decimal places before being applied. For this reason, different numbers of decimal places are used throughout the various tables.

The cut-offs determine the minimum level of performance to be assigned to each proficiency level. Students with performance levels below the Level 2 cut-off are defined to be in Level 1.

Table B3: Proficiency level cut-off values for the grade III assessments on the WLE ability scale

Domain	Cut-offs for each proficiency level on the WLE scale			
	Level 2	Level 3	Level 4	Level 5
English Reading	-1.31761	-0.38690	0.43784	-
Dzongkha Reading	-1.30535	-0.45595	0.38113	-
Mathematics	-1.47374	-0.80056	0.14509	0.97867

Table B4: Proficiency level cut-off values for the grade III assessments as scale score values

Domain	Cut-offs for each proficiency level as scale scores			
	Level 2	Level 3	Level 4	Level 5
English Reading	242.0865	287.7725	328.2565	-
Dzongkha Reading	252.3015	291.9115	330.9470	-
Mathematics	235.5215	267.9950	313.6125	353.8240

Table B5: Proficiency level cut-off values for the grade VI assessments on the WLE ability scale

Domain	Cut-offs for each proficiency level on the WLE scale			
	Level 2	Level 3	Level 4	Level 5
English Reading	-1.64	-0.79	0.05	-
English Writing	-2.20	-1.21	-0.28	0.52
Dzongkha Reading	-1.09	0.01	0.91	-
Dzongkha writing	-0.99	-0.17	0.69	-
Mathematics	-0.85	0.20	1.03	1.85
Science	-1.08	-0.27	0.53	1.35

Table B6: Proficiency level cut-off values for the grade VI assessments as scale score values

Domain	Cut-offs for each proficiency level as scale scores			
	Level 2	Level 3	Level 4	Level 5
English Reading	212.7050	257.6642	302.0946	-
English Writing	184.1342	236.7545	286.1858	328.7073
Dzongkha Reading	250.6444	310.2134	358.9516	-
Dzongkha writing	260.5751	299.7421	340.8196	-
Mathematics	246.5620	313.2880	366.0333	418.1431
Science	230.9441	283.1079	334.6278	387.4356

The methodology used to create these proficiency level cut-offs is identical to that described in BCSEA (2021). However, for grade VI English and Dzongkha writing domains, a slightly different methodology was employed due to the inclusion of a much larger proportion of multi-mark items compared to other domains. For these writing domains, the difficulty of each mark point within each item, rather than the overall difficulty of each item, was used to classify mark points into proficiency bands. For this purpose, the difficulties of individual marks were first converted into Thurstone thresholds, which represent the ability needed to have a 50% chance of achieving each mark or above. Mark difficulties were then sorted and split into bands as for the other domains.

Assessment statistics

For information, this section provides some basic statistics on the functioning of the 2024 assessments.

Mean scores and classical reliabilities

To begin with, Tables B7 and B8 show the means and SD of the raw scores of students taking each test version. Note that these statistics are based upon analysis of unweighted data and the assumption of all missing responses being coded as incorrect. Items removed from tests after item review are not included in this analysis. The tables also show the classical reliability of each test version based upon Cronbach's alpha. The lowest value is 0.76 (Mathematics test version B in grade VI), which indicates that all tests had an acceptable level of reliability given their length. The highest reliability (of 0.88) was seen for English Reading Literacy test version B in grade III.

Table B7: Classical test statistics for the grade III assessments

Subject	Test version	Reliability (alpha)	Number of students	Number of items	Maximum available score	Mean	SD
English Reading	A	0.86	2300	30	31	15.0	6.6
	B	0.88	2290	29	30	15.4	6.7
Dzongkha Reading	A	0.86	2305	29	29	9.8	5.9
	B	0.84	2300	30	31	10.2	5.8
Mathematics	A	0.84	2287	30	30	12.5	5.8
	B	0.85	2276	30	30	12.3	5.9

Table B8: Classical test statistics for the grade VI assessments

Subject	Test version	Reliability (alpha)	Number of students	Number of items	Maximum available score	Mean	SD
English Reading	A	0.77	2394	28	32	19.8	19.8
	B	0.83	2400	29	33	18.1	18.1
English Writing	A	0.78	2391	16	35	18.7	18.7
	B	0.80	2395	17	36	19.7	19.7
Dzongkha Reading	A	0.79	2393	25	33	12.1	12.1
	B	0.81	2402	27	35	15.2	15.2
Dzongkha Writing	A	0.82	2392	15	34	15.7	15.7
	B	0.82	2398	17	37	17.2	17.2
Science	A	0.80	2396	35	41	17.8	17.8
	B	0.80	2397	36	43	20.6	20.6
Mathematics	A	0.79	2396	37	38	13.0	13.0
	B	0.76	2394	38	39	15.8	15.8

Item-person maps

One way to review whether the items within a test are of an appropriate ability for the students taking it (i.e., are well targeted) is an item-person map (sometimes called a 'Wright map'). These maps compare the abilities of students to the difficulties of items on the same scale.

Item-person maps for each cognitive domain in grade VI are shown in Figures B2 to B7. These maps were generated using the 'WrightMap' R package (Torres Irribarra & Freund, 2024). Item-person maps for the grade III tests can be found in the report on the 2021 NEA (BCSEA, 2023b). Note that these maps are generated based on the assumption that all omitted responses are coded as missing, as was done when estimating item difficulty. The item numbers on these plots are a combination of items from two test booklets, and do not necessarily represent the item order in either test booklet.

Figure B2: Item-person map for grade VI Dzongkha Reading Literacy in 2024

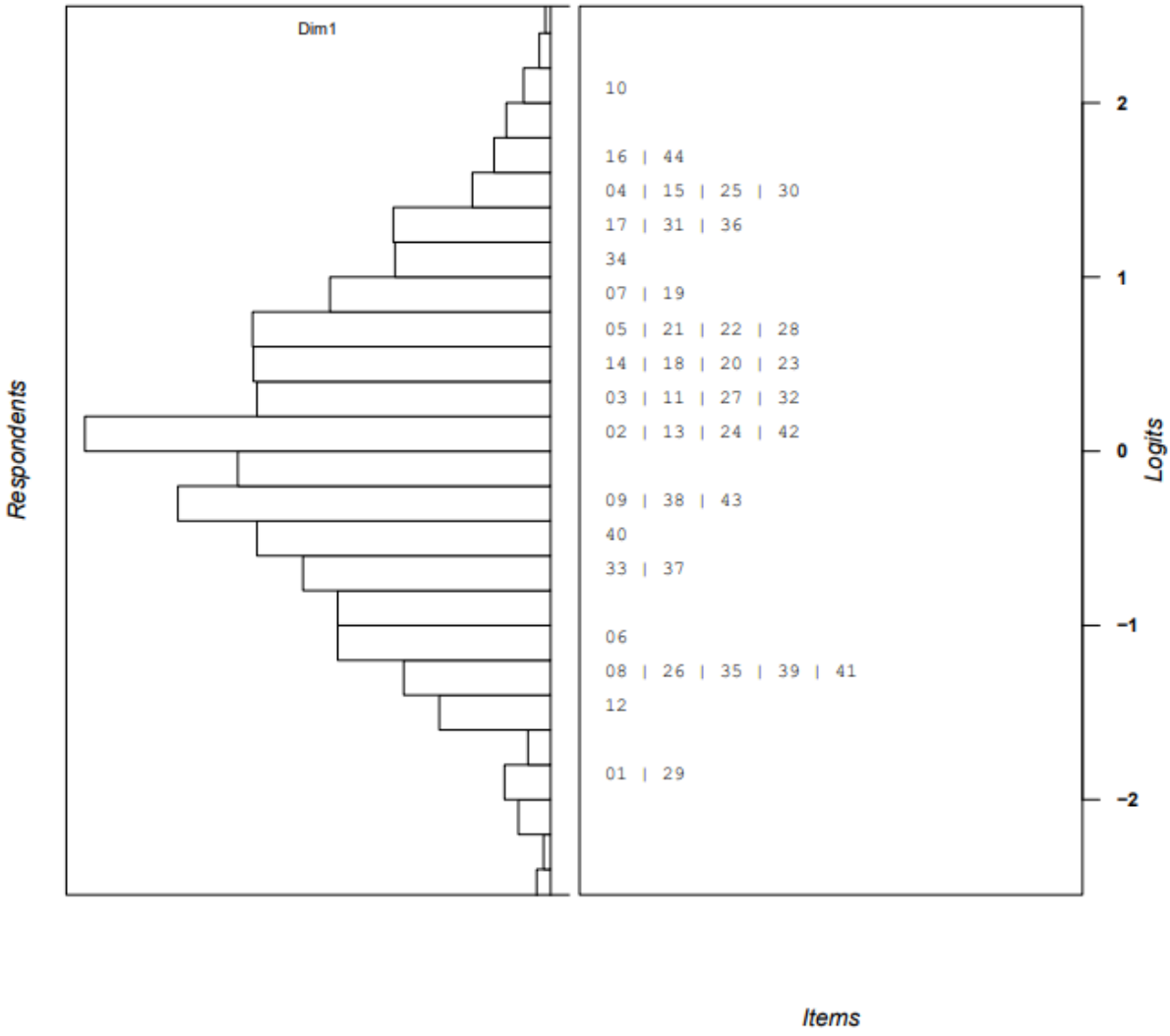


Figure B3: Item-person map for grade VI Dzongkha Writing Literacy in 2024

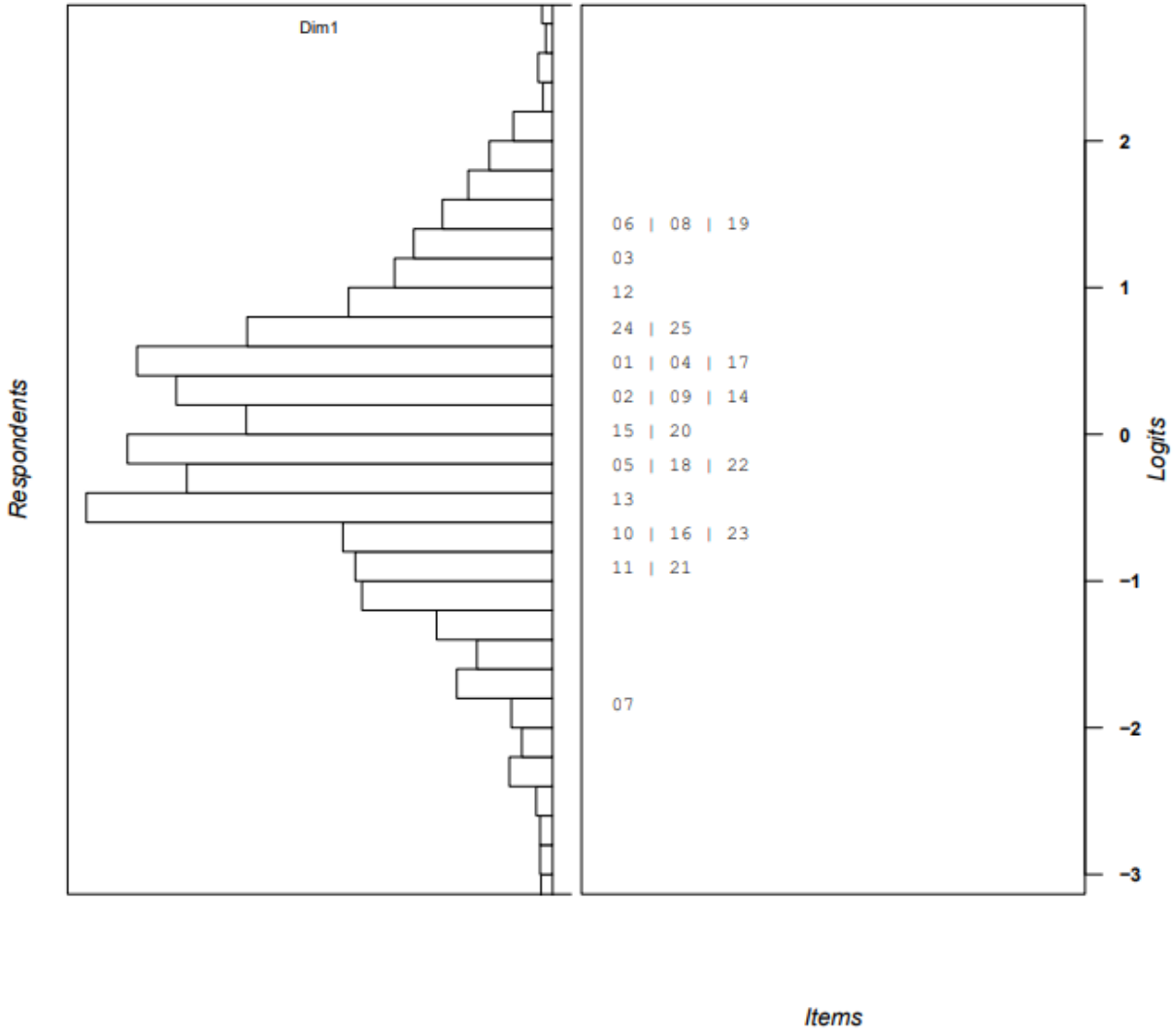


Figure B4: Item-person map for grade VI English Reading Literacy in 2024

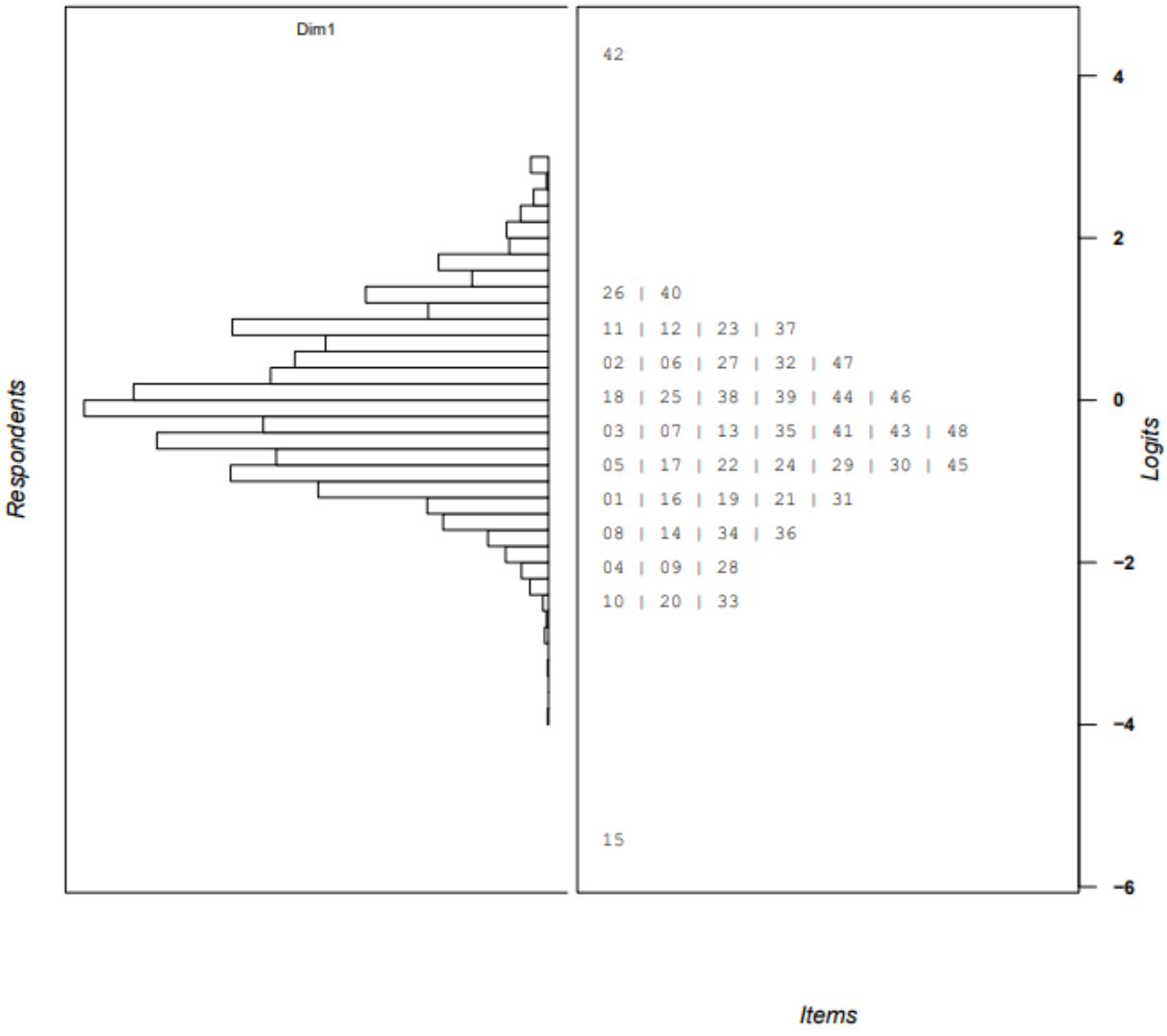


Figure B5: Item-person map for grade VI English Writing Literacy in 2024

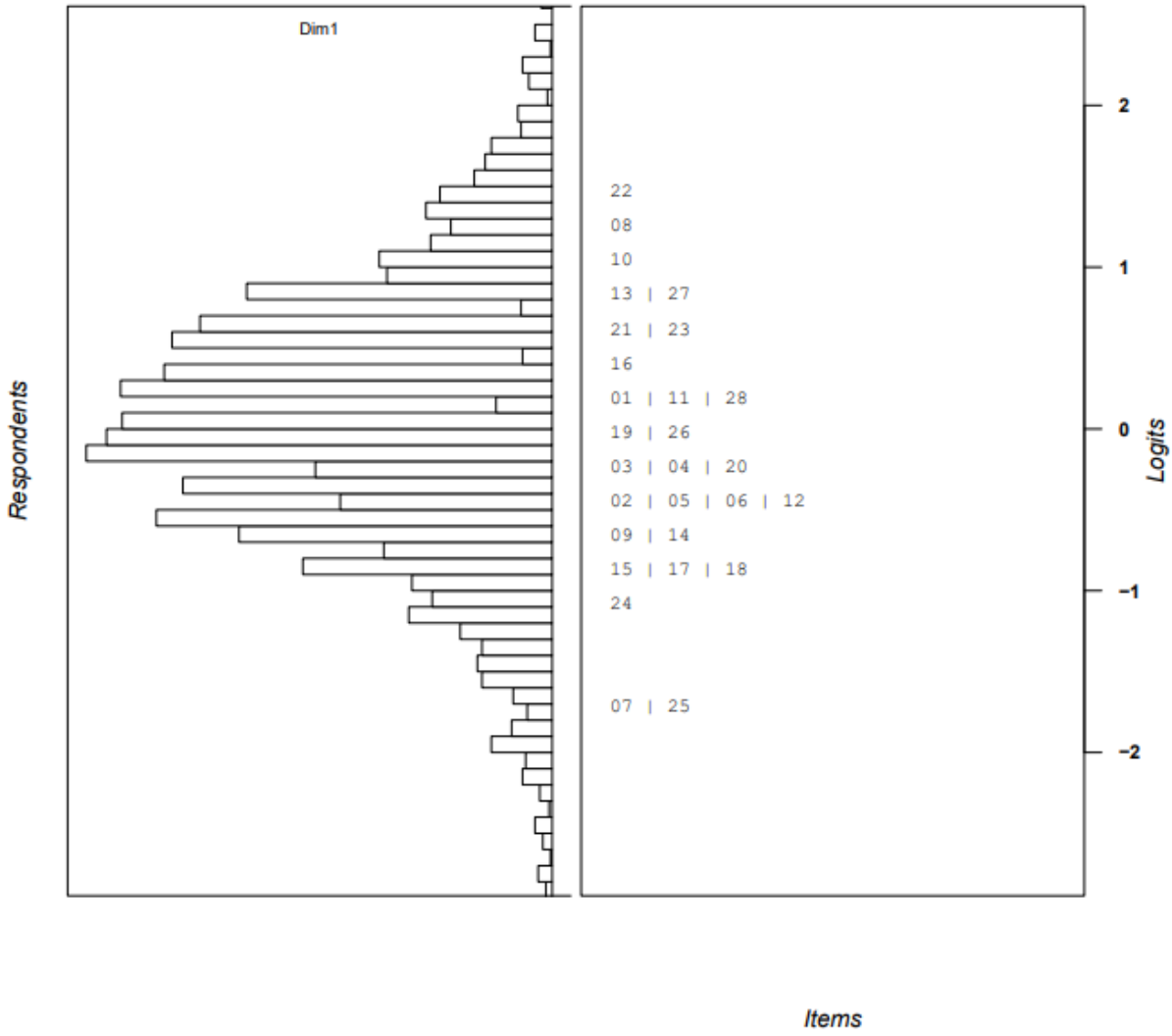


Figure B6: Item-person map for grade VI Mathematical Literacy in 2024

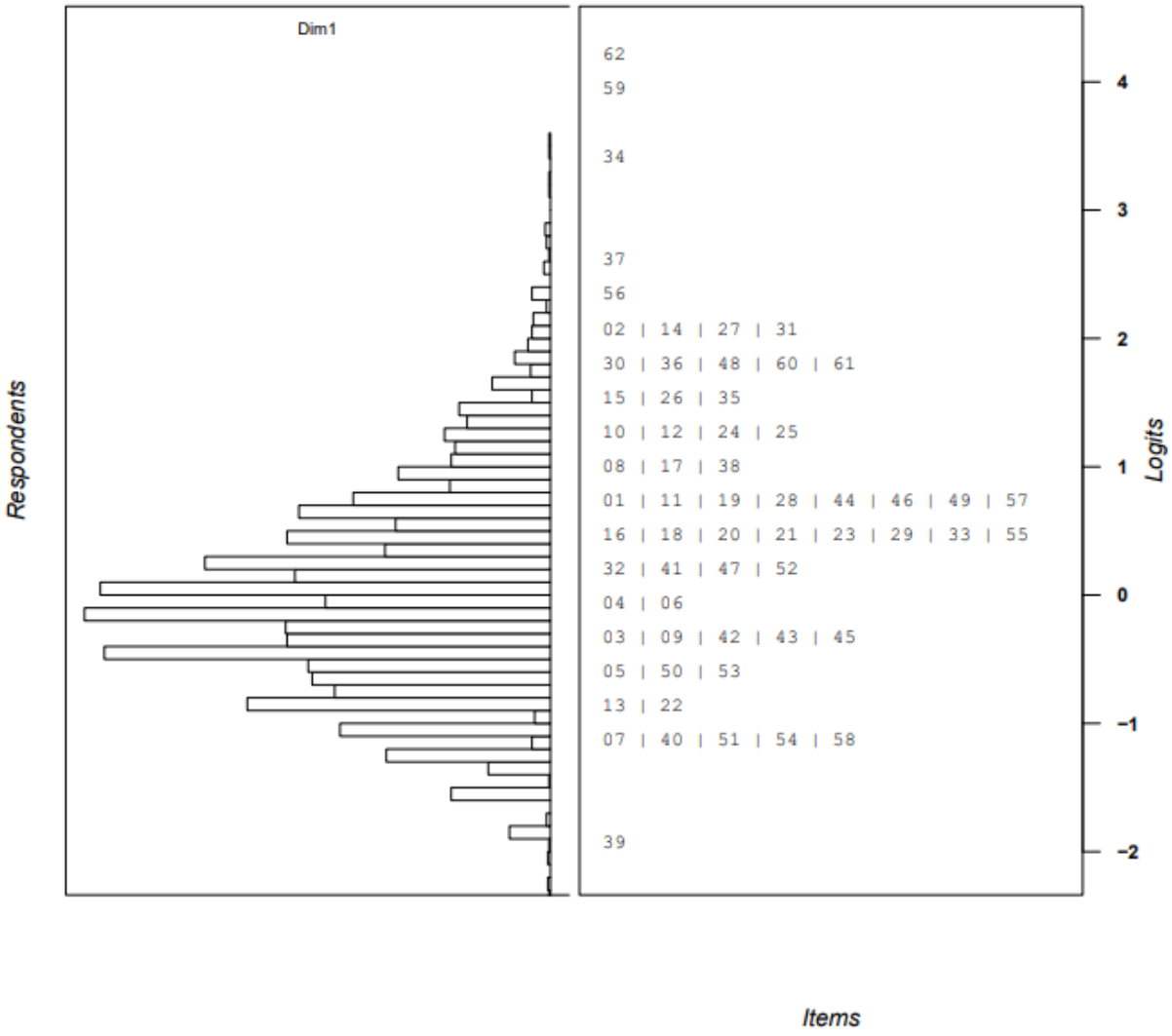
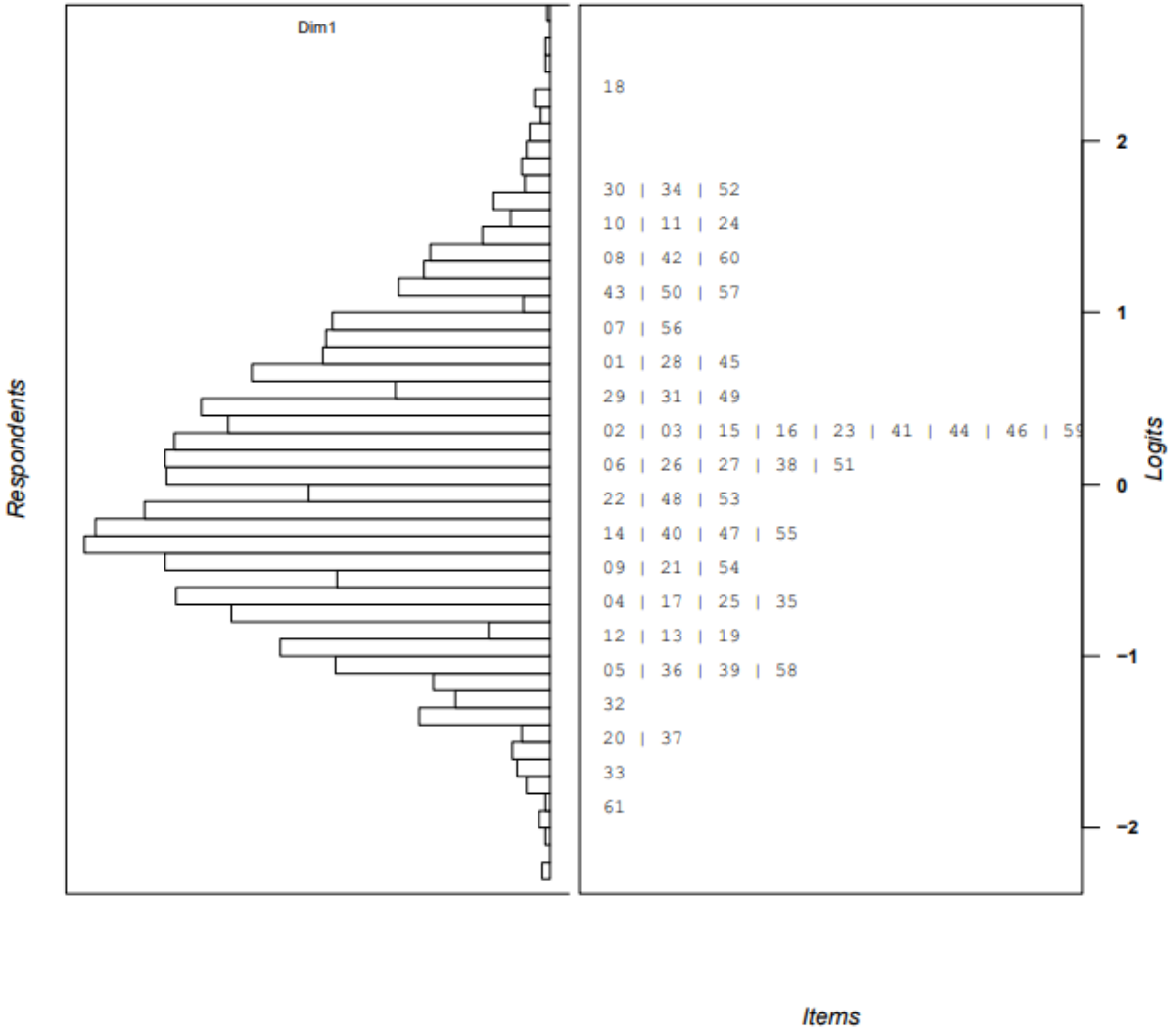


Figure B7: Item-person map for grade VI Scientific Literacy in 2024



Data analysis and reporting for NEA 2024

Sample weighting

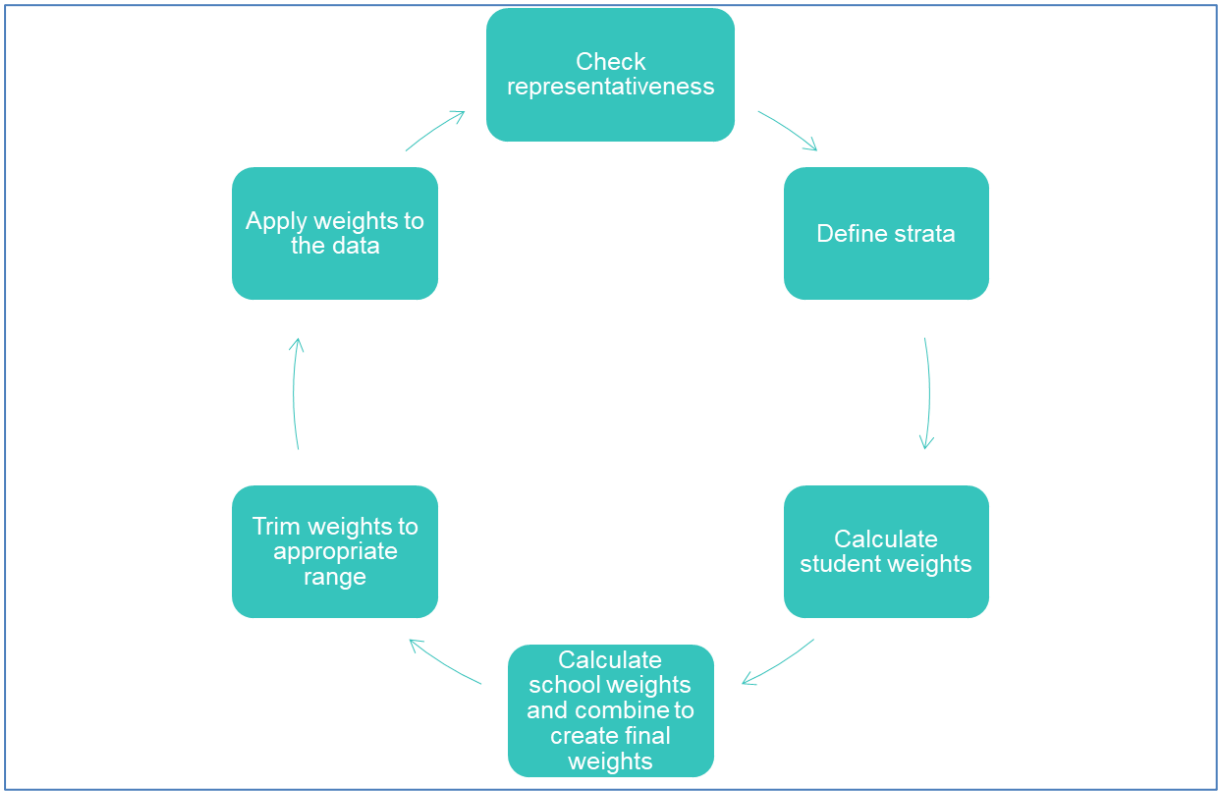
Weights were applied to the data from the 2024 NEA to ensure that the national estimates given in reporting were based upon a sample of students that reflected the national population – that is, that they were representative. The approach to weighting takes full advantage of the fact that data on the characteristics of every individual student is available from Education Management Information System (EMIS) data both nationally and for those students participating in the NEA.

Figure B8 provides a high-level overview of the approach that was taken to weighting. The process begins by using EMIS data to compare the characteristics of students participating in the NEA to the characteristics of students in the population as a whole. At this stage, any characteristics against which the participating sample looked unrepresentative were

identified. On this basis, a fresh 'strata' variable was created. This is not to be confused with the strata defined during sampling, but rather represents a new variable capturing the combination of characteristics against which the (unweighted) sample may be unrepresentative.

Using the newly defined strata variable, weights were calculated at student and school level respectively (further details below), and then trimmed to ensure no individual student was given too much weight. After this, the weights were applied to the NEA data. Finally, the representativeness of the, now weighted, sample was rechecked. If any new issues were identified at this point, the strata variable could be redefined to address this and the cycle repeated.

Figure B8: High-level overview of approach to weighting



The sample of students participating in the NEA was checked for representativeness against the following variables:

- Gender
- Location (urban, rural)
- Children with disabilities (CWD) status
- Accommodation type (boarder, day scholar)
- School management (public, private)
- School level (higher secondary, lower secondary, middle secondary, primary, special)
- District

After initial review against these characteristics, for both grade III and grade VI, the students were broken into the groups (i.e., strata) listed in Table B9 for the purposes of weighting.

Table B9: Grouping of students (strata) used to calculate weights

Strata (group used to calculate weights)	Definition
1	All students in private schools
2	All students in public schools in small regions (Haa, Gasa, Gelephu Thromde, Samdrup Jongkhar Thromde)
3	All students in public urban primary schools in larger regions
4	All students in public rural primary schools in larger regions
5	All students in public urban non-primary schools in larger regions
6	All students in public rural non-primary schools in larger regions

Having defined the strata, the formulae used to create weights were based upon the following three principles:

1. The sum of the *student weights* within a school should equal the number of students in that school.
2. The sum of the *final weights* within a strata should equal the total number of students in that strata in the population.
3. However, no individual student should be given too much weight. This is addressed by *trimming* the weights. This may lead to minor deviations from the first two principles.

These principles are exactly the same as those underlying the formulae used for weighting in the 2021 NEA. However, since all students were matched to population data from the EMIS, the formulae required to achieve these goals could be simplified. Specifically, we calculate weights in two stages.

The first stage calculated the initial weight to assign to each student to meet the first principle of weighting. This was done using the following formula where STW_{ij} represents the initial weight to assign to students in the ith school within the jth strata:

$$STW_{ij} = \frac{Total\ enrollment\ within\ school\ i\ within\ strata\ j}{Total\ participants\ within\ school\ i\ within\ strata\ j}$$

The second stage identified an additional multiplier for each participating school in the NEA. The formula for this stage is given below where SCW_j is the additional weight multiplier for all schools in strata j:

$$SCW_j = \frac{Total\ population\ within\ strata\ j}{Total\ population\ of\ participating\ schools\ within\ strata\ j}$$

The final weights (FW_{ij}) for students in the ith school in the jth strata are calculated by multiplying the above two quantities together as follows:

$$FW_{ij} = SCW_j * STW_{ij}$$

It is important that we avoid giving any individual student too much weight in analysis. This would lead to national results being too dependent on a single student, which would result in low precision. To avoid this issue, we follow advice from PISA technical reports (e.g., OECD, 2012). Specifically, first, we calculate the median student final weight (FW_{ij}) in each strata. Then, we identify any students with final weights greater than 4 times the size of this median weight. Any such weights are truncated to be no larger than 4 times the median value.

Having calculated and trimmed the weights, the representativeness of the weighted sample was checked against the original set of characteristics and found to be acceptable.

Note that, for the 2021 NEA data, weights calculated in the original analysis were reused. The only change is that, in the original analysis, separate (but nearly identical) weights were calculated for each student relating to participation in each cognitive domain. The (mean) average of the weights from the different cognitive domains they participated in was taken to ensure that we had a single weight for each student to use in analysis.

Standard errors

The standard error of an estimate gives an idea of its precision. Roughly speaking, we expect the true (population) value of a quantity to be within a range defined by the sample estimate, plus or minus twice the standard error 95% of the time.

Traditional statistical estimates of standard errors rely upon the assumption of simple random sampling. This is not applicable to the NEA as students are sampled in a two-stage procedure, where schools are sampled first and then students are selected from within each of those schools. Furthermore, we expect students in the same school to display greater similarity than those in different schools. Thus, standard errors need to be adjusted to account for this. Standard errors also need to be adjusted for the fact that different students are given different amounts of weight in calculations (see the previous section).

To address the above issues, all standard errors (and also tests of statistical significance) were calculated using the R package 'survey' (Lumley, 2004) within the statistical software R (R Core Team, 2024). In this package, all standard errors, in all analyses (including regression analyses) are based upon Taylor series linearisation. According to Lumley (2004), the resulting standard errors are approximately unbiased, but may be quite unstable in

small samples. In the context of the 2024 NEA, this last point is particularly relevant to the analysis of results from individual districts. That is, whilst standard errors have been produced for estimates at district level, these should be seen as being indicative only and treated with some caution. Note that, for the smallest districts, the same caution would also apply with other approaches to the estimation of standard errors, such as the use of replicate weights (BCSEA, 2023b).

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