LEARNING LOSS REPORT

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Executive Summary

This report synthesizes the findings of diagnostic assessments conducted among Lebanese students in Grades 3 and 6 across various subjects, Arabic, English and French languages, mathematics, and science. The primary aim of these assessments was to evaluate the extent of learning disruptions experienced during the school closures because of the COVID 19 pandemic. The study encompassed 153 schools, comprising public, private, and Palestinian refugee schools affiliated with UNRWA, located throughout all districts of Lebanon. The selection of the sample prioritized inclusivity, ensuring representation from coastal, mountainous, urban, and rural areas.

With a sample size of 2,841 third and sixth-grade learners from these 153 schools, the sample accounts for approximately 1% of the total primary school population in Lebanon. Stratified random sampling methodology was employed to ensure fairness and accuracy, considering three key factors: governorates, academic sectors (public or private), and primary language of instruction. The diagnostic tests developed were based on frameworks aligned with the Lebanese curriculum and adhered to governmental decrees. Rigorous measures were implemented to ensure the reliability and fairness of the diagnostic assessments throughout the design, implementation, and grading processes. Descriptive and inferential statistics were utilized for analyzing the results.

Key Findings and Recommendations:

1. ***Arabic Language Diagnostic Tests (BE3 and BE6) Analysis:***

A. Key Findings:

- **Writing Challenges:** Persistently lower scores in writing across all BE3 and BE6 in the three sectors (i.e. public, private, and UNRWA affiliated schools), notably in English-medium schools.
- **High Failure Rates:** Substantial failure rates in writing, with English-medium schools experiencing the highest failure rate.
- **Language-Specific Gaps:** English-medium schools exhibited the highest failure rate in Arabic language activities.
- Written expression poses the most significant challenge, requiring interventions that address clarity, organization, and grammatical accuracy.
- Public schools underperformed when compared to private schools, due to limited resources and lack of teacher training.

B. Recommendations:

- **Prioritize writing interventions:** Implement targeted strategies, including intensive writing instruction and feedback mechanisms.
- **Tailor interventions:** Design interventions considering language-specific factors.
- **Research for insights:** Conduct further research to identify effective strategies for improving writing performance.
- **Collaboration:** Facilitate communication among stakeholders to share best practices.

2. ***Mathematics Learning Loss Diagnostic Tests (BE 3 & BE 6) Analysis:***

A. Key Findings:

- **BE 3:** Moderate learning loss, particularly in Geometry and Measurement, with significant variations across governorates.
- **BE 6:** Overall significant learning loss, with learners performing better in Arithmetic/Algebra than in Geometry/Measurement.

- **Performance disparities:** Strengths in Arithmetic/Algebra, weaknesses in Geometry/Measurement in both BEs. Geometry and Measurement underperformance indicates a lack of proper teaching and guidance, potentially due to insufficient time allocation or inadequate instructional methods.
- Public schools exhibit lower performance compared to private schools, highlighting the need for targeted interventions within the public sector.

B. Recommendations

- **Focus on Geometry and Measurement:** Prioritize interventions in these areas across BEs and governorates.
- **Tailor Interventions:** Customize interventions based on specific governorate and sector needs.
- **Address Root Causes:** Tackle issues such as teacher training, teaching methods, and socioeconomic factors.
- **Ensure Teacher Presence:** Monitor struggling domains and ensure teacher supervision.
- **Regular Progress Monitoring:** Periodically monitor progress and adjust interventions.

3. English Language Learning Loss Diagnostic Test Results:

A. Key Findings:

- **BE 3:** High average scores, except in writing, with variations in performance by governorate and sector.
- **BE 6:** Reading comprehension slightly below average, written expression significantly below average.
- **Governorate and Sector Variations:** Significant variations in performance by governorate and sector.
- Students struggle with inferential thinking in descriptive texts, necessitating enhanced reading comprehension strategies that emphasize deeper analysis.
- Governorate-level variations and public-private sector disparities call for tailored interventions and resource allocation adjustments.

B. Recommendations:

- **Improve Writing Skills:** Focus on enhancing writing skills for all BEs in all sectors.
- **Diversify Assessment Methods:** Use different question types for assessing various skills.
- **Targeted Interventions:** Provide interventions tailored to struggling students and governorates.
- **Teacher Training:** Train teachers on effective writing instruction.
- **Progress Monitoring:** Regularly monitor progress and adjust interventions as needed.

4. French Language Learning Loss Analysis:

A. Key Findings:

- **BE- 3 Performance:** Disparities between public and private sectors and variations across governorates.
- **Phonological Awareness:** Varied results, weaknesses in public schools in some areas such as Beirut.
- **Writing Skills:** Challenges in all sectors, particularly in public schools.
- **BE 6 Performance:** Persistent disparities among sectors.
- Public-private sector disparity persists, with private schools demonstrating higher performance.
- Learners struggle with critical thinking skills, indicating a need for pedagogical reform.
- Governorate-level variations necessitate tailored interventions to address regional disparities.

B. Implications:

- **Public vs. Private Education:** Private schools consistently outperform public schools in French language proficiency.
- **Governorate-Level Analysis:** Beirut and Baalbek-Hermel show higher scores, indicating regional disparities.
- **Text Comprehension vs. Writing Skills:** Emphasize the need for curricular focus on written expression.
- **Educational Interventions:** Recommend targeted reforms to address disparities in French language learning.

5. Science Learning Loss Diagnostic Test Results (BE 3 & 6) Analysis:

A. Key Findings:

- **BE-3 Performance:** Varying scores across themes, notable disparities among governorates and sectors.
- **BE-6 Performance:** Similar patterns with slightly better proficiency in scientific thinking.
- **Critical Thinking Analysis:** Lower critical thinking skills attributed to rote learning and teaching practices.
- **Both BE3 and BE6 grades results:** disparities between information recall and mastery of acquired knowledge.
- Learners exhibit varying performance across different science themes, with the 'Plants' theme demonstrating the highest average score.
- Scientific thinking skills require significant improvement compared to knowledge acquisition.
- Public schools underperform compared to private schools, suggesting resource and potentially instructional approach disparities.
- Governorate-level variations highlight the need for targeted interventions tailored to specific regional contexts.

This comprehensive analysis of educational diagnostic tests in Arabic, Mathematics, English, French, and Science reveals critical challenges faced by students in Lebanon following the pandemic.

Key Findings Across Subjects:

- **Uneven Skill Development:** Students exhibit strengths and weaknesses across different skills within each subject. While some areas like basic reading comprehension show relative strength, others like written expression and critical thinking skills require significant improvement.
- **Written Expression Deficiency:** A widespread decline in written expression proficiency is observed across all subjects and educational sectors. This highlights the need for targeted interventions focused on clear communication, organization, vocabulary development, and error correction.
- **Public-Private Disparity:** Private schools consistently outperformed public schools in most subjects, suggesting resource disparities and potential differences in teaching methodologies.
- **Governorate-Level Variations:** Significant discrepancies exist in performance across Lebanese governorates, necessitating tailored interventions and resource allocation considerations for each region.

This comprehensive analysis necessitates a shift from rote memorization towards fostering critical thinking skills across subjects. Recognizing the influence of governorate-specific factors and environmental influences on student achievement, the analysis emphasizes targeted interventions to address disparities between the public and private schools. By implementing tailored strategies at the regional level and closely monitoring progress, stakeholders can work towards creating a more equitable and effective educational system that empowers all Lebanese students to thrive.

Introduction: Global Challenge and Complexities

The educational landscape faces a concerning trend, i.e., a cumulative learning loss, whereby knowledge retention diminishes progressively, threatening youth development and national progress. Research shows a tangible decline in academic attainment due to prolonged closures, particularly in core subjects like math and languages (mainly reading and writing) (Hanushek et al., 2021; UNESCO, 2022).

This necessitates immediate action and commitment to consistent, effective learning for all learners. However, factors like absenteeism and unaddressed learning gaps often create insufficient learning experiences, leading to cumulative knowledge loss and jeopardizing individual potential and national economic prosperity.

The multifaceted nature of learning loss, its repercussions, and the need to address disparities highlight the complexity of such challenge. Understanding its implications and its measurement and developing equitable and effective interventions have become paramount (Aldosemani, & Al Khateeb, 2022).

Context of the study: Understanding Learning Loss in Lebanon: A Call for Action

Driven by the right to education for all and the UN's Sustainable Development Goal of universal access by 2030, the Center for Educational Research and Development (CERD) in Lebanon conducted a diagnostic study on learning loss. This study responds to the growing concerns about the impact of significant educational disruptions over the past nine years.

The case of Lebanon requires a subtle yet balanced approach due to the complex and various factors involved, some of which are the following: prolonged school closures, economic instability, social unrest, and pre-existing challenges like underfunding, overcrowded classrooms, and inconsistent teaching quality.

Measuring accurately learning loss across demographics, subjects, and regions demands comprehensive, large-scale assessments that examine these specific dimensions. The scope of disruptions is vast, encompassing reduced school weeks, disparities across school types, cancelled certificates, strikes, the October 2019 uprising in Lebanon, and the unprepared shift to remote/hybrid learning during the COVID-19 pandemic.

Addressing this issue necessitates a thorough understanding of these factors and their combined impact. Due to the diverse opinions within the education sector, the CERD study aimed to provide a comprehensive evidence-based overview, informing future interventions and progress towards universal education.

To address these anxieties and gain a comprehensive understanding of the impact of the pandemic on educational attainment, CERD conducted this comprehensive research project. This multi-faceted study employed a three-pronged approach to highlight the complex relationship between the pandemic and educational outcomes.

A critical component of the research involves the utilization of diagnostic testing tools specifically developed by CERD. These instruments were deployed to assess and quantify the extent of learning regression students may have experienced due to educational disruptions. This data was instrumental in revealing the exact scope of learning loss across diverse student populations.

Furthermore, the study looked into the effectiveness of various school measures implemented to mitigate the spread of COVID-19 within educational institutions. By evaluating these measures, the research seeks to underline the potential trade-offs between public health considerations and educational continuity.

The anticipated outcomes of this multifaceted investigation are twofold. First, the study is expected to yield invaluable data on the magnitude and distribution of learning loss. This information is critical for informing the development of targeted interventions and support mechanisms to help students regain lost ground. Second, the evaluation of school safety measures provides crucial insights for future decision-making regarding educational practices and policies in the face of similar disruptions, allowing for a more balanced approach that prioritizes both public health and educational progress.

Objectives of the study

This study investigated the potential complications of educational inequalities in Lebanon due to the ongoing COVID-19 pandemic. Aligned with Lebanon's constitutional commitment to universal education and global efforts towards Sustainable Development Goal 4 (quality education), the research aimed to provide disaggregated evidence focused on the most vulnerable student groups.

Such evidence is deemed crucial to inform effective policy responses by government authorities. This crisis presents a pivotal opportunity for educational leaders to critically examine pre-existing learning deficits and explore innovative, evidence-based approaches to ensure quality education for a vast global population.

A. Key Objectives:

- **Quantifying the impact of COVID-19 on School Dropout Rates:** This objective seeks to measure the quantitative impact of COVID-19 lockdowns on dropout rates, providing a clearer view of the disruptive force of the pandemic and identifying particularly vulnerable student populations.
- **Measuring Learning Loss with CERD Assessment Tools:** The study aims to quantify learning losses incurred by students due to the pandemic disruptions by utilizing assessment tools developed by CERD. This should provide crucial insights into the impact on learning outcomes.
- **Evaluating School Measures for COVID-19 Prevention:** This objective assessed the adequacy of school facilities and the implemented measures followed to prevent the spread of COVID-19. This sheds light on the preparedness of educational institutions in mitigating health risks during a pandemic.

By achieving these objectives, the study aims to provide empirical data to support evidence-based policymaking. This data will be used to design interventions and strategies that ensure continued access to quality education, particularly targeting the most vulnerable student groups disproportionately affected by the pandemic.

Chapter I- An overview of learning losses: Lessons from the literature

1.1 What is learning loss?

Learning loss, learning gap, and learning poverty are terms used frequently in educational discourse, yet they have distinct meanings. Learning loss can be defined as “any specific or general loss of knowledge and skills or reversals in academic progress, most commonly due to extended gaps or discontinuities in a student’s education” (Huong et al., 2020, p. sp). This decrease can occur because of various factors, such as school closures, absenteeism, or inadequate instruction.

Learning gaps, as described by the World Bank in 2023 (World Bank, 2023), are persistent differences in learning outcomes between different groups of students, often associated with socioeconomic background, ethnicity, or other factors. These gaps can widen over time if interventions are not implemented to address them.

Learning poverty, a concept introduced by the World Bank in 2019 (World Bank, 2019), is defined as the inability to read and comprehend a simple text by age 10. This indicator is at the end of the learning spectrum; it highlights the global challenge of ensuring foundational literacy and numeracy skills for all children.

Although these concepts are interrelated, they still represent distinct phenomena. Learning loss refers to a downward movement while learning gaps and learning poverty represent the state of children coming from disadvantaged areas.

1.2. The Global Challenge of Learning Loss: A Review of Research and Policy Responses

The COVID-19 pandemic and other disruptions to formal schooling have triggered widespread concerns regarding learning loss and widening educational gaps (Cavanaugh-Burger & Brichsht, 2020; Soudien et al., 2022). Studies (see for example, Soudien et al., 2022) highlight the negative effects of prolonged school closures, with anticipated losses projected to be most pronounced in mathematics and disproportionately impacting disadvantaged learners. This initial wave of learning loss, experienced during the sudden shift to remote learning in spring 2020, stemmed from the disruption of traditional in-person education, leading to gaps in academic progress.

In response, governments worldwide have been actively seeking solutions to mitigate learning loss and expedite learning recovery (Dworkin & Lewis, 2021). Proposed strategies encompass a range of interventions, including extending the school year, providing high-quality tutoring, offering personalized learning opportunities, and enhancing teacher training and support (Kim & White, 2011). Research suggests that effective approaches prioritize individualized learning plans and self-paced instruction over simply repeating grades (OECD, 2023). Additionally, Dworkin and Lewis (2021) recommend intensive reading programs and reduced class sizes, while Tejada et al. (2022) emphasize the importance of regular assessments and data analysis for monitoring progress.

The crucial role of parental engagement in learning recovery is underscored by Singh et al. (2022), whose research indicates the effectiveness of remedial programs implemented within the first few months of school reopening. On a broader scale, global initiatives, such as the World Bank's RAPID framework and UNESCO's campaigns, aim to address learning loss comprehensively. Successful examples like Jordan's "Darsak" platform and Palestine's focus on student well-being demonstrate the effectiveness of technology and addressing learning holistically (UNESCO & TTF. 2022; Anderson et al., 2021; Merrill, 2021).

However, there are concerns regarding a potential "second wave" of learning loss, even after schools have reopened (Council of State Governments, 2023; Fordham Institute, 2023). Factors such as decreased student agency, teacher and staff shortages, and disruptions to school routines are contributing to these ongoing challenges. Studies predicted that standardized test scores, like those from the NAEP in 2024, may reflect this continued learning loss, highlighting the need for targeted interventions to bridge these widening gaps.

Looking ahead, ongoing research and policy innovation will be critical for ensuring equitable learning recovery and fostering resilient educational systems. This multifaceted challenge demands a comprehensive approach that addresses both the immediate effects of school closures and the longer-term disruptions impacting student learning.

1.3. Lebanese Government measures to address learning disruptions

The COVID-19 pandemic significantly disrupted education in Lebanon, prompting a collaborative effort between the Ministry of Education and Higher Education (MEHE) and CERD. Recognizing potential learning gaps, CERD developed screening tools and partnered with stakeholders to design targeted interventions. Despite these efforts, shortened school days and ongoing challenges raised concerns about the long-term impact, with estimates suggesting a potential loss of over five academic years. A key initiative upon returning to in-person learning in October 2021 was the ‘Recovery Program’. This effort assessed reading levels, gathered data on student needs, and informed the 2021-

2022 back-to-school plan. The Recovery Program Identified a high number of struggling readers which led to curriculum revisions, multi-year remediation, and support by various stakeholders (e.g. school principals, teachers, etc.). Targeted educational activities focused on adaptation, review, and intervention were implemented within the first four weeks. Additionally, an intensive program for struggling learners and Teaching at the Right Level (TARL) activities offered tailored support. Initiatives like trial lessons on TV, the "Mawaridy" platform, and the national e-book boosted remote learning with interactive and accessible resources. These efforts, aligned with international standards, aimed to establish a solid foundation for learning despite the challenges faced.

The Lebanese Government initiatives addressing the educational challenges brought forth by the COVID-19 pandemic are categorized into key areas:

A. Curriculum Adaptations:

- **Prioritization of educational objectives**: Objectives underwent categorization into prerequisites or core classifications through criteria established by the educational authorities in Lebanon.
- **Reduced Curriculum:** The academic year was shortened; thus, the number of weeks were reduced for the academic years 2020-2021 (13 weeks), 2021-2022 (18 weeks), and 2022-2023 (24 weeks, with an additional 4 weeks allocated for assessment).
- **Maintenance of Exam Specifications**: Official exam specifications and suspended lessons from 2018, based on those issued in 2016 for cycle III of Basic Education and the Secondary Level, were maintained.

B. Official Exams Adaptations:

The Official Exams were adapted as such:

- **Revisiting Timing of Exams**: Reduced timings for different subject matters and the inclusion of both mandatory and elective subjects.
- **Domains and Competencies**: Domains and competencies were retained despite adaptations.
- **Exam Adjustments:** BE 9 exams were cancelled in 2021 but were reinstated in 2022.

C. Remediation and Response Plan:

- **Digital Learning Resources:** Educational videos and interactive lessons aligned with the curriculum were broadcasted on the national TV and the CERD platform “Mawaridy.” Additional curriculum-aligned resources were compiled and validated.
- **Exam Preparation:** Lessons for official exams were prioritized based on sample school coverage, and e-books were provided for students who did not have paper textbooks.
- **Recovery Program:** A recovery program in collaboration with Qitabi offered numeracy, literacy, and social-emotional learning support throughout the year for various student groups.
- **Summer School:** Students of all BEs had the opportunity to attend summer school for additional learning.

Chapter II- Mitigating learning losses in the Lebanese context: Methodology and hypotheses

In the preceding chapter, we presented an overview of the many challenges faced by the education system, ranging from the impacts of the global pandemic to strikes and closures. Building upon this foundational understanding, the present chapter shifts its focus toward drawing hypotheses regarding the potential consequences of school closures on learning outcomes. Our objective is to explore and identify key indicators anticipated to unveil the extent of learning losses incurred during this disruptive period. By delineating these indicators, we aim to lay the groundwork for a more exact definition of measurement tools, ultimately enhancing our capacity to assess and address the impact of school closures on education.

2.1. International frameworks for assessing learning loss

Learning loss goes beyond the mere disruption of teaching and learning, often persisting beyond the period of missed instructional days. Additionally, there may be a non-linear relationship between the frequency of absences and the extent of learning decline. Also, the socioeconomic backgrounds of students have considerable influence over variables such as internet accessibility, the presence of parents with educational backgrounds facilitating home learning, and the likelihood of schools providing support for remote education.

Several frameworks were proposed to measure and interpret diagnostic assessments about learning loss:

- The Learning-Adjusted Years of Schooling (LAYS) framework was used to measure the impact of learning loss due to the COVID-19 pandemic. LAYS is a measure that combines access and quality (learning) into a single measure, allowing for a more comprehensive view of education systems. The Brookings Institution predicted a global loss of 0.6 LAYS due to the pandemic, causing the global average to fall from 7.9 LAYS to 7.3 LAYS. This signifies that learners are not only receiving less schooling but also learning less per year of schooling.

- The World Bank's RAPID Framework was also introduced as a guide to tackle learning losses and build a better future for children. It is based on five evidence-based policy actions: (1) Reach all children, (2) assess learning; (3) prioritize the fundamentals, (4) increase the efficiency of instruction, and (5) develop psychosocial health and well-being. These measures were designed to address the learning losses caused by the pandemic and to improve the quality of education while moving forward.

- The I-Ready Diagnostic Assessment framework was used to measure 'summer learning loss' in reading and mathematics for elementary and middle school students. The study found evidence of a significant amount of summer learning loss for the I-Ready student population in mathematics for BEs K through 7.

- The Integrative Framework of Diagnosis was proposed to connect Cognitive Diagnostic Assessment (CDA) to feedback and remediation. This framework was applied in an English as a language of instruction context, presenting procedures of integrating diagnostic assessment to English language reading curriculum through four phases, mainly planning, framing, implementing, and reflecting.

- The Cognitive Diagnostic Assessment for Learning framework was proposed by the *Frontiers in Psychology*. This framework objectively quantifies students' current learning status and provides diagnostic feedback.

- The National Assessment of Educational Progress (NAEP) is an ongoing, congressionally mandated survey designed to measure what students know and can do in various subjects. The

NAEP is administered by the National Center for Education Statistics (NCES) and includes several assessment design phases and stages, such as developing frameworks, selecting samples, creating and scoring items, and reporting results. The NAEP uses evidence-centered design (ECD) to align the assessment content and format with the intended learning outcomes and cognitive processes. The NAEP also incorporates new item types, enhanced survey questionnaires, and index scores to capture a more comprehensive picture of student achievement and contextual factors.

2.2. National Learning Loss Assessment Framework

2.2.1. Contextualized Framework for Assessing Learning Loss in Lebanon

This research adopts a meticulous approach to indicator selection, i.e., drawing upon existing literature to move beyond simply identifying learning losses. We aim to construct a locally informed framework, pinpointing the key determinants and potential long-term consequences of these losses. By synthesizing scholarly insights, we posit that the chosen indicators will affect positively the quality of education in the Lebanese context by offering a clear and balanced perspective across a spectrum of assessed skills.

Hypotheses on the Determinants and Long-Term Impacts of Learning Loss

We hypothesize that learning loss in Lebanon will not be uniformly distributed but will accumulate rapidly and vary across learners, educational stages, and schools. We posit that learning loss results not only from school closures but also from the natural process of forgetting, highlighting the need for time to solidify understanding. Furthermore, we anticipate that early primary school students and marginalized groups (such as learners in remote areas) will be disproportionately affected, showing more prominent signs of learning loss.

Examining Key Indicators

Our framework incorporates the following key indicators to investigate these hypotheses:

- **Low Achievement in Core Knowledge and Skills:** Building upon existing global studies that indicate a decline in foundational literacy skills, we hypothesize that Lebanese learners will demonstrate lower achievement in skills such as reading comprehension. The extended school closures and disparities in remote learning are expected to increase this trend, potentially exceeding the global average increase of one-third in low to middle income countries.
- **Decreased Motivation for Learning:** We posit that reduced motivation for learning will manifest in learners displaying lower levels of engagement, with a decline in interest in pursuing higher education, neglecting learning materials and assignments, exhibiting frequent absenteeism, and demonstrating poor concentration during lessons.
- **Increased Learning Challenges and Academic Delay:** We hypothesize that the COVID-19 pandemic and prolonged remote learning have significantly impacted learning, particularly for learners who were already facing challenges. Building upon the existing research highlighting the low learning efficiency in Lebanon, we expect to see a widening of the academic achievement gap, with students potentially falling further behind their expected academic levels.
- **Increased School Dropout and Non-Return Rates:** We hypothesize that school dropout rates will rise due to the disruptions of the pandemic. This ‘educational leakage’ refers to students leaving school prematurely, often due to a combination of internal and external factors. Given Lebanon's pre-existing dropout rate of 41% for students enrolled in the first grade during the 2010-2011 academic year, we anticipate a significant increase in this metric without effective interventions. This situation, if left unchecked, could have severe long-term consequences for Lebanon's education system and national economy.

By employing this multifaceted framework, our research aims to provide a clear and balanced understanding of the determinants and long-term impacts of learning loss in Lebanon. This will inform the development of targeted interventions and policies to mitigate learning loss and ensure equitable educational recovery for all Lebanese students.

2.2.2. Design and Development

The existing curriculum is strategically designed to enhance students' mastery of subject-specific methodologies, communication skills, and efficient knowledge transfer, utilizing diverse pedagogical strategies. Aligned with these objectives, the assessment framework encompasses the following key elements:

- **Conceptual Objectives:** Clearly defining essential knowledge and understanding expected at each BE level.
- **Technical Methodologies:** Identifying scientific skills and cognitive processes intended for development.
- **Evaluation Domains:** Explicitly specifying areas where student progress will be assessed, covering various domains.

However, significant reductions in curriculum content, especially since 2001 and increased disruptions caused by COVID-19, have adversely affected student learning outcomes. This learning loss can be revealed in both the content domain, focusing on knowledge acquisition, and the cognitive domain, emphasizing application and reasoning, particularly in subjects like science.

To effectively address learning loss, the proposed frameworks for each subject introduce meticulously structured screening tools, including:

- **Intended Curriculum:** A comprehensive inventory covering themes, topics, and competencies outlined in official curriculum documents.
- **Reduced Curriculum:** Adjustments and reductions made post-2000, following legislation and circulars, are duly considered.

This study adopts a comprehensive approach to assess learning loss in Lebanese students by employing a robust framework emphasizing validity, reliability, standardization, and item analysis. A well-defined test blueprint ensuring the representation of diverse content areas and specifying both content domains and cognitive levels for assessment is at its core. This emphasis on cognitive engagement facilitates a deeper understanding of student proficiency through constructive response items (CRIs). Inspired by international standards, the scoring system employs a 5-point Likert scale with clear categories for wrong, partially correct, and fully correct answers, eliminating penalties that are outside the academic performance. This ensures accurate and meaningful results, serving as the foundation for informing targeted interventions and supporting student learning amidst the challenges of learning loss.

2.2.3. Assessment Framework and Design: An Illustrative Example

The science assessment framework, inspired by Lebanese ministerial decisions (631/m/2016, modified by 142/m/2017) and aligned with curriculum emphasis and learning time allocation, ensures a diverse and representative evaluation. The diagnostic test incorporates both multiple-choice and constructive response items (CRIs) with considerations for curricular representation, difficulty, and learning time. The weighting of competency domains, in accordance with decision 266/m/2000, guides the distribution of items across domains, focusing on 'Mastering Knowledge', 'Mastering Scientific Reasoning', and 'Mastering Communication.' The assessment covers crucial domains, including knowledge acquisition, scientific reasoning, and communication techniques, adhering to OECD cognitive demand levels—Low, Moderate, and High. Each item is labeled with question type, cognitive domain, theme, and content domain, facilitating clear identification and comprehensive evaluation.

The mathematics assessment employs disciplinary content domains and a domain focused on problem-solving and communication skills, ensuring thorough evaluation of both content knowledge and skill development. Similarly, the French language assessment framework details proficiency evaluation at various levels, assessing key skills such as phonological awareness, reading comprehension, and written production, with clear criteria aligned with curriculum objectives to ensure consistent evaluation across skills.

	Plants	Animals	Man	Matter & Energy	Earth & universe	Type of Questions
Domain A 12 items	Ex1.1	Ex1.2 Ex1.3	Ex1.4 Ex1.5	Ex 1.6 Ex 1.7 Ex 1.8 Ex 7		9 MCQ
	Ex 2		Ex 10.2 Ex 12.1			3 C
Domain B 11 items	Ex 3 Ex 5.1	Ex 4 Ex 8	Ex 12.2	Ex 11	Ex 13.1 Ex 13.2	8 MCQ
	Ex 5.2		Ex 12.3		Ex 13.3	3 C
Domain D 3 items		Ex 6	Ex 9			2 MCQ
			Ex 10.1			1 C
26 items	**5**	**5**	**8**	**5**	**3**	

Table 1: Science Diagnostic Test

The following table gives the details of the content of the diagnostic tests for each subject:

Subject	BE Level	Diagnostic Test Components
Arabic	Third BE	Phonological awareness competency; Reading comprehension competency; Reading and analysis competency; Written expression competency
	Sixth BE	Reading comprehension competency; Reading analysis competency' Written expression competency
French	Third BE	Phonological awareness competency; Reading comprehension competency; Reading and analysis competency; Written expression competency
	Sixth BE	Reading comprehension competency; Reading analysis competency; Written expression competency

Subject	BE Level	Diagnostic Test Components
English	Third BE	Phonological awareness competency; Reading comprehension competency; Reading and analysis competency; Written expression competency
	Sixth BE	Reading comprehension competency; Reading analysis competency; Written expression competency
Mathematics	Third BE	Arithmetic and algebra competencies; Geometry competencies; Measurement competencies
	Sixth BE	Arithmetic and algebra competencies; Geometry competencies; Measurement competencies
Science	Third BE	Linking knowledge to new situation competency; Applying knowledge in similar situations competency; Mastering communication techniques competency, Practicing scientific thinking competency
	Sixth BE	Linking knowledge to new situations competency; Applying knowledge in similar situations competency; Mastering communication techniques competency; Practicing scientific thinking competency

Table 2: Diagnostic tests contents

2.2.4. Scoring system

Eliminating Bias and Ensuring Accuracy

The scoring system for the diagnostic tests prioritizes objective assessment of academic achievement, avoiding factors that may distort genuine performance. Practices like penalizing correct answers due to omissions or incorporating non-academic considerations are excluded. This aligns with international standards and emphasizes clear, unbiased evaluation.

5-Point Likert Scale with Specific Criteria

Inspired by international exams, the diagnostic tests employ a 5-point Likert scale. It categorizes responses as completely wrong, partially correct, fully correct, or unanswered. Scores are based solely on academic performance, ensuring accurate and meaningful BEs. For low cognitive questions, a simpler 3-point scale suffices (0, 1, 99). Moderate and high cognitive questions receive a more detailed scoring (0-4, 99) based on the degree of correctness.

Domain-Specific Assessments in Mathematics

For mathematics, evaluations align with defined domains and competencies in the evaluation guide. Each exercise explicitly targets specific dimensions like number representation, comparison, and operations. Additionally, the 'Problem-Solving and Communication' domain emphasizes critical thinking and applying mathematical concepts. Students demonstrate competencies by selecting relevant information, expressing themselves through various means, and asking questions based on data.

Evaluation in Multiple-Choice Questions

In multiple-choice questions (MCQs) and exercises, a 6-point Likert scale (0-4, 99) assesses answer correctness, appropriateness, and completeness. Codes range from varying degrees of incorrectness to full accuracy with minor errors, ensuring a rich and detailed appraisal of student performance.

- 0: Incorrect answer
- 1: Correct answer with 25% accuracy
- 2: Correct answer with 50% accuracy
- 3: Correct answer with 75% accuracy
- 4: Fully correct answer with 100% accuracy
- 99: No answer or answer irrelevant to the question.

Additionally, the correction of written expression in the three languages was based on the following criteria:

- Adherence to the requirements of the question or exercise
- Coherence in ideas, compliance with requirements, progression, and sequence
- Correct linguistic usage
- Clear presentation and legible handwriting.

Data Analysis

Subject matter experts and test developers reviewed and corrected the assessments. Following data entry and verification, collaboration among these experts ensured optimal data utilization.

2.3. Sample Selection

The diagnostic study encompassed 153 public, private, and Palestinian refugee schools affiliated with UNRWA, distributed across all Lebanese districts. The sample selection prioritized inclusivity, ensuring representation of coastal, mountainous regions, urban areas, and areas beyond the capital. CERD statistics specialists meticulously prepared the representative sample, as detailed in appendix 2.

The sample, comprising 2,841 third and sixth grades from these 153 schools, represents approximately 1% of the total primary school population across Lebanon. Stratified random sampling ensured fairness and accuracy, considering three key factors: governorates, academic sectors (public or private), and primary language of instruction. The resulting sample breakdown is as follows:

The learners of the schools were from the following Lebanese provinces.

BE 6 of basic education (see table 3).

Directorate	Bekaa	South	North	Nabatieh	Baalbeck-hermel	Beirut	Mount Lebanon suburbs	Mount Lebanon excluding suburbs	Akkar	Total
N	135	161	210	138	110	90	265	197	146	1452

Table 3: Number of BE6 learners across directorates

BE 3 of basic education (see table 4)

Directorate	Bekaa	South	North	Nabatieh	Baalbeck - hermel	Beirut	Mount Lebanon suburbs	Mount Lebanon excluding suburbs	Akkar	Total
N	136	161	200	111	106	88	244	198	142	1386

Table 4: Number of BE3 learners across directorates

Number of Schools by Governorate and District in Lebanon

Governorate	Number of Schools	Districts
North	21	Batroun (2), Koura (6), Minieh-Danniyeh (4), Zgharta (3), Tripoli (6)
Mount Lebanon	49	Chouf (7), Baabda (14), Metn (10), Aley (8), Jbeil (3), Kesrouan (7)
Bekaa	14	West Bekaa (4), Rashaya (3), Zahle (7)
South	17	Sidon (8), Tyre (8), Jezzine (1)
Beirut	9	-
Nabatieh	15	Nabatieh (6), Hasbaya (2), Marjeyoun (2), Bint Jbeil (5)
Baalbek-Hermel	12	Baalbek (9), Hermel (3)
Akkar	16	-

Table 5: Number of schools across governorates

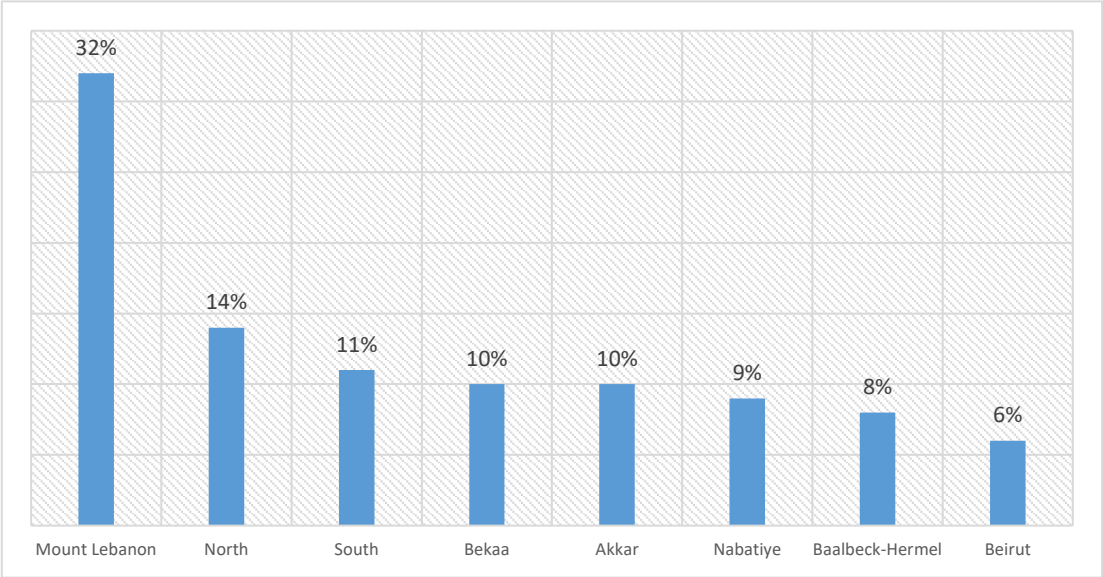


Figure 1: Distribution of Sample Schools by Governorate

See Appendix 1 for the tests that were conducted within the framework of this study.

See Appendix 2 for a list of the schools in which the diagnostic study was conducted.

2.4. Implementation and Administration

To ensure fair and reliable student assessment, this assessment prioritized enforcing standardized procedures, guaranteeing consistent test administration, and minimizing the impact of external factors.

Meticulous scoring by subject matter experts, including those who crafted the diagnostic tests, ensured alignment with objectives and performance standards. Data entry and verification followed, with collaboration between specialists and the data team at CERD to maximize data utilization. Upon securing data, the expert team analyzed results using pre-defined criteria, culminating in valuable suggestions and recommendations for informed action and improvement in assessment and learning (details in following sections).

Study Implementation:

- **Test Review and Refinement:** Specialists reviewed and finalized diagnostic tests (see Appendix).
- **Sample Preparation:** CERD Statistics Department prepared the school sample.
- **Test Distribution:** Selected schools received tests.
- **Examiner Training:** Training on test implementation principles took place from May to June 2023.
- **Test Collection and Verification:** Tests were collected from schools, verified, and received by the Educational Statistics Department.
- **Test Correction:** This took place from June 5 to June 26, 2023.
- **Data Entry:** Test results were entered into the computer system.
- **Analysis and Recommendations:** Results were analyzed, interpreted, discussed, and used to develop subject-specific and general recommendations.

The study employed various personnel:

- Sample extraction (2)
- Preparation, receipt, and delivery (5)
- Investigator training (1)
- Implementation process supervisors (2)
- Test administrators (58)
- School representatives (153)
- Test correctors (29)
- Data entry (9)
- Result analysis and recommendations (11)

Chapter III- Diagnostic Test Results: Presentation and Analysis

The presentation and analysis of the diagnostic study results follow a structured approach. First, we examine the overall manifestations of learning loss across all subjects within the Lebanese curriculum. Then, the results are disaggregated to reveal differences among the public, private, and UNRWA school sectors. Next, we present learning loss results for each subject across the various Lebanese governorates. Finally, focusing on mathematics and science specifically, we explore the relationship between student achievement and the language of instruction (either French or English). This comprehensive analysis will provide a clear and balanced understanding of learning loss patterns within the Lebanese educational system.

3.1. Study questions

This study aimed to address the following questions:

- What are the aspects of learning loss in academic subjects within the Lebanese curriculum?
- What are the differences between public and private education in the outcomes of learning loss?
- What are the variances in learning loss outcomes among Lebanese governorates in various academic subjects within the education sectors?
- What is the impact of the the language of instruction (French or English) on the teaching of mathematics and sciences?

Following this, we proceed to interpret and discuss these results.

3.2. Manifestations of Learning Loss in the Subjects of the Lebanese Curriculum

Our analysis of learning loss begins by examining its manifestations across the various subjects within the Lebanese curriculum. This involves a detailed breakdown of results by subject and Benchmark Exam (**grade**) level. We then provide a comprehensive overview of the results for both public and private education sectors. This analysis encompasses various Lebanese governorates and covers both BE3 and BE6. By examining performance across these different dimensions, we aim to achieve a multi-faceted understanding of learning loss patterns.

3.2.1. Learning Loss in Arabic Language

This comprehensive assessment involved the participation of 1,452 third graders and 1,386 sixth graders, encompassing a diverse range of educational institutions.

Arabic language general results - BE 3

Table 6 shows that the number of learners who participated in the diagnostic test in BE 3 of basic education is 1452 learners. However, a study of the detailed results of the test items showed a disparity in the attainment of skills between the fields of phonological awareness and reading and understanding on the one hand and analysis and expression on the other.

	Phonological Awareness	Reading comprehension	Reading and Analysis	Written Expression	Arabic Language
Mean	14.75	15.89	9.99	7.04	14.75
Median	15.43	17.14	10.40	6.67	15.43

St. Dev.		4.90	4.34	5.52	5.59	4.90
Minimum		0.00	0.00	0.00	0.00	0.00
Maximum		20.00	20.00	20.00	20.00	20.00
Percentiles	**25**	11.43	13.71	5.60	1.33	11.43
	50	15.43	17.14	10.40	6.67	15.43
	75	20.00	20.00	14.40	12.00	20.00

Table 6: Arabic language- BE3 competencies

The reported average of 14.75 in phonological awareness and 15.89 in reading comprehension signifies remarkable student performance in these skill areas. This achievement indicates that the targeted gains assessed in the diagnostic test have been successfully attained in a balanced manner.

The provided data regarding student performance in phonological awareness and reading comprehension shows a high success rate in both areas. Here is a breakdown of the data:

In Phonological Awareness:

- 25% of the learners scored between 0 and 11.43: This implies that 25% of the students need additional support in developing their phonological awareness skills.
- 50% of the learners scored between 0 and 15.43: This indicates that 50% of the students have a basic understanding of phonological awareness but may benefit from further reinforcement.
- 75% of the learners scored between 0 and 20: This shows that 75% of the students have achieved a good grasp of phonological awareness, indicating a strong foundation for literacy development.
- The success rate was 82.2%: This high success rate signifies that the majority of the students have achieved the expected level of proficiency in phonological awareness. The success rate for reading comprehension was 88.9%.

In Reading Comprehension:

- 25% of the learners scored between 0 and 13.71: Similar to phonological awareness, this highlights the need for additional support for a quarter of the students in reading comprehension.
- 50% of the learners scored between 0 and 17.14: This suggests that half of the students have basic reading comprehension skills but may require further development.
- 75% of the learners scored between 0 and 20: This indicates that three-quarters of the students have achieved a good level of reading comprehension, demonstrating their ability to understand written text effectively.
- The success rate was 88.9%: This high success rate signifies that the majority of students have mastered strong foundational skills in reading comprehension, which are essential for their success in higher-level reading and academic tasks.

This explains the high success rate in these two subjects, which reached 82.2% in phonological awareness and 89.9% in reading and comprehension as shown in the following chart.

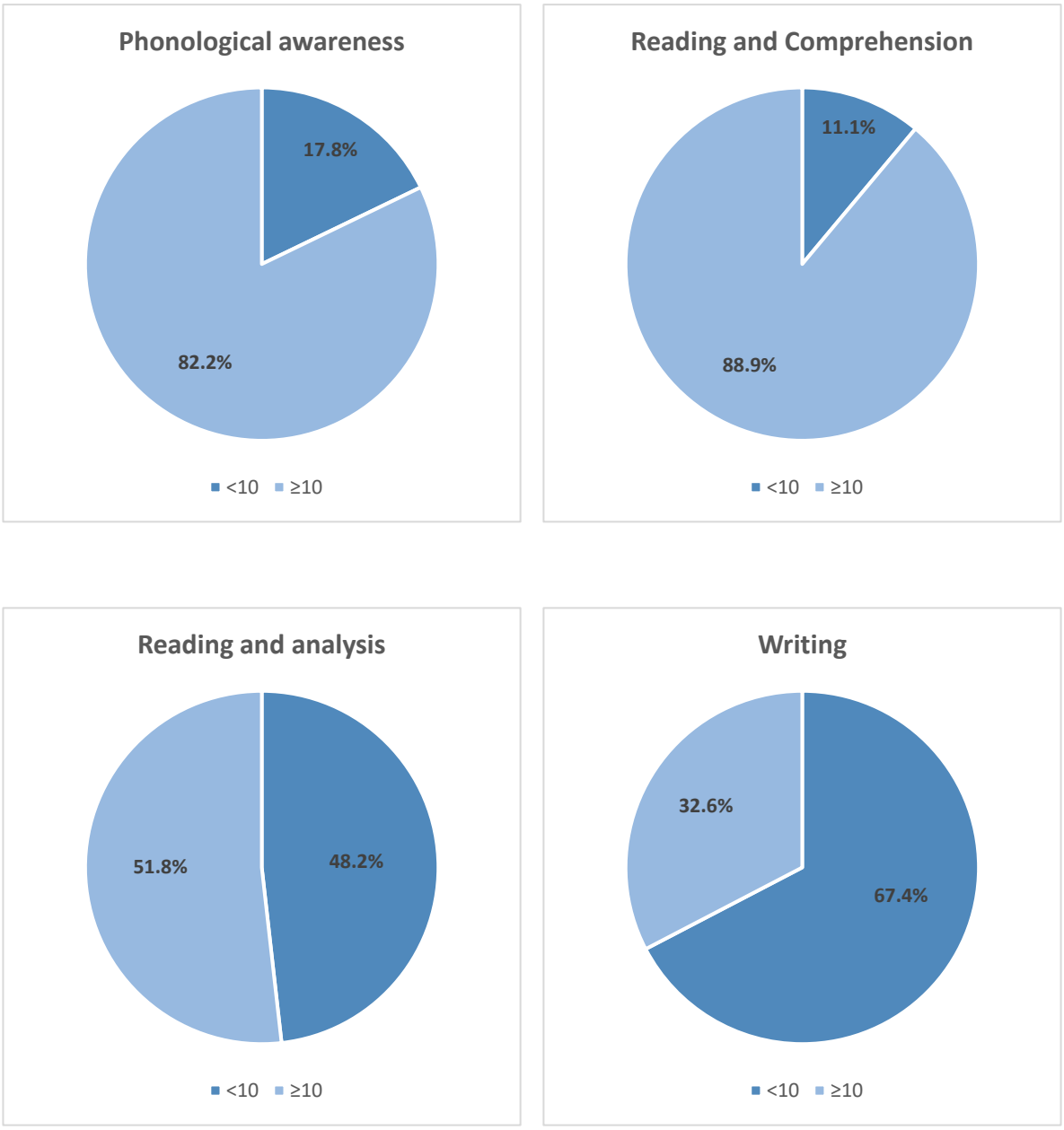


Figure 2: Arabic language BE3 competencies- success rates

On the other hand, there is a clear decrease in these averages when analyzing the results of reading, analysis, and written expression. The decrease begins with reading and analysis, which had an overall average of 9.99; this is a slight decrease from the required average, supported by the success rate in this subject, which reached 51.8%, with the difference between these results and the results of the previous two subjects being consolidated. Thus, 25% of the learners in reading and analysis received between 0 and 5.60, 50% of them between 0 and 10.40, and 75% of them between 0 and 14.40.

The most prominent decline wa in the written expression, which had an average of 7.04, a significant decrease from the required average of 6.67. The most alarming indicator is with the most repeated mark, which was 0. This explains the low success rate in this skill, which reached 32.6%. 25% of the learners in written expression received between 0 and 1.33, 50% of them between 0 and 6.67, and 75% of them between 0 and 12.

The analysis of the results reflects some educational indicators that should be relied on in the intervention plan to be implemented in the exceptional compensatory year, and we summarize them in the following points:

- The assessment shows that learners possess some tools (phonological awareness: the ability to divide the sound segments in a word to add them to the linguistic inventory), and their ability to approach simple texts (reading and understanding).
- The percentage of acquisition decreases with the increase in the level of the targeted thinking skill, so it declines with analytical reading.
- Learners suffer from weaknesses in the skill of composition, which allows the use of acquired skills from vocabulary, phrases, forms, and styles in building a sentence, paragraph, or text.
- There is a need to support the functional aspect of each skill to produce a result that proves the attainment of competence in performance tasks and integrative situations.

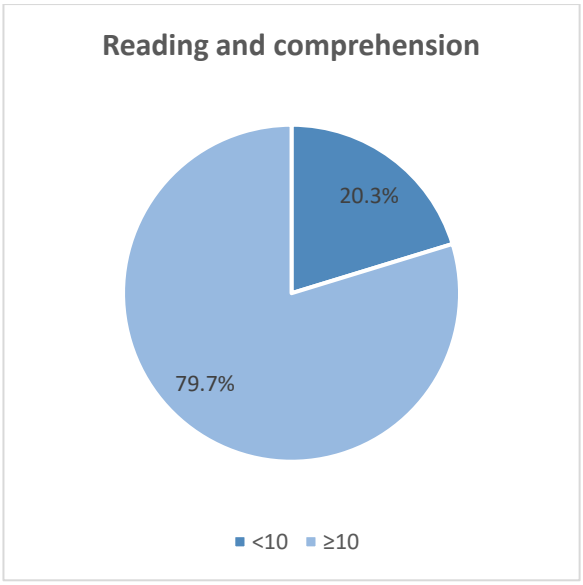
Regarding Written Expression (Writing):

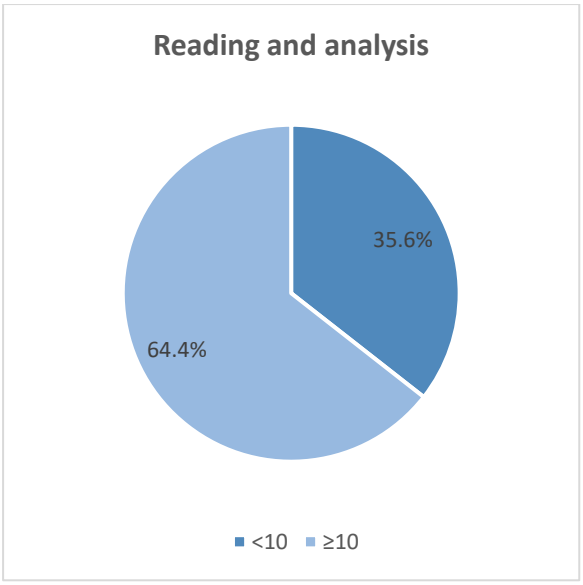
- Low average score: The average score of 7.04 in written expression falls short of the expected minimum average of 6.67, indicating widespread difficulties among students in mastering this skill.
- Disproportionately high zero scores: The most frequently occurring score 0 highlights the severity of the problem, with a significant portion of students failing to demonstrate even the minimum required proficiency in written expression.
- Low pass rate: Only 32.6% of the students achieved a passing score, emphasizing the need for significant improvement in written expression skills across the learner population.

Arabic language general results - BE 6

		Arabic Language	Reading and Analysis	Reading comprehension	Written Expression
Mean		12.03	11.05	13.90	11.53
Minimum		0	0	0	0
Maximum		19.50	19.50	20	20
Percentiles	**25**	9.50	8.38	10.4	8
	50	12.75	11.5	14.4	12
	75	15	14	17.6	16

Table 7: Arabic language BE6- competencies results





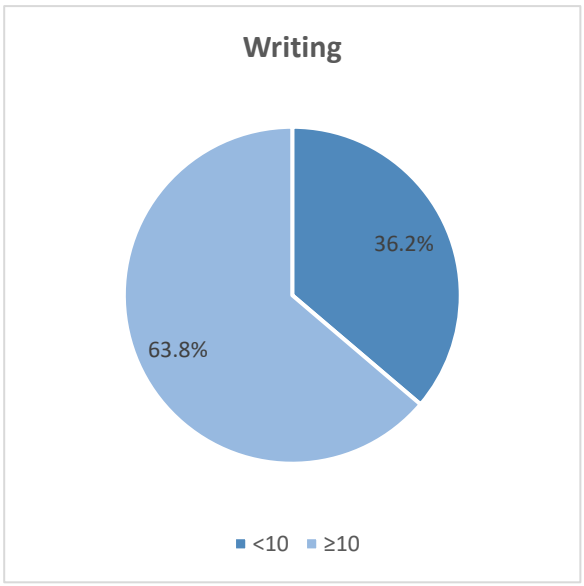


Figure 3: Arabic language BE6 competencies success rates

The percentage of the attainment of the skills in each of the three branches targeted by the assessment are reading and analysis, reading and comprehension, and written expression; the class average in reading and analysis was 11.03; this number, in addition to the success rate in the Arabic language which reached 64.4%, shows a partial achievement of the skill of analysis.

The class average in reading and comprehension rose to 13.9, and the median was close to it 14.40; These numbers in general, in addition to the success rate in the subject which reached 79.7%, show a sufficient achievement of the skills targeted by the assessment.

The striking paradox appeared in the results of the written expression, as the success rate in the skill (contrary to the prevailing ones) rose to 82.2%. So, 25% of the learners received between 0 and 14, 50% of them between 0 and 17.60, and 75% of them between 0 and 24; it is a prominent indicator of a clear achievement of the acquired competencies targeted in the assessment, and the detailed numbers have come to confirm this.

The decline in success rates and the lower average in reading and analysis compared to high success rates in both phonological awareness and reading comprehension suggest that students may face more challenges in this particular language.

Navigating Educational Strategies: Building support Plan for Analytical Reading, Expressive Skills, and Linguistic Competence

The analysis of the provided results highlights several educational indicators that are crucial for informing the intervention plan to be implemented during the compensatory program. The key points can be summarized as follows:

- **Approach to Texts:** The assessment reveals that learners demonstrate proficiency in approaching and understanding texts straightforward, particularly in the domain of reading comprehension.
- **Acquisition and Thinking Skills:** There is a recurring trend where the rate of acquisition diminishes as the complexity of the targeted thinking skill increases. This decline is particularly noticeable in analytical reading.
- **Expression and Learning Sources:** A noteworthy finding is the high rate of written expression compared to the rate of analysis. This suggests the possibility that learners might not rely on the material they have learned when composing expressive texts. Instead, they may draw upon 'random' learnings reinforced by various inputs, including the virtual world.
- **Linguistic Competence:** The analysis underscores a concern that linguistic competence is not given the appropriate weight in the construction of expressive texts. This disproportion occurs either at the expense of completing and organizing ideas or through the imitation of stereotyped models, transforming expression into something resembling memorization or self-dictation.

The analysis of the results reflects a set of educational indicators that should be based on the remedial plan to be implemented in the compensatory program year. The indicators are summarized in the following points:

Strengths:

- **Phonological Awareness:** Learners demonstrate proficiency in phonological awareness, which involves the ability to segment phonemes in a word and add them to their linguistic stock.
- **Reading Comprehension:** Learners exhibit the ability to approach and understand texts at a basic level.

Challenges:

- **Decreasing Acquisition Rate:** The rate of skill acquisition decreases as the complexity of the targeted thinking skill increases. This is particularly evident in analytical reading.
- **Weakness in Composing Skill:** There is a notable weakness in the composing skill, hindering learners' ability to effectively use acquired vocabulary, phrases, formulas, and methods in constructing sentences, paragraphs, or texts.

Need for Strengthening Employment Aspect: There's a recognized need to enhance the practical application of knowledge in various subject areas, focusing on producing outcomes that demonstrate competence in performance tasks and integration situations.

Box 1: Arabic Language- General results

3.2.2. French Language

French language results - BE3

Table 8 below shows that 703 learners participated in the test; their average was acceptable in the areas of phonological awareness and phonological awareness (12.08) as well as in the area of reading

comprehension (between 11.10 and 9.68), but it was low in the area of written expression, reaching only 7.35.

As for the mode, it shows that the most repeated grade is 18.00 for phonological awareness, 13.06 for reading comprehension in the first text and 9.33 in the second text. As for written expression, 0.00 was the most repeated grade; this field was either left without material for evaluation or the learners were unable to achieve the indicators necessary to obtain a grade.

		Phonological Awareness	Comprehension: Text 1	Comprehension: Text 2	Written Expression
Mean		12.08	11.10	9.68	7.35
Median		12	12	10	6.67
Mode		18.00	13.60	9.33[a]	0
Std. Deviation		5.69	4.90	4.49	5.66
Minimum		0	0	0	0
Maximum		20	20.00	19.33	20
Percentiles	**25**	8	7.20	6.67	2.67
	50	12	12	10.00	6.67
	75	16.00	15.20	13.33	12

Table 8: French language- BE3 - competencies

The average showed that learners' skills in distinguishing sounds and dividing words into sound segments do not significantly exceed their ability to answer comprehension questions, especially those that require analysis; this was confirmed by the median. The results also proved that the learners' abilities to answer direct comprehension and inference/analysis questions exceed their ability to answer evaluation questions. This is evident from the difference in the average results of the participants between the first text and the second text, which includes a larger number of thinking and evaluation questions. This disparity in the averages between the two texts also shows that the learners found it easier to understand the events of the narrative text than the details of the descriptive text.

Then results of the writing were the lowest, as it is a skill that requires learners to express their ideas, taking into account a set of components that include following instructions, organizing the text logically, using the language accurately and clearly, and using the appropriate and diversified vocabulary.

The students' performance exhibited a commendable average in Phonemic Awareness and Phonological Awareness (12.08) and Reading Comprehension (ranging between 11.10 and 9.68). However, a notable challenge emerged in the domain of Written Expression, where the average score was considerably lower at 7.35.

The mode further reveals interesting trends, with the most frequent score being 18.00 for Phonemic Awareness and Phonological Awareness, 13.06 for Reading Comprehension in the first text, and 9.33 for the second text. In contrast, the Written Expression had a mode of 0.00, indicating a lack of assessment material or challenges faced by learners in achieving the necessary indicators for a score.

French language test results - BE 6

Table 9 shows that the number of learners who participated in the test was 709 learners, and their average score was good in the area of reading comprehension (between 12.63 and 11.06), but it was low in the area of written expression, reaching only (8.61).

		Comprehension: Text 1	Comprehension: Text 2	Written Expression
Mean		12.63	11.06	8.61
Median		12.80	10.86	8.00
Mode		9.60	13.14	6.00
Minimum		0	0	0
Maximum		20	20	20
Percentiles	25	9.60	7.43	4
	50	12.80	10.86	8
	75	15.60	15.43	14

Table 9: French language- BE6- Competencies

The mode shows that the most repeated grade is 9.60 for reading comprehension in the first text, and 13.14 in the second text. As for the written expression, 6.00 was the most repeated grade, which is an indicator that the majority of the learners did not leave this section unanswered. The table also shows the large difference between the minimum and maximum scores in all sections, which indicates the disparity in the learners' answers in terms of the competencies included in the evaluation.

The results showed that the learners found it easier to approach the narrative text and infer its events and components than to approach the descriptive text. This explains the disparity between the results of the first text and the results of the second text.

In terms of grammar questions, the participants did not find it difficult to answer grammar questions. They did better in the first text, which contained two grammatical questions, than in the second text, which contained only one question.

While the average showed the ability of the learners to answer multiple-choice questions, choose the correct vocabulary, and answer grammar questions, it also showed that their ability to answer questions that require formulating a complete answer and reaching the level of analysis, thinking, or evaluation is not advanced.

As for the written expression, its results were the lowest, as it is a skill that requires the learners to express their ideas, taking into account a set of components that include following the instruction, organizing the ideas in the text logically, using the language accurately and clearly, and using appropriate and diversified vocabulary.

Learners' Proficiency in Different Domains

Analyzing the averages suggests that learners' abilities in distinguishing sounds and segmenting words into phonemes do not significantly surpass their capacity to answer comprehension questions, especially those requiring analysis. Furthermore, the results highlight that learners excel in responding to direct comprehension and inference/analysis

questions compared to evaluation questions. This trend is particularly noticeable in the second text, characterized by a higher number of reflection and evaluation inquiries.

Comparative Analysis: Narrative vs. Descriptive Text Comprehension

Moreover, the disparities in performance rates between the two texts underscore that learners found it comparatively easier to comprehend the events presented in the narrative text than the intricate details of the descriptive text.

Challenges in Written Expression: A Detailed Examination

In the domain of written expression, the results were notably lower, considering it is a skill that demands learners to express their ideas while adhering to several components. These include following instructions, logically organizing the text, using language accurately and clearly, and employing appropriate and varied vocabulary.

Navigating Educational Strategies: Building support Plan for Analytical Reading, Expressive Skills, and Linguistic Competence.

A- Variation in Learner Responses

The tables highlight a substantial difference between the minimum and maximum scores in all sections, emphasizing the variation in learners' responses to the competencies assessed.

B- Narrative vs. Descriptive Text Comprehension

Results indicate that learners found it easier to approach the narrative text and infer its events and components compared to the descriptive text. This observation explains the discrepancy between the results of the first and second texts.

C- Grammar Questions Analysis

Regarding grammar questions, the results of the first text, containing two linguistic grammar questions, were higher than the results of the second text with only one question. This suggests that participants faced no significant difficulty in answering the grammar questions.

D- Proficiency in Different Question Types

While the average showcases learners' ability to answer multiple-choice questions, select correct vocabulary, and respond to grammar questions, it also highlights a limitation in their proficiency when addressing questions requiring comprehensive answers, extending to the level of analysis, reflection, or evaluation.

E- Challenges in Written Expression

As for Written Expression, the lowest results underscore its nature as a skill demanding learners to express their thoughts, considering various components such as following instructions, organizing ideas logically, using language accurately and clearly, and employing diverse and appropriate vocabulary.

Disparities in Academic Performance: A Comparative Analysis of BE Scores in Public and Private Sectors

The assessment results for BE6 students revealed notable distinctions between the public and private sectors. Specifically, scores in the public sector were 54.3% below the overall average of ten, while the private sector experienced a comparatively smaller decline of 23.5%, nearly half that of the public sector. A comparison with BE3 scores shows that the academic setback at BE 3 level is more pronounced in both sectors than at the BE 6 level. This discrepancy suggests an acceptable academic standard at the BE6 level, potentially attributed to the individuals' prior years of formal education before the impact of the Coronavirus and strikes. To ensure continued success, it is imperative to maintain and bolster this academic level through ongoing support.

Box 2: French language- General results

3.2.3. English Language

English language test results- BE 3

Table 10 below shows that the average score for the 744 learners who participated in the test was 13.88 in phonological awareness, and an average of 11.47 and 12.56 in reading comprehension, which includes vocabulary and grammar and 10.46 in writing.

The table also shows that the minimum score in all areas is 0/20, while the maximum score is 20/20, except for the first text, where the maximum score was 19/20, as the learners were unable to answer the open-ended question.

		Phonemic awareness	Reading comprehension : Text 1	Reading comprehension : Text 2	Writing
Mean		13.88	11.47	12.56	10.46
Median		14.00	12.00	14.00	12.00
Mode		14.00	15.00	16.00	0.00
Std. Deviation		4.37	4.23	4.89	5.91
Minimum		0.00	0.00	0.00	0.00
Maximum		20.00	19.00	20.00	20.00
Percentiles	**25**	12.00	8.00	10.00	6.00
	50	14.00	12.00	14.00	12.00
	75	16.00	15.00	16.00	16.00

Table 10: Language - BE3- competencies

	English language
Mean	11.84
Median	12.57

Percentiles	**25**	8.86
	50	12.57
	75	15.43

Table 11: English language -BE3

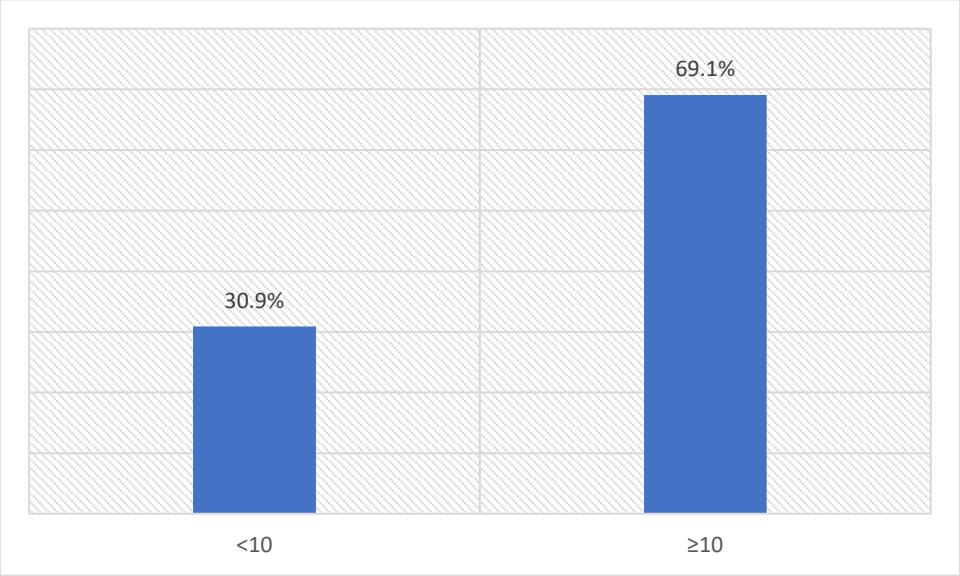


Figure 4: English language -BE3

Table 11 shows that the mean score is 11.84, which is slightly lower than the median score of 12.57. This indicates that there may be a few outliers that are pulling the mean down. The 25th percentile is 8.86, which means that 25% of the scores are below 8.86. The 75th percentile is 15.43, which means that 75% of the scores are below 15.43.

Overall, the data suggests that there is a wide range of scores on the English language test.

The results showed that students' ability to answer matching, multiple choice, and vocabulary questions and answer grammar questions is superior to their ability to answer true/false questions, especially since they were unable to correct the error. The results also indicated that students found answering questions that require inference or reflection/assessment more difficult than answering those that require information retrieval. In addition, some students found it difficult to understand the sequence of events in the narrative text, while they were able to understand the details of the descriptive text. This explains the disparity between the results of the first text and the results of the second text. In addition, the results of the second text were relatively better than the results of the first text because the questions of the second text included grammar inferences that most participants were able to answer as they got a perfect score on them.

The writing received the lowest score as it is a skill that requires learners to express their thoughts and feelings clearly and effectively, taking into account a set of components that include organizing the text in a logical and organized manner, using language accurately and clearly, diversifying vocabulary and avoiding repetition, and reviewing and editing the text after.

English language test results - BE 6

		Reading comprehension: Text 1	Reading comprehension: Text 2	Writing
Mean		11.84	11.43	8.94
Median		12	11	8
Mode		16.00	7.33	6.67
Std. Deviation		4.33	4.98	4.96
Minimum		0	0	0
Maximum		20	20	18.67
Percentiles	**25**	8	7.33	5.33
	50	12	11	8
	75	16	16	13.33

Table 12: English language – BE6- competencies

The table shows the results of an English language test for a group of 652 students (**N** = 652). The test consisted of three parts: Reading comprehension (Text 1), Reading comprehension (Text 2), and Writing.

A. Reading comprehension (Text 1):

- **Average score (mean):** 11.84
- **Middle score (median):** 12.00
- **Most frequent score (mode):** 16.00
- **Standard deviation:** 4.33 (This indicates a spread of scores around the mean)
- **Lowest score (minimum):** 0.00
- **Highest score (maximum):** 20.00
- **Scores at the 25th percentile:** 8.00 (meaning 25% of the students scored lower than 8)
- **Scores at the 50th percentile (median):** 12.00 (half of the students scored lower than 12 and half scored higher)
- **Scores at the 75th percentile:** 16.00 (meaning 75% of the students scored lower than 16)

B. Reading comprehension (Text 2):

- The statistics follow the same format as Reading comprehension (Text 1) with some variations in the average scores, median, mode, etc.

C. Writing:

- The statistics follow the same format as the Reading comprehension sections.

Key observations:

- Overall, the students performed better in Reading comprehension (Text 1) compared to Reading comprehension (Text 2) and Writing, based on the means and medians.
- There is a wider spread of scores in Reading comprehension (Text 2) and Writing as indicated by the standard deviations.
- The mode (most frequent score) is 16 for Reading comprehension (Text 1), but it is much lower for the other sections (7.33 for Text 2 reading comprehension and 6.67 for Writing). This suggests that the scores in Text 1 comprehension may be more concentrated around a particular value.

The results also showed that some learners had difficulty inferring details from the descriptive text, while they were able to understand the sequence of events in the narrative text. This explains the difference between the results of the first text and the results of the second text.

In addition, the results of the first text were relatively better than the results of the second text because the questions in the second text included inferences that most of the participants were unable to answer.

As for the grammar questions, they were distributed equally between the two texts and the participants did not find it difficult to answer them and thus were able to obtain the full grade.

The written expression had the lowest result because it is a skill that requires the learners to express their thoughts and feelings clearly and effectively, taking into account a set of components that include organizing the text in a logical and organized way, using language accurately and clearly, diversifying vocabulary and avoiding repetition, and reviewing and editing the text after finishing writing to make sure there are no spelling, grammar, or punctuation errors.

Learners' Proficiency in Different Domains

The results of the diagnostic test in English for the third grade show that students have a good level of mastery of the curriculum objectives in the areas of phonological awareness and reading comprehension. However, they need to improve their writing skills.

The following are some recommendations for improving students' writing skills:

- Provide students with opportunities to practice writing in a variety of genres and formats.
- Teach students the importance of organization, clarity, and accuracy in their writing.
- Help students to develop a strong vocabulary and grammar foundation.
- Provide students with feedback on their writing.

By implementing these recommendations, teachers can help students to develop their writing skills and become more effective communicators.

Box 3: English language- General results

3.2.4. Mathematics

Mathematics test results- BE3

Mathematics		Percent
	<10	29,2%

	≥10	70,8%
Total		100,0%

Mathematics		**Arithmetic and Algebra**	**Geometry**	**Measurement**
Percentiles	25	10.25	8	2.86
	50	14.25	12.57	9.71
	75	17	17.14	16.57

Table 13: Mathematics BE3- Competencies

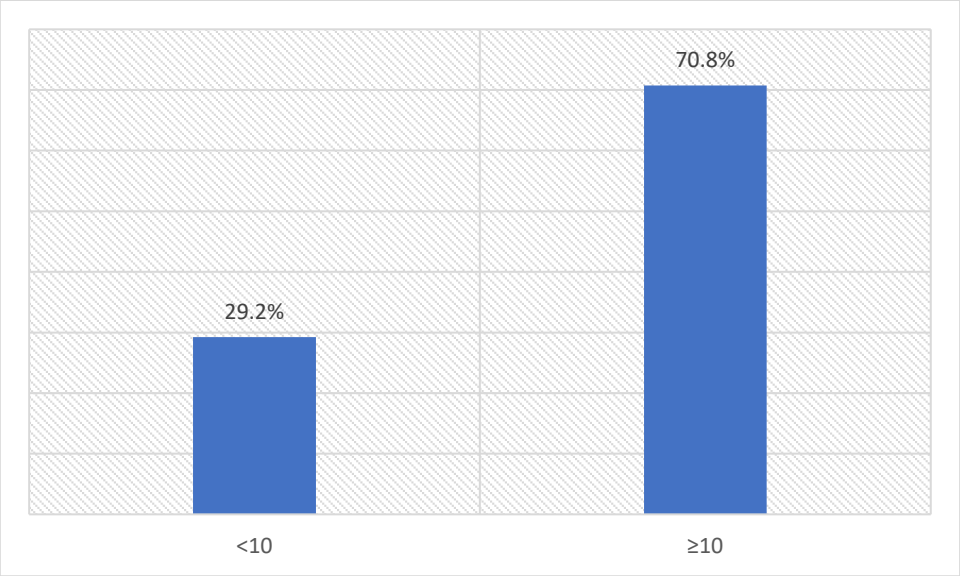


Figure 5: Mathematics test results- BE3

1450 learners participated in the diagnostic test in mathematics in BE 3, and the success rate was 70.8%, as shown in table 7 below.

A. Overall Success Rate:

- Table 13 shows a 70.8% success rate for BE3 math diagnostic test, with 'success' defined as scoring 10 or higher out of 20.
- This indicates that on average, students performed well on the test.

B. Distribution of Scores:

- At the 25th percentile, students scored 10.25, 8.00, and 2.86 in Number and Calculation, Geometry, and Measurement, respectively. This suggests that 25% of the students scored lower than these values.

- At the 50th percentile (median), students scored 14.25, 12.57, and 9.71 in the three sub-domains, indicating that half of the students scored lower than these values.

- At the 75th percentile, students scored 17.00, 17.14, and 16.57, meaning 25% of students scored lower than these values.

C. Comparison of Sub-domains:

- Geometry appears to be the most challenging topic, with the lowest 25th percentile score and the lowest median score.

- Measurement also had a lower median score than Number and Calculation.

D. Insights into Domains/ Competencies

The detailed results outlined in the table below are as follows:

Mathematics		Arithmetic and Algebra	Geometry	Measurement
Percentiles	25	10.25	8.00	2.86
	50	14.25	12.57	9.71
	75	17.00	17.14	16.57

Table 14: Mathematics - BE3

a. Arithmetic and Algebra:

- Approximately 25% of the learners achieved scores ranging from 0 to 10.25 out of 20.
- Nearly 50% secured scores between 0 and 14.25 out of 20.
- Around 75% of the learners attained scores falling within the range of 0 to 17 out of 20.
- The remaining learners demonstrated exceptional performance, scoring between 17 and 20 out of 20.

b. Geometry:

- Approximately 25% of the learners obtained scores ranging from 0 to 8 out of 20.
- Nearly 50% achieved scores between 0 and 12.57 out of 20.
- Approximately 75% of the learners demonstrated proficiency within the range of 0 to 17.14 out of 20.
- The remaining learners showcased exceptional performance, securing scores between 17.14 and 20 out of 20.

c. Measurement:

- Approximately 25% of the learners achieved scores within the range of 0 to 2.86 out of 20.
- Nearly 50% secured scores between 0 and 9.71 out of 20.
- Almost 75% of the learners demonstrated proficiency within the range of 0 to 16.57 out of 20.
- The remaining learners showed exceptional performance, scoring between 16.57 and 20 out of 20.

E. Significant Trends: Low Performance in Geometry and Measurement

Noteworthy, these results indicate a notable decrease in performance in the areas of geometry and measurement, as mentioned below:

- **Geometry:** 50% of the students scored below 12.57 out of 20, suggesting insufficient understanding of geometry concepts and skills.

- **Measurement:** 50% of the students scored below 9.71 out of 20, highlighting an even greater difficulty in mastering measurement principles and techniques.

This trend could be attributed to the critical necessity for the direct presence and supervision of teachers, particularly in guiding learners on the proper utilization of geometry and measurement tools.

Mathematics test results- BE6

1380 learners participated in the diagnostic test in mathematics in BE6, and the success rate was 41.4%, as shown in the table below.

Mathematics		Percent
	<10	58.6%
	≥10	41.4%
Total		100.0%

Mathematics		Arithmetic and Algebra	Geometry	Measurement
Percentiles	25	6.91	1.20	2.29
	50	10.36	4.40	7.14
	75	14.91	12	14.29

Table 15: Mathematics - BE6- Competencies

a. The results in arithmetic and algebra were as follows:

- Approximately 25% of the learners scored between 0 and 7 out of 20.
- Approximately 50% of the learners scored between 0 and 10.36 out of 20.

- Approximately 75% of the learners scored between 0 and 15 out of 20.
- The remaining students scored between 15 and 20 out of 20.

b. In geometry:

- Approximately 25% of the learners scored between 0 and 1.2 out of 20.
- Approximately 50% of the learners scored between 0 and 4.4 out of 20.
- Approximately 75% of the learners scored between 0 and 12 out of 20.
- The remaining students scored between 12 and 20 out of 20.

c. In measurement:

- Approximately 25% of the learners scored between 0 and 2.3 out of 20.
- Approximately 50% of the learners scored between 0 and 7.14 out of 20.
- Approximately 75% of the learners scored between 0 and 12 out of 20.
- The remaining students scored between 12 and 20 out of 20.

It is worth noting that 50% of the learners scored higher than the average in arithmetic and algebra, while 50% scored lower than the average 7.14 out of 20 in measurement. In geometry, 50% did not exceed 4.4 out of 20. In our opinion, this is due to the fact that measurement and geometry require the direct supervision of teachers, both in terms of how to use geometry tools correctly and in terms of guiding learners on how to think about geometric problems. It is also necessary to solve a large number of problems so that learners get used to this type of problem.

The weakness in geometry is also due to the fact that more time is allocated to arithmetic than to geometry and measurement. In addition, learners do not have the ability to use their mathematics skills when needed in different situations. There is also a weakness in converting graphical representations from one form to another.

Insights into Competencies

Mathematics		Arithmetic and Algebra	Geometry	Measurement
Percentiles	25	6.91	1.20	2.29
	50	10.36	4.40	7.14
	75	14.91	12.00	14.29

Table 16: Mathematics- BE6- Competencies

a. The results in Arithmetic and Algebra are as follows:

- Around 25% of the learners scored between 0 and 7 out of 20.
- Close to 50% of the learners achieved scores ranging from 0 to 10.36 out of 20.
- Approximately 75% of the learners scored between 0 and 15 out of 20.
- The remaining scores fall between 15 and 20 out of 20.

b. The results in Geometry are as follows:

- Around 25% of the learners scored between 0 and 1.2 out of 20.
- Close to 50% of the learners achieved scores ranging from 0 to 4.4 out of 20.
- Approximately 75% of the learners scored between 0 and 12 out of 20.
- The remaining scores fall between 12 and 20 out of 20.

c. The results in Measurement are as follows:

- Around 25% of the learners scored between 0 and 2.3 out of 20.
- Close to 50% of the learners achieved scores ranging from 0 to 7.14 out of 20.
- Approximately 75% of the learners scored between 0 and 12 out of 20.
- The remaining scores fall between 12 and 20 out of 20.

Implications:

The results provide insights into the teaching and learning of the three Mathematics targeted domains.

Performance Disparity:

Arithmetic & Algebra: 50% of the students scored higher than the average, indicating good performance overall.

Measurement: Only 50% scored above 7.14 (out of 20), suggesting struggle for the remaining half.

Geometry: Even lower performance, with 50% scoring below 4.4.

Possible Causes:

The results suggest that Measurement and Geometry suffer from a lack of proper teaching and supervision.

The results mention two specific areas where improvement is needed:

Tool Usage: Students might require guidance on using geometric tools accurately.

Problem-Solving Skills: Developing geometric thinking and solving practice problems are crucial.

This observation leads us to posit that the challenges in Measurement and Geometry are many by the dire need for the presence of teachers and their direct supervision of students. Weakness in Geometry may be attributed to several factors, including:

1- **Time Allocation:** Allocating more time to Arithmetic and Algebra than Geometry and Measurement
2- **Lack of Application:** Encountering challenges in employing mathematical skills when needed in different situations.
3- **Difficulty with Graphical Representations:** Facing difficulty in converting graphical representations from one form to another, which is essential for understanding and solving geometric problems.

Box 4: Mathematics- general results

3.2.5. Science

Science test results- BE3

The table below shows the results of the diagnostic test in science in BE3.

		Recall knowledge	Apply knowledge	Practicing Scientific Thinking	Mastery of Communication Techniques
Mean		13.54	12.82	9.89	13.43
Median		13.60	14.40	10.50	14.67
Mode		20	15.20	12	20
Std. Deviation		5.32	4.79	4.28	6
Coefficient of variation		0.3912	0.3326	0.4076	0.4090
Minimum		0	0	0	0
Maximum		20	20	20	20
Percentiles	25	10.40	9.60	7	9.33
	50	13.60	14.40	10.50	14.67
	75	16.80	16	13	18.67

Table 17: Science- BE3- Competencies

The number of learners who participated in the test is 1434 learners. The statistical data for the test results show that the success rate in remembering information is the highest at 77.1%, followed by similar success rates of 72.7% in applying information and 71.9% in the field of scientific communication. However, the success rate in the field of analysis and scientific practice is the lowest at 56.7% as shown in the following chart

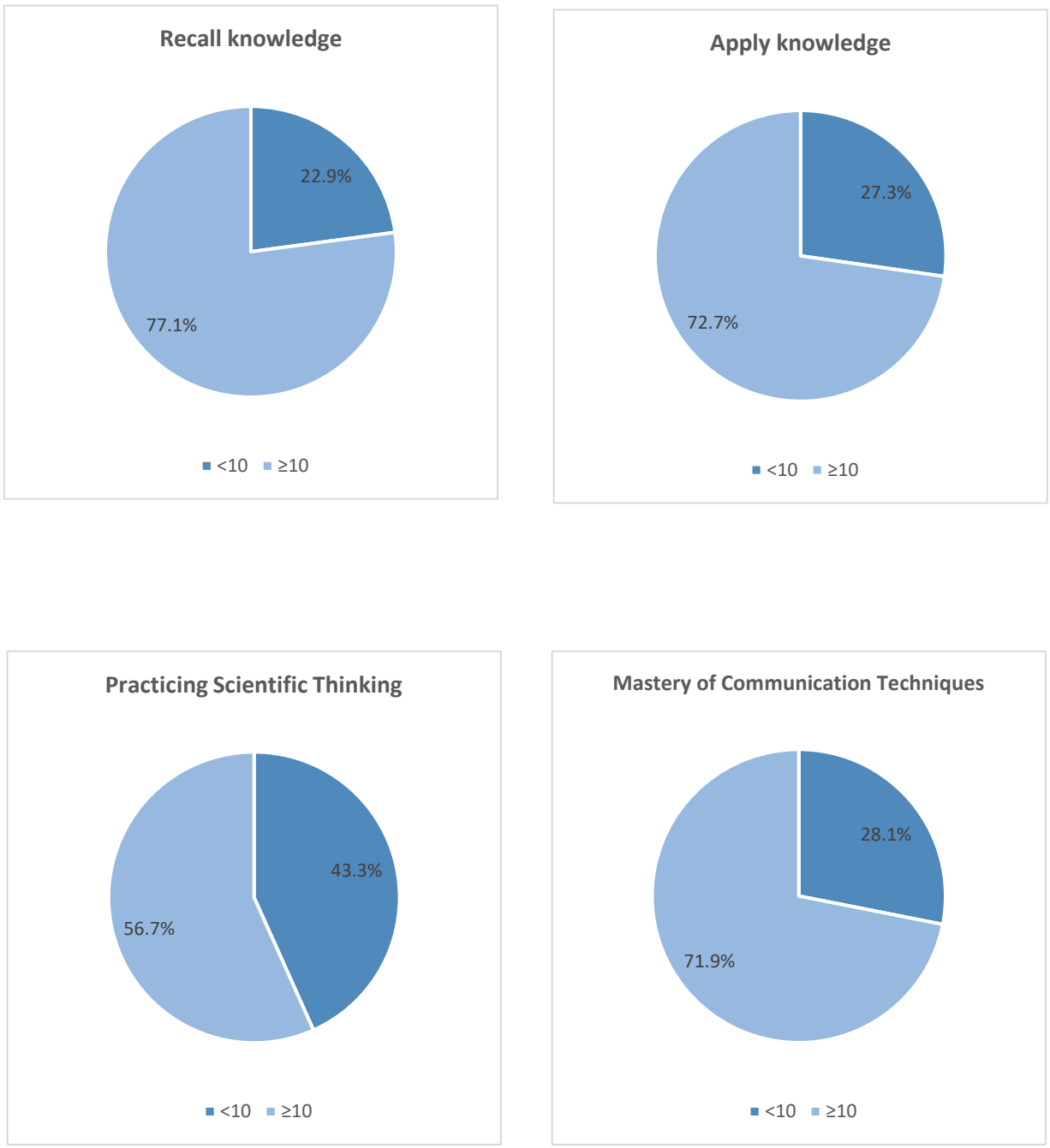


Figure 6: Science- BE3- Competencies- Success rates

The detailed statistical data in table 17 above show that the average score for learners in the field of acquired knowledge ranges from 13.54 in questions that require remembering information. As for questions that require more effort to link knowledge to new situations, the average is lower at 12.82.

In the field of communication techniques, the average score is 13.43, which is close to the median of 14.67. However, it is worth noting that the significant decline in 25% of learners who scored between 0 and 9.33, while 50% of them scored between 0 and 14.67, and 75% of them scored between 0 and 18.67.

The most prominent and dangerous decline is in the field of practicing scientific thinking, which came with an average of only 9.89. The striking point is the significant decline in 25% of learners who scored between 0 and 7, in a significant decline from the required average, and the significant decline in 50% of the learners who scored between 0 and 10.50. The average of the 75% percentile in this field is the lowest at 13.00.

A. BE3 Test Results Distributed by Themes

Table 18 presents a comprehensive breakdown of BE3 test results in science, distributed by themes, and providing valuable insights into knowledge mastery and scientific thinking proficiency across various themes.

Theme		Plants		Animals		Human		Matter and Energy		Earth and the Universe
Domain		knowledge	Reasoning	Knowledge	Reasoning	knowledge	Reasoning	Knowledge	Reasoning	Reasoning
Mean		12	8.56	13.06	14.09	14.69	4.58	13.62	8.84	10.07
Median		13	4	12	20	14.67	4	20	10	12
Std. Deviation		4.73	8.06	6.53	7.1	5.94	4.37	8.35	4.92	6.73
Minimum		0	0	0	0	0	0	0	0	0
Maximum		20	20	20	20	20	20	20	20	20
Percentiles	25	8	4	10	12	9.33	0	4	4	4
	50	13	4	12	20	14.67	4	20	10	12
	75	16	20	20	20	20	8	20	12	12

Table 18: Science BE3- Domains

In the realm of knowledge mastery and scientific thinking proficiency, the overall averages exhibit variations across different themes. This comprehensive analysis looks into the performance of BE3 learners in specific science domains, shedding light on strengths, weaknesses, and areas for improvement.

a. Knowledge Mastery by Themes

The overall average demonstrates fluctuations, ranging from 12 in the 'Plants' theme to 14.69 in the 'Humans' theme. A detailed examination reveals distinct patterns in learners' proficiency across the 'Plants', 'Animals', 'Human', and 'Matter and Energy' themes.

b. Breakdown of Proficiency Levels

Within the 'Plants' theme, learners exhibit diverse proficiency levels, with 25% scoring between zero and 8.00, 50% between 0 and 13.00, and 75% between 0 and 16.00. Similar patterns emerge in the 'Animals' and 'Human' themes, highlighting the distribution of proficiency among learners.

c. Evaluation of 'Matter and Energy' Theme

In the 'Matter and Energy' theme, learners face distinct challenges, with 25% scoring only between zero and 4.00. However, the distribution broadens, with 50% scoring between 0 and 20.00, and 75% achieving scores between 0 and 20.00, indicating varying levels of mastery.

d. Exclusion of 'Earth and the Universe' Theme

Notably, the test excluded questions related to the 'Earth and the Universe' theme, thus, limiting the scope of the assessment. This omission underscores the importance of a comprehensive evaluation framework encompassing all relevant scientific domains.

e. Scientific Thinking Proficiency

An analysis of scientific thinking proficiency reveals these outcomes. In the 'Plants' theme, the average drops to 8.56, with 50% of the learners scoring between zero and four points. The 'Human' theme demonstrates a minimum average of 4.58, indicating areas for improvement, particularly for 75% of the learners scoring between 0 and 8.00. In the 'Earth and the Universe' theme, despite the overall average of 10.07, 25% of the learners obtained a low score between zero and only 4 points.

Science test results- BE6

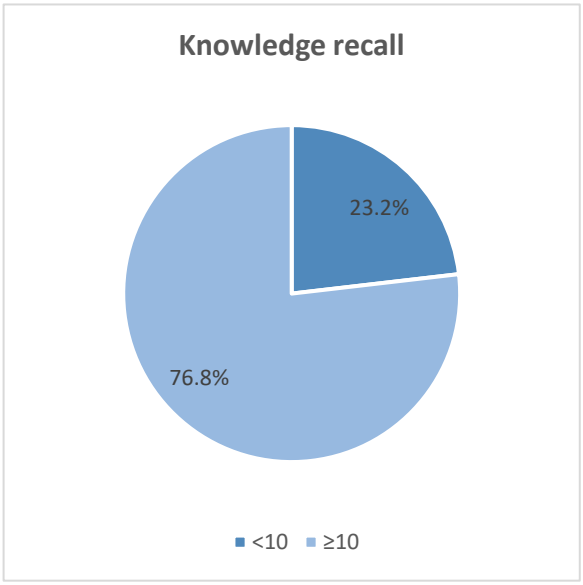
The table below shows the results of the diagnostic test in science in BE 6.

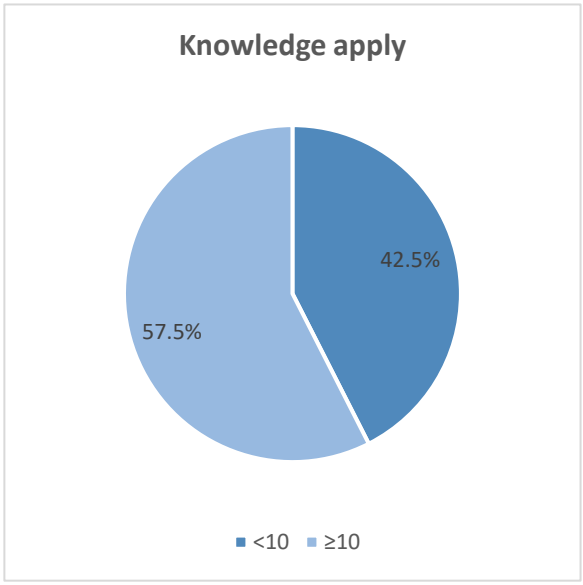
		Recall knowledge	Apply knowledge	Acquiring knowledge	Practicing Scientific Thinking	Mastery of Communication Techniques
Mean		13.31	11.39	12.51	10.44	13.58
Median		13.14	12.80	13.00	10.55	14.67
coefficient of variation		0.34	0.45	0.35	0.43	0.38
Std. Deviation		4.51	5.76	4.60	4.48	5.63
Minimum		0	0	0	0	0
Maximum		20	20	20	20	20
Percentiles	25	10.29	6.40	8.67	7.27	9.33

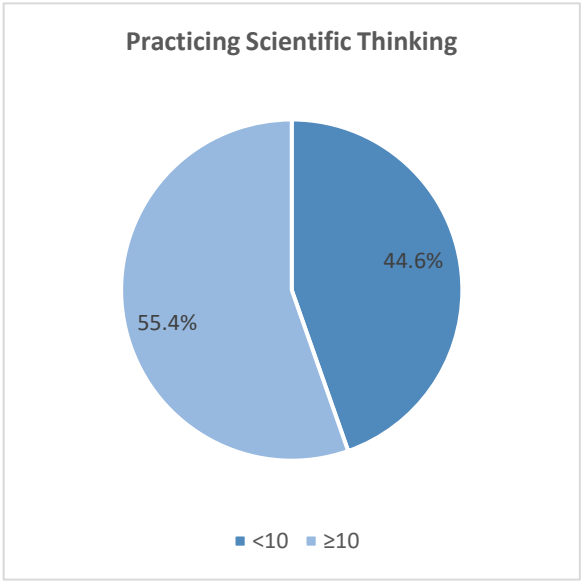
	50	13.14	12.80	13.00	10.55	14.67
	75	17.14	16.80	16.00	13.82	20.00

Table 19: Science- BE6- Competencies

The number of learners who participated in the test that was conducted to survey learning loss in BE6 is 1369 learners.







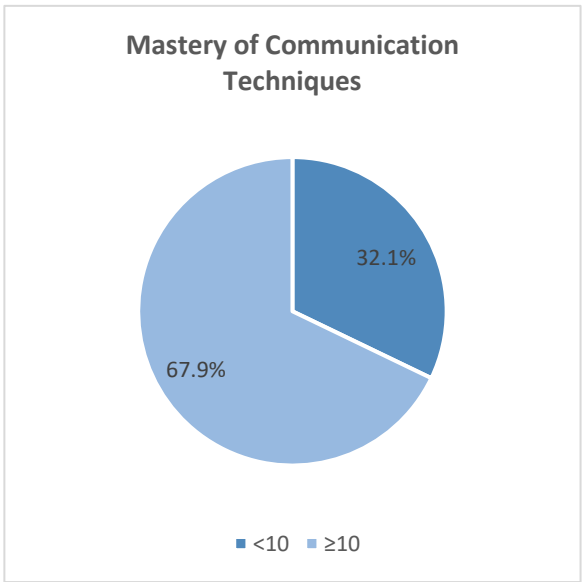


Figure 7: Science -BE6- Competencies

The test results show that the success rate in remembering information is the highest at 76.8 %, followed by a lower success rate of 57.5% in applying information and 67.9% in the field of scientific communication. However, it is worth noting that the success rate in the field of analysis and scientific practice is the lowest at 55.4%.

The detailed statistical data in table 19 above show that the average score for learners in the field of acquired knowledge is 13.31 in questions that require remembering information. As for questions that require more effort to link knowledge to new situations, the average is lower at 11.39, and the average in the field of mastering knowledge is 12.51. In terms of the field of communication techniques, the average score is 13.58.

The most prominent decrease is in the field of practicing scientific thinking, which came with an average of only 10.44. The striking point is the significant decline in 25% of learners who scored between 0 and 7.27, in a significant decrease from the required average, and the significant decline in 50% of learners who scored between 0 and 10.55. The median yields similar results as it was not far from the average. The average of the 75% percentile in this field is the lowest at 13.82.

A. Insights into domains

Table 20 presents a comprehensive breakdown of BE6 test results in science, distributed by themes, providing valuable insights into knowledge mastery and scientific thinking proficiency across various themes.

Theme		Plants		Animals		Human Beings		Matter and Energy		Earth and the Universe
Domain		knowledge	Reasoning	knowledge	Reasoning	knowledge	Reasoning	knowledge	Reasoning	Reasoning
Mean		12	8.56	13.06	14.09	14.69	4.58	13.62	8.84	10.07
Median		13	4	12	20	14.67	4	20	10	12
Std. Deviation		4.73	8.06	6.53	7.1	5.94	4.37	8.35	4.92	6.73
Minimum		0	0	0	0	0	0	0	0	0
Maximum		20	20	20	20	20	20	20	20	20
Percentiles	25	8	4	10	12	9.33	0	4	4	4
	50	13	4	12	20	14.67	4	20	10	12

	75	16	20	20	20	20	8	20	12	12

		Plant		Animal			Human			Energy	Earth
		Knowledge plant	Reasoning plant	Knowledge animal	Reasoning animal	Communication animal	Knowledge human	Reasoning human	Communication human	Knowledge energy	Reasoning earth
Mean		16.13	10.25	14.19	13.60	14.43	11.41	10.70	13.16	11.90	9.23
Median		20.00	9.33	12.00	20.00	20.00	13.33	11.00	12.00	12.00	9.33
Std. Deviation		6.94	5.50	6.04	8.34	7.91	6.34	5.85	6.64	5.29	5.48
Minimum		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum		20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Percentiles	**25**	20.00	6.67	12.00	4.00	4.00	6.67	6.00	12.00	8.00	4.00
	50	20.00	9.33	12.00	20.00	20.00	13.33	11.00	12.00	12.00	9.33
	75	20.00	14.67	20.00	20.00	20.00	14.67	16.00	20.00	17.33	13.33

Table 20: Science- BE6- Competencies

The mean scores vary across different categories, with 'Communication Animal' having the highest mean score (14.43) and 'Reasoning Earth' having the lowest (9.23).

The standard deviation values reflect the spread of scores within each category, with 'Reasoning Animal' having the highest variability (8.34) and 'Knowledge Energy' having the lowest (5.29).

a. Mastering acquired knowledge

The overall average spans from 16.13 in the 'Plants' theme, representing the highest average, to 13.16 in the 'Humans' theme. In the 'Animals' theme, 50% of the learners obtained scores between 0 and 12.00 points, while 75% scored between 0 and 20.00 points. In the 'Human' theme, 25% scored between 0 and 6.67 while 50% scored between 0 and 12.00, and 75% scored between 0 and 17.33. For the 'Matter and Energy' theme, 25% of the learners scored between 0 and 8.00 points, while 50% scored between 0 and 20.00 points, and 75% scored between 0 and 20.00 points. The last theme, 'Earth and the Universe', lacked questions in the competition.

b. Practicing scientific thinking

The average decreases to 10.25 in the 'Plants' theme, where 50% of the learners scored between 0 and 9.33 points. In the 'Animals' theme, the highest average of 13.60 is noted, yet 25% of the learners received a low score ranging between 0 and 4 points. The 'Human' theme maintains a minimum average of 11.00, with 25% of learners scoring between 0 and 6.00 points. For the 'Earth and the Universe' theme, although the overall average is 9.23, 25% of the learners obtained a low score ranging between 0 and 4 points.

Score Variations Across Categories:

The mean scores varied across different categories, with Communication Animal having the highest average (14.43) and Reasoning Earth having the lowest (9.23). The standard deviation values indicated the spread of scores within each category, with Reasoning Animal showing the highest variability and Knowledge Energy showing the lowest.

Mastering Acquired Knowledge:

The overall average scores for mastering knowledge acquisition ranged from 16.13 (highest) in the Plants theme to 13.16 in the Humans theme. The Animals theme had the most significant spread of scores, with 50% of the learners scoring between 0 and 12 points and 75% scoring between 0 and 20 points. The Humans theme showed a similar spread, with 25% scoring between 0 and 6.67 points, 50% between 0 and 12 points, and 75% between 0 and 17.33 points. The Matter and Energy theme had a median score of 20 points, with 25% scoring below 8 points and 75% scoring below 20 points. The Earth and the Universe theme lacked questions for this category.

Practicing Scientific Thinking:

The average scores for practicing scientific thinking were generally lower than those for mastering acquired knowledge. The Plants theme had the lowest average (10.25), with 50% of the learners scoring between 0 and 9.33 points. The Animals theme had the highest average (13.60), but also had a significant portion of the learners (25%) scoring between 0 and 4 points. The Human theme had a minimum average of 11.00, with 25% of the learners scoring between 0 and 6 points. The Earth and the Universe theme had the lowest average (9.23), with 25% of the learners scoring between 0 and 4 points.

Overall, the data suggests that while learners performed well in mastering acquired knowledge, particularly in the Plants theme, their performance in practicing scientific thinking skills showed more variation across themes and a tendency towards lower scores.

Box 5: Science- General results

3.3- Insights into school types: the results of the schools of the national and private sectors and UNRWA schools, according to subjects and competencies

3.3.1. Arabic Language: Results of BE3 in both Public and Private Education

General results across education sectors

The results of the learners in the third BE in Arabic are as follows:

Arabic	UNRWA	Private	Private free	Public
N	30	642	194	586
Mean	13.57	13.46	13.77	12.16
Std. Deviation	2.70	4.04	3.23	4.10
Median	13.91	14.18	14.55	13.09

ANOVA

Arabic Language					
	Sum of Squares	**Df**	**Mean Square**	**F**	**Sig.**
Between Groups	672.003	3	224.001	14.386	0.000
Within Groups	22547.101	1448	15.571		
Total	23219.105	1451			

Multiple Comparisons						
Dependent Variable:						
Bonferroni						
(I) Education sector		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
UNRWA	Private	0.10864	0.73708	1.000	-1.8387	2.0559
	Private free	-0.20444	0.77415	1.000	-2.2496	1.8408
	Public	1.40618	0.73866	0.343	-0.5453	3.3576
Private	UNRWA	-0.10864	0.73708	1.000	-2.0559	1.8387
	Private free	-0.31307	0.32329	1.000	-1.1672	0.5410
	Public	1.29755*	0.22545	0.000	0.7019	1.8932
Private free	UNRWA	0.20444	0.77415	1.000	-1.8408	2.2496
	Private	0.31307	0.32329	1.000	-0.5410	1.1672
	Public	1.61062*	0.32686	0.000	0.7471	2.4741
Public	UNRWA	-1.40618	0.73866	0.343	-3.3576	0.5453
	Private	-1.29755*	0.22545	0.000	-1.8932	-0.7019

	Private free	-1.61062*	0.32686	0.000	-2.4741	-0.7471
***. The mean difference is significant at the 0.05 level.**						

Table 21: Arabic Language Education-Sectors

Descriptive Statistics

The table shows the mean, standard deviation, and median scores for students in four different educational sectors: UNRWA schools, private free schools, private schools, and public schools.

- The mean score for UNRWA schools is 13.57, which is the highest among all four sectors.
- The mean score for public schools is 12.16, which is the lowest among all four sectors.
- The standard deviation is highest for private schools and lowest for UNRWA schools.
- The median score is highest for private schools and lowest for public schools.

ANOVA

The ANOVA table shows the results of an analysis of variance, which is a statistical test that compares the means of two or more groups.

- The F-statistic is 14.386, which is significant at the 0.000 level. This means that there is a statistically significant difference between the means of the four educational sectors.
- The sum of the squares between the groups is 672.003, which is the amount of variation in the scores that can be attributed to the differences between the four sectors.
- The sum of the squares within groups is 22547.101, which is the amount of variation in the scores that cannot be attributed to the differences between the four sectors.

Multiple Comparisons

The multiple comparison table shows the results of a post-hoc test, which is a statistical test that compares the means of two or more groups pairwise.

- The mean difference between UNRWA schools and private free schools is 0.10864, which is not statistically significant.
- The mean difference between UNRWA schools and private schools is -0.20444, which is not statistically significant.
- The mean difference between UNRWA schools and public schools is 1.40618, which is statistically significant.
- The mean difference between private free schools and private schools is -0.31307, which is not statistically significant.
- The mean difference between private free schools and public schools is 1.29755, which is statistically significant.
- The mean difference between private schools and public schools is 1.61062, which is statistically significant.

Key findings

The results of the ANOVA and multiple comparison tables show that there is a statistically significant difference between the means of the four educational sectors. The mean score for UNRWA schools is the highest, followed by the mean scores for private free schools, private schools, and public schools. The mean difference between UNRWA schools and public schools is statistically significant, as is the

mean difference between private free schools, and public schools, and the mean difference between private schools and public schools.

Linguistic skills and school types – BE3

The performance of the learners in the Arabic language diagnostic test across various educational settings is illustrated in Table 22 . Notably, learners in free private schools secured the highest average, achieving 13.77 points out of twenty. Following closely were UNRWA schools with an average of 13.57, free private schools with an average of 13.46, and public schools trailing with an average of 12.16.

Educational Sector	Mean				
	Arabic Language	Phonological Awareness	Reading comprehension	Reading and Analysis	Written Expression
UNRWA	13.57	15.58	16.51	9.44	8.89
Private (free)	13.46	15.03	16.28	10.78	7.7
Private	13.77	14.98	17.03	11.18	7.68
Public	12.16	14.33	15.06	8.76	6.02
Total	12.98	14.75	15.89	9.99	7.04

Table 22: Arabic Language - BE3- Education sectors

It is important to highlight that the calculated average score in the Arabic language diagnostic test is based on the combined performance of the learners in four specific activities: phonological awareness, reading comprehension, reading and analysis, and writing.

This observation underscores the need for increased emphasis on writing skills in Arabic language learning, indicating a prevalent challenge faced by learners across all schools (8.89 in UNRWA schools, 7.70 in free private schools, 7.68 in private schools, and 6.02 in public schools). Implementing targeted interventions and providing additional support in this area can significantly enhance students' abilities to communicate effectively in written form.

The data reveals a noteworthy concern regarding the writing skills, with a significant 67.4% of students, representing 978 individuals failing to achieve the passing grade of ten out of twenty points. This underscores the urgency to address and rectify issues related to written expression, as it represents a critical facet of the Arabic language education. The implications of this finding extend far beyond academic performance. Writing is not merely a tool for demonstrating knowledge within the classroom; it is a fundamental life skill crucial for personal and professional development in our contemporary era.

Education Sector		Phonological awareness	Reading comprehension	Reading	Writing	Arabic language
UNRWA	N	30.00	30.00	30.00	30.00	30.00

	Mean	15.58	16.51	9.44	8.89	13.57
	Median	15.43	17.71	9.60	9.33	13.91
	Std. Deviation	3.99	3.59	3.75	4.41	2.70
	Minimum	5.14	8.57	2.40	0.00	8.18
	Maximum	20.00	20.00	15.20	17.33	17.64
Private – free	N	642.00	642.00	642.00	642.00	642.00
	Mean	15.03	16.28	10.78	7.70	13.46
	Median	15.43	17.71	11.20	8.00	14.18
	Std. Deviation	4.93	4.22	5.60	5.87	4.04
	Minimum	0.00	0.00	0.00	0.00	0.00
	Maximum	20.00	20.00	20.00	20.00	20.00
Private	N	194.00	194.00	194.00	194.00	194.00
	Mean	14.98	17.03	11.18	7.68	13.77
	Median	15.43	17.71	12.00	7.33	14.55
	Std. Deviation	4.01	3.30	5.39	5.88	3.23
	Minimum	2.29	2.86	0.00	0.00	5.45
	Maximum	20.00	20.00	20.00	18.67	19.09
Public	N	586.00	586.00	586.00	586.00	586.00
	Mean	14.33	15.06	8.76	6.02	12.16
	Median	15.43	16.00	8.80	5.33	13.09
	Std. Deviation	5.15	4.66	5.32	5.05	4.10
	Minimum	0.00	0.00	0.00	0.00	0.00
	Maximum	20.00	20.00	20.00	18.67	19.27
Total	N	1452.00	1452.00	1452.00	1452.00	1452.00
	Mean	14.75	15.89	9.99	7.04	12.98
	Median	15.43	17.14	10.40	6.67	13.64
	Std. Deviation	4.90	4.34	5.52	5.59	4.00

	Minimum	0.00	0.00	0.00	0.00	0.00
	Maximum	20.00	20.00	20.00	20.00	20.00

Based on the provided data:

A. Phonological Awareness:

- All educational sectors have relatively high mean scores, ranging from 14.33 to 15.58, indicating a generally strong level of phonological awareness across sectors.
- The standard deviation values are moderate, indicating some variability in scores within each sector.

B. Reading Comprehension:

- Similar patterns are observed in reading comprehension and reading scores, with mean scores ranging from 15.06 to 17.03 for reading comprehension and 8.76 to 11.18 for reading.
- The standard deviation values are relatively higher for reading comprehension and reading compared to phonological awareness, indicating more variability in scores within each sector.

C. Writing:

Table 23: Arabic Language – BE3- Competencies

- The mean scores for writing are lower compared to phonological awareness, reading comprehension, and reading, ranging from 6.02 to 8.89 across sectors.
- The standard deviation values are moderate, suggesting some variability in writing scores within each sector.

D. Arabic Language:

- The mean scores for the Arabic language skills fall within the range of 12.16 to 13.77 across sectors.
- The standard deviation values are moderate, indicating some variability in the Arabic language scores within each sector.

E. Key findings

- Generally, private free schools and private schools tend to have slightly higher mean scores compared to UNRWA and public schools across most assessment areas.

- UNRWA schools generally demonstrate comparable or slightly lower mean scores compared to private free and private schools but tend to outperform public schools in most assessment areas.

- Public schools generally exhibit slightly lower mean scores compared to private free and private schools across most assessment areas.

It is worth noting that the grades between UNRWA schools and private schools are similar in type, but the significant difference is noticeable between public schools and private schools, ranging from 6.02 to 7.70 to 8.89 out of twenty.

The results of reading and analysis proficiency clearly highlight the differences between educational sectors in mastering various linguistic competencies. Learners cannot achieve proficiency in the English language without mastering reading comprehension and phonological awareness. The results showed that private schools achieved the highest average, which is 11.18 out of twenty, followed by free private schools with an average of 10.78 and UNRWA schools with 9.44. Public schools had the lowest position with an average of 8.76 out of twenty.

As for the results obtained in reading comprehension, understanding, and phonological awareness, they are quite similar across different sectors, indicating that the foundations of reading learning in BE3, which is the end of the first phase of basic education, are largely acquired. This is what we referred to in the first part of our study when we addressed the extent of acquiring linguistic competencies in BE3 in Arabic language.

3.3.2. Arabic Language: Results of BE6 in both Public and Private Education

General results across education sectors

Arabic	UNRWA	Private-free	Private	Public	Total
N	20	605	198	563	1386
Mean	14.71	12.13	12.09	11.80	12.03
Std. Deviation	1.93	4.04	3.87	3.63	3.84
Median	15.25	13.00	13.00	12.25	12.75

Multiple Comparisons

Dependent Variable:

Bonferroni

(I) Education sector		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
UNRWA	Private	2.57986*	0.87073	0.019	0.2793	4.8804
	Private free	2.62285*	0.89892	0.021	0.2479	4.9978
	Public	2.91232*	0.87177	0.005	0.6090	5.2156
	UNRWA	-2.57986*	0.87073	0.019	-4.8804	-0.2793

Private-free	Private free	0.04300	0.31368	1.000	-0.7858	0.8718
	Public	0.33247	0.22435	0.832	-0.2603	0.9252
Private	UNRWA	-2.62285*	0.89892	0.021	-4.9978	-0.2479
	Private	-0.04300	0.31368	1.000	-0.8718	0.7858
	Public	0.28947	0.31655	1.000	-0.5469	1.1258
Public	UNRWA	-2.91232*	0.87177	0.005	-5.2156	-0.6090
	Private	-0.33247	0.22435	0.832	-0.9252	0.2603
	Private free	-0.28947	0.31655	1.000	-1.1258	0.5469
***. The mean difference is significant at the 0.05 level.**						

Table 24: Arabic Language- BE6- Education sectors

The table depicts the average performance, variability, and central tendency of students across four educational sectors: UNRWA schools, private free schools, private schools, and public schools. UNRWA students boast the highest mean score (14.71) and median, signifying superior performance compared to other sectors, with public schools averaging the lowest score (11.80). Notably, UNRWA also exhibits the lowest standard deviation, indicating less intra-group variation in test scores.

Further analysis through post-hoc testing reveals statistically significant differences between UNRWA students and their counterparts in both private free and private schools, with mean score gaps favoring UNRWA by 2.58 and 2.62 points, respectively. The significant disparity between UNRWA and public schools is even wider at 2.91 points. Interestingly, comparisons within the private sector show no statistically significant differences in average scores between free and non-free schools, nor between private schools and public schools, despite a slight numerical edge for the private groups.

In summary, the data suggests that UNRWA students demonstrate consistently higher average performance compared to other sectors, with statistically significant gaps in achievement. While private schools show no significant performance differences among themselves, they collectively lag behind UNRWA students. Further exploration into factors contributing to these variations could yield valuable insights for educational reforms across sectors.

The results of the multiple comparisons table show that there is a statistically significant difference between the means of UNRWA schools and the means of private free schools, private schools, and public schools. The mean score for UNRWA schools is the highest, followed by the mean scores for private free schools, private schools, and public schools.

Linguistic skills and school type – BE6

Educational Sector	**Mean**				
	Arabic Language	**Phonological Awareness**	**Reading comprehension**	**Reading and Analysis**	**Written Expression**

UNRWA	13.88	13.88	16.04	14.73	14.71
Private (free)	11.32	11.32	13.92	11.31	12.13
Private	11.12	11.12	14.13	11.27	12.09
Public	10.62	10.62	13.72	11.75	11.8
Total	11.05	11.05	13.9	11.53	12.03

Educational Sector		**Arabic Language**	**Reading comprehension**	**Reading and Analysis**	**Written Expression**
UNRWA	**Mean**	**14.71**	13.88	16.04	14.73
	Median	15.25	14.25	15.2	14.67
	Minimum	11	8.5	12.8	8
	Maximum	18.5	18	19.2	18.67
Private (Free	**Mean**	**12.13**	11.32	13.92	11.31
	Median	13	12	15.2	12
	Minimum	0	0	0	0
	Maximum	19.25	19.5	20	20
Private	**Mean**	**12.09**	11.12	14.13	11.27
	Median	13	12	15.2	12
	Minimum	1.5	0.5	0.8	0
	Maximum	18.75	19	20	20
Public	**Mean**	**11.8**	10.62	13.72	11.75
	Median	12.25	11	14.4	13.33
	Minimum	0	0	0	0
	Maximum	19.5	19	20	20
Total	**Mean**	**12.03**	11.05	13.9	11.53
	Median	12.75	11.5	14.4	12
	Minimum	0	0	0	0
	Maximum	19.5	19.5	20	20

Table 25: Arabic Language- BE6- Education sectors- Competencies

This data provides information about the performance of students in different educational sectors on the Arabic language diagnostic test. By analyzing both tables, we can draw some key conclusions:

A. Overall Performance:

- The average score across all sectors is 12.03, with UNRWA schools having the highest mean score (14.71) and public schools having the lowest (11.8).
- Looking at medians, the gap between sectors appears smaller, with UNRWA having a slight edge.

B. Differences by Skill:

- **Reading Comprehension:** UNRWA and Private schools have relatively similar performances, exceeding the overall average. Public schools score slightly lower.
- **Reading and Analysis:** Again, UNRWA and Private schools perform similarly and above average. Public schools score slightly lower.
- **Written Expression:** This shows the biggest spread, with UNRWA students averaging almost 3 points higher than public schools. Both Private sectors score close to the overall average.
- **Phonological Awareness:** There are no differences across sectors, suggesting similar foundational skills in this area.

C. Distribution of Scores:

- Minimum and maximum scores reveal a wide range of performance within each sector, indicating significant individual differences.
- For example, in UNRWA schools, Written Expression scores range from 8 to 18.67, highlighting the need for differentiated instruction within sectors.

3.3.3. French Language: Results of BE3 in both Public and Private Education

General results across education sectors

Upon comprehensive examination, the study encompassing both public and private sectors, with a sample covering all governorates, revealed the subsequent findings:

French	UNRWA	Private	Private free	Public	Total
N		267	108	337	712
Mean		12.91	13.34	10.05	11.62
Std. Deviation		4.04	4.10	3.17	3.95
Median		13.68	13.37	9.68	11.37

Table 26: French Language- BE3- Education Sectors

Overall Performance:

- The average score across all sectors is 11.97, with private free schools having the highest mean score (13.34) and private schools having the lowest (10.05).
- There is a significant difference between the mean scores of private free schools and both private schools (p = 0.000) and public schools (p = 0.000).
- There is also a significant difference between the mean scores of private schools and public schools (p = 0.000).

Learners in private schools excelled with an average of 13.34, while learners in public schools obtained the lowest level, which is 10.05 out of twenty.

The results of the diagnostic test for BE3 primary class showed a difference between the public and private sectors, with the score decreasing by ten out of twenty points in the public sector by 62.5%. As for the private sector, the decline was by 36.2% below the average, which is approximately half, as shown in Table 27 below

Sector			Percent
Public	French	<10	62.5%
		≥10	37.5%
	Total		100.0%
Private	French	<10	36.2%
		≥10	63.8%
	Total		100.0%
Total	French	<10	48.0%
		≥10	52.0%
	Total		100.0%

Table 27: French Language- BE3- Public vs Private

There is a significant difference between the public and private sectors, with the latter recording a lower percentage of learning loss compared to the public sector.

The table below shows multiple comparisons.

Multiple Comparisons
Dependent Variable:
Bonferroni

Education sector		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Private	Private free	-0.42694	0.41797	0.922	-1.4299	0.5761
	Public	2.85742*	0.30030	0.000	2.1368	3.5780
Private free	Private	0.42694	0.41797	0.922	-0.5761	1.4299
	Public	3.28437*	0.40528	0.000	2.3118	4.2569
Public	Private	-2.85742*	0.30030	0.000	-3.5780	-2.1368
	Private free	-3.28437*	0.40528	0.000	-4.2569	-2.3118
***. The mean difference is significant at the 0.05 level.**						

Table 28: French Language- BE3- Education sectors

The table shows the results of a post-hoc test, which is a statistical test that compares the means of two or more groups pairwise.

The results of the test show that there are statistically significant differences between the mean scores of students in some of the sectors.

Specifically, the mean score for students in UNRWA schools is significantly higher than the mean score for students in public schools. The mean score for students in private schools is also significantly higher than the mean score for students in public schools.

There are no statistically significant differences between the mean scores of students in UNRWA schools and private free schools, or between the mean scores of students in private free schools and private schools.

The table also shows a 95% confidence interval for each mean difference.

The confidence interval is a range of values that is likely to contain the true mean difference. For example, the 95% confidence interval for the mean difference between UNRWA schools and public schools is 2.1368 to 3.5780. This means that we are 95% confident that the true mean difference between UNRWA schools and public schools is between 2.1368 and 3.5780 points.

In conclusion, the results of the post-hoc test show that there are statistically significant differences between the mean scores of students in some of the educational sectors.

Linguistic skills and school type- BE3

The diagnostic test in the French language covered the areas of phonological awareness competency, reading comprehension competency, and reading analysis competency. It included two types of texts: narrative and descriptive; the third area was written expression competency.

The oral domain was absent from the diagnostic assessment due to logistical difficulties.

A. Phonological Awareness:

- In the public sector, the results are acceptable, with 64.7% of the students passing this proficiency.

- In the private sector, there is no problem in general in all schools.

Sector			Total
Public	Phonological Awareness	<10	35.3%
		≥10	64.7%
	Total		100.0%
Private	Phonological Awareness	<10	19.6%
		≥10	80.4%
	Total		100.0%
Total	Phonological Awareness	<10	26.7%
		≥10	73.3%
	Total		100.0%

Table 29: French language BE3- Skills- Public vs Private

B. Reading Comprehension (narrative text) and Analysis

The results in the public schools showed weak success, with a success rate of 47.6% and a failure rate of 52.4%. In the private sector, the results were generally good (71.6% success rate, and 28.4% failure rate), as clearly shown in the table below, indicating the learners' clear comprehension, understanding, and analysis of narrative patterns in the private sector.

Sector			Total
Public	Reading Comprehension : Text 1	<10	52.4%
		≥10	47.6%
	Total		100.0%
Private	Reading Comprehension : Text 1	<10	28.4%
		≥10	71.6%
	Total		100.0%

Total	Reading Comprehension : Text 1	<10	39.2%
		≥10	60.8%
	Total		100.0%

Table 30: French language -BE3-Reading Comprehension- Narrative text

C. Reading comprehension (Descriptive Text) and Analysis

This table shows a decline in the comprehension and analysis rate in the public schools, with a success rate of 34.4% and an increase in the failure rate to 65.5%. As for the private schools, and UNRWA, the success rate increased to 63.6%.

Sector		**Total**	
Public	Reading Comprehension : Text 2	<10	65.6%
		>=10	34.4%
	Total		100.0%
Private	Reading Comprehension : Text 2	<10	36.4%
		>=10	63.6%
	Total		100.0%
Total	Reading Comprehension : Text 2	<10	49.6%
		>=10	50.4%
	Total		100.0%

Table 31: French Language- BE3- Reading Comprehension- Descriptive

These results demonstrated that learners found it easier to comprehend and infer events and components in the narrative text more than in the descriptive text. The first text contained two questions on grammar rules, while the second text included only one question on grammar, indicating that grammar rules did not pose a barrier to answering questions. Perhaps this contributed to the higher level of achievement in the first text.

D. Written Expression Proficiency

The results of the written expression proficiency were generally low, as they require expressing ideas while considering a set of components including following instructions, organizing the text logically, and using appropriate vocabulary in a grammatically correct manner.

In the public schools, as indicated by the table below, a high percentage of low scores (82.6%) is evident. Perhaps the reason for this is the presence of a large number of students who did not address written expression.

Sector			Total
Public	Writing	**<10**	82.6%
		≥10	17.4%
	Total		
Private	Writing	**<10**	53.2%
		≥10	46.8%
	Total		
Total	Writing	**<10**	66.5%
		≥10	33.5%
	Total		100.0%

Table 32: French Language- BE3- Writing

The written expression in the private schools was low compared to the scored pertaining to reading skills in table 31. This means that there is a wide gap between the results of phonological awareness proficiency, which recorded a success rate of 64.7%, and written expression proficiency, which dropped to 17.4% of successful candidates. The reading skill represented by phonological awareness was not utilized in written expression, making it urgent to pay attention to written expression in any form of remediation for learning loss. This can only be achieved under specific conditions, including practicing the use of vocabulary and grammar in constructing meaningful sentences.

3.3.4. French Language: Results of BE6 in both Public and Private Education

General results across education sectors

In the French language, the results in BE 6 came as follows in table 33 below:

French	UNRWA	Private	Private free	Public
N		283	104	317
Mean		11.37	10.42	8.62
Std. Deviation		4.01	3.97	3.97
Median		12.50	10.88	8.50

Table 33: French Language- BE6- Education sectors

Private free schools outperformed with an average of 11.37, while public schools achieved the lowest level, which is 8.62 out of twenty.

Multiple Comparisons						
Dependent Variable:						
Bonferroni						
(I) Education sector		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Private	Private free	0.95781	0.45696	0.109	-0.1388	2.0544
	Public	2.75696*	0.32590	0.000	1.9749	3.5390
Private free	Private	-0.95781	0.45696	0.109	-2.0544	0.1388
	Public	1.79915*	0.45032	0.000	0.7185	2.8798
Public	Private	-2.75696*	0.32590	0.000	-3.5390	-1.9749
	Private free	-1.79915*	0.45032	0.000	-2.8798	-0.7185
***. The mean difference is significant at the 0.05 level.**						

Table 34: French Language - BE6- Educational sectors

Students in public schools obtained the lowest grades, with statistical significance favoring students in private free and private schools.

The results of BE6 showed a difference between the public and private sectors, as depicted in the table below, where the score in the public sector fell below the average by 54.3%, while in the private sector, it was 23.5%. Compared to BE3, it is evident that the learning loss in BE3 is lower than in the BE 6 in both sectors. This indicates an acceptable level in BE 6. This could be attributed to the fact that BE6 students have benefited from years of regular education before the COVID-19 pandemic and strikes, making them less affected.

Sector			**Total**
Public	French	<10	54.3%

		≥10	45.7%
	Total		100.0%
Private	French	<10	23.5%
		≥10	76.5%
	Total		100.0%
Total	French	<10	38.1%
		≥10	61.9%
	Total		100.0%

Table 35: French Language-BE6- Success rates

Linguistic skills and school type

A. Comprehension and Analysis of Narrative Texts

The results in the public schools, as shown in the table below, revealed variations in the degree of success in understanding and analyzing narrative texts. In the private schools, weaknesses were observed in only a few schools, making the private schools better than the public ones in this competency. This table shows the learners' understanding, comprehension, and analysis of narrative patterns.

Sector			**Total**
Public	Reading Comprehension: Text 1	<10	36.5%
		≥10	63.5%
	Total		100.0%
Private	Reading Comprehension: Text 1	<10	16.0%
		≥10	84.0%
	Total		100.0%
Total	Reading Comprehension: Text 1	<10	25.7%
		≥10	74.3%
	Total		100.0%

Table 36: French Language- BE6- Reading Comprehension – Public vs private

B. Comprehension and Analysis of Descriptive Texts

The table below indicates a decrease in the percentage of understanding and analysis in the public schools between the first and the second text (from 63.5% in the narrative text to 41.5% in the descriptive text), reflecting the need to focus more on the descriptive pattern in teacher education and training exercises.

Sector			Total
Public	Reading Comprehension: Text 2	<10	58.5%
		≥10	41.5%
	Total		100.0%
Private	Reading Comprehension: Text 2	<10	31.5%
		≥10	68.5%
	Total		100.0%
Total	Reading Comprehension: Text 2	<10	44.2%
		≥10	55.8%
	Total		100.0%

Table 37: French Language- BE6- Reading Comprehension- Descriptive text

The private schools demonstrated their success, showing a significant disparity between the public and the private ones, with the private schools outperforming the public ones. These results also indicate that students found it easier to comprehend and analyze narrative texts compared to descriptive ones. The first text contained two grammar questions, while the second text had only one grammar question, indicate that grammar rules did not pose an obstacle to answering, and perhaps contributed to higher achievement levels in the first text.

C. Written Expression Proficiency

The results of the written expression proficiency were low, with the success rate in the public schools not exceeding 22.3% while it reached 34.3% in the private sector.

Sector			Total
Public	Writing	<10	77.7%
		≥10	22.3%

	Total		100.0%
Private	Writing	<10	34.3%
		≥10	65.7%
	Total		100.0%
Total	Writing	<10	54.8%
		≥10	45.2%
	Total		100.0%

Table 38: French Language- BE6- Writing

Therefore, there is a common weakness between the two educational sectors, although the private sector has made some progress in certain aspects.

3.3.5. Mathematics: Results of BE3 in both Public and Private Education

General results across education sectors

The provided data shows the performance of students in different educational sectors on a mathematics test.

Maths	UNRWA	Private	Private free	Public
N	30	641	194	585
Mean	13.88	13.58	12.74	11.62
Std. Deviation	2.96	4.62	5.11	4.78
Median	13.38	14.62	13.69	12.15

ANOVA					
Mathematics					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1219.011	3	406.337	18.178	0.000
Within Groups	32322.042	1446	22.353		
Total	33541.053	1449			

Multiple Comparisons						
Dependent Variable:						
Bonferroni						
(I) Education sector		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
UNRWA	Private	0.29454	0.88315	1.000	-2.0387	2.6277
	Private	1.13703	0.92753	1.000	-1.3134	3.5875
	Public	2.25378	0.88504	0.066	-0.0844	4.5920
Private	UNRWA	-0.29454	0.88315	1.000	-2.6277	2.0387
	Private free	0.84249	0.38742	0.179	-0.1810	1.8660
	Public	1.95924*	0.27034	0.000	1.2450	2.6734
Private free	UNRWA	-1.13703	0.92753	1.000	-3.5875	1.3134
	Private	-0.84249	0.38742	0.179	-1.8660	0.1810
	Public	1.11675*	0.39170	0.027	0.0819	2.1516
Public	UNRWA	-2.25378	0.88504	0.066	-4.5920	0.0844
	Private	-1.95924*	0.27034	0.000	-2.6734	-1.2450
	Private free	-1.11675*	0.39170	0.027	-2.1516	-0.0819
***. The mean difference is significant at the 0.05 level.**						

Table 39: Mathematics- BE3 – Education sectors

By analyzing the table and ANOVA results, we can draw some key conclusions:

Overall Performance:

- The average score across all sectors is 12.77, with UNRWA schools having the highest mean score (13.88) and public schools having the lowest (11.62).
- The mean difference between UNRWA schools and public schools is statistically significant (p = 0.066).
- The mean difference between private free schools and public schools is also statistically significant (p = 0.000).
- There is no statistically significant difference between the mean scores of UNRWA schools and private free schools (p = 1.000).

Distribution of Scores:

- The standard deviation is highest for private schools and lowest for UNRWA schools.

- The median score is highest for private free schools and lowest for public schools.

ANOVA Results:

- The ANOVA results show that there is a significant difference between the mean scores of students in different educational sectors ($p = 0.000$).
- This means that the observed differences in mean scores are not likely due to chance.

Multiple Comparisons:

- The multiple comparisons table shows that the mean score for UNRWA schools is significantly higher than the mean score for public schools.
- The mean score for private free schools is also significantly higher than the mean score for public schools.
- There is no statistically significant difference between the mean scores of UNRWA schools and private free schools.

Overall, the data suggests that there are significant differences in the performance of students in different educational sectors on the mathematics test. UNRWA schools have the highest mean score, followed by private free schools and then public schools.

- The standard deviation is higher for private schools than for public schools. This suggests that there is more variation in student performance in private schools.
- The median score is higher for private schools than for public schools. This suggests that the middle 50% of students in private schools perform better than the middle 50% of students in public schools.
- The ANOVA results show that there is a significant difference between the mean scores of students in different educational sectors. This means that the observed differences in mean scores are not likely due to chance.
- The multiple comparisons table shows that the mean score for UNRWA schools is significantly higher than the mean score for public schools. This suggests that students in UNRWA schools perform better on the mathematics test than students in public schools.
- The mean score for private free schools is also significantly higher than the mean score for public schools. This suggests that students in private free schools perform better on the mathematics test than students in public schools.
- There is no statistically significant difference between the mean scores of UNRWA schools and private free schools. This suggests that students in UNRWA schools and private free schools performed similarly on the mathematics test.

Mathematics skills and school type.

The following tables display the results of Math tests across three domains within various educational sectors.

Educational Sector		Mathematics	Arithmetic and Algebra	Geometry	Measurement
UNRWA	Mean	13.88	14.52	13.52	11.54
	Median	13.38	14.63	13.43	10.86

Private (Free)	**Mean**	13.58	14.25	13.2	10.65
	Median	14.62	15.25	14.29	11.43
Private	**Mean**	12.74	13.78	12.08	9.27
	Median	13.69	15.5	12.86	8.57
Public	**Mean**	11.62	12.29	11.03	8.5
	Median	12.15	12.75	11.43	8
Total	**Mean**	12.69	13.4	12.18	9.62
	Median	13.15	14.25	12.57	9.71

Table 40: Mathematics -BE3- Education sectors- Branches

		UNRWA	Private (Free)	Private	Public	Total
Mathematics	**<10**	6.7%	22.3%	36.1%	35.7%	29.2%
	≥10	93.3%	77.7%	63.9%	64.3%	70.8%

Table 41: Mathematics- BE3- Success rate- public vs private

The table shows the percentage of students in each educational sector who scored above or below 10 in mathematics. The UNRWA sector has the highest percentage of students scoring above 10 (93.3%), while the public sector has the lowest percentage (64.3%). The private (sector has the highest percentage of students scoring below 10 (36.1%), while the UNRWA sector has the lowest percentage (6.7%).

- **UNRWA students consistently outperformed other sectors in all types.** UNRWA holds the highest mean and median scores across all areas, with Arithmetic and Algebra displaying the most significant advantage (1.72 mean points higher than the closest competitor).
- **Private schools showed mixed performance.** While they rank above public schools in most types, their scores fall behind UNRWA. Private free schools seem to edge out private schools in most cases, except in Geometry and Measurement where the reverse is true.
- **Public schools exhibit the lowest performance across all types.** Their mean and median scores consistently fell below other sectors, with the most significant gap observed in Mathematics (2.26 mean points lower than the closest competitor).
- **Arithmetic and Algebra appeared to be the strongest type overall.** This type boasts the highest mean and median scores across all sectors.
- **Measurement showed the weakest performance overall.** This types consistently held the lowest mean and median scores across all sectors.

3.3.6. Mathematics: Results of BE6 in both Public and Private schools

General results across education sectors

The table below shows the results of the tests in mathematics in BE3 for the schools of the public and private sectors and UNRWA schools:

Maths	UNRWA	Private	Private free	Public	Total
N	20	602	198	560	1380
Mean	12.75	10.57	10.45	7.78	9.45
Std. Deviation	2.93	5.35	5.29	4.31	5.11
Median	12.84	10.26	10.42	6.74	8.21

Multiple Comparisons

Dependent Variable:

Bonferroni

(I) Education sector		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
UNRWA	Private	2.17681	1.11697	0.309	-0.7743	5.1279
	Private free	2.30080	1.15303	0.277	-0.7456	5.3472
	Public	4.96617*	1.11831	0.000	2.0115	7.9208
Private	UNRWA	-2.17681	1.11697	0.309	-5.1279	0.7743
	Private free	0.12398	0.40260	1.000	-0.9397	1.1877
	Public	2.78935*	0.28852	0.000	2.0271	3.5516
Private free	UNRWA	-2.30080	1.15303	0.277	-5.3472	0.7456
	Private	-0.12398	0.40260	1.000	-1.1877	0.9397
	Public	2.66537*	0.40632	0.000	1.5918	3.7389
Public	UNRWA	-4.96617*	1.11831	0.000	-7.9208	-2.0115
	Private	-2.78935*	0.28852	0.000	-3.5516	-2.0271
	Private free	-2.66537*	0.40632	0.000	-3.7389	-1.5918

***. The mean difference is significant at the 0.05 level.**

Table 42: Mathematics- BE6- Education sectors

- **UNRWA students outperformed their peers in all sectors.** UNRWA students have the highest mean (12.75), standard deviation (2.93), and median (12.84) scores.
- **Private free and private schools showed similar performance.** While they have higher mean scores than public schools, they lag behind UNRWA schools. Private free schools have a slightly higher mean score (10.57) than private schools (10.45).
- **Public schools have the lowest performance.** They have the lowest mean (7.78), standard deviation (4.31), and median (6.74) scores.

The multiple comparisons table shows the results of a post-hoc test, which is a statistical test that compares the means of two or more groups pairwise.

- **UNRWA students significantly outperform students in all other sectors.** The mean difference between UNRWA and public schools is 4.97 points, which is statistically significant.
- **There is no significant difference between private free and private schools.** The mean difference between the two groups is 0.12 points, which is not statistically significant.
- **Public schools significantly underperform compared to both UNRWA and private schools.** The mean difference between public schools and UNRWA schools is 4.97 points, and the mean difference between public schools and private free schools is 2.79 points, both of which are statistically significant.

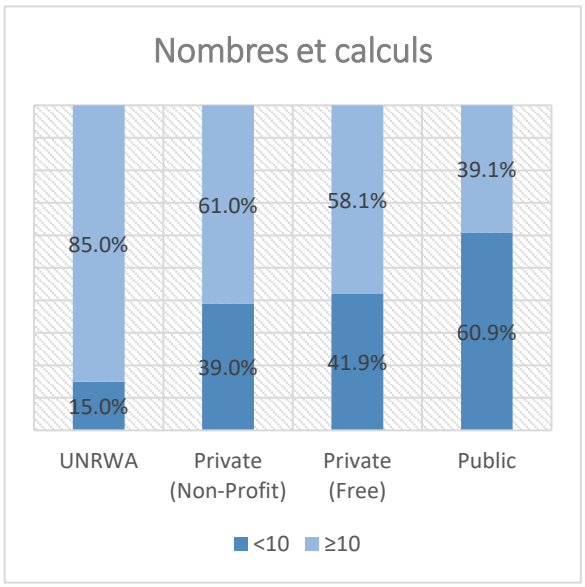
In conclusion, the data suggests that UNRWA students have the highest Math performance, followed by private free and private schools, and then public schools. Further research is needed to identify the factors that contribute to these differences and to develop interventions that can help improve Math performance in all sectors.

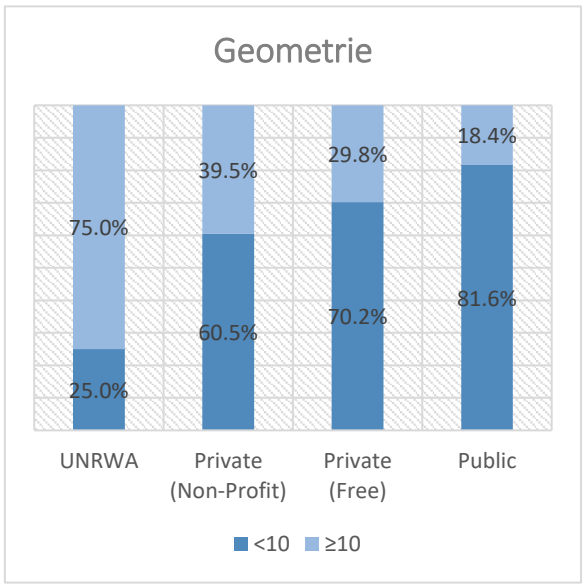
Mathematics skills and school types

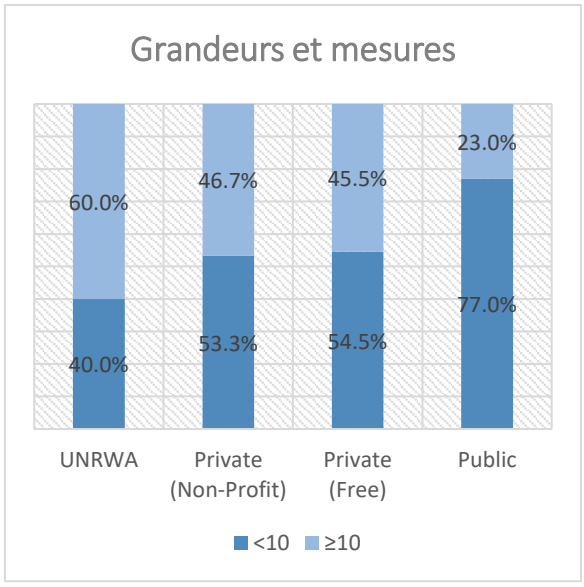
Educational sector		Mathematics	Nombres et calculs	Geometrie	Grandeurs et mesures
UNRWA	Mean	12.75	12.65	12.76	12.71
	Median	12.84	12.45	14.2	13.71
Private (Free)	Mean	10.57	11.75	7.97	9.71
	Median	10.26	12.18	5.6	8.57
Private	Mean	10.45	11.72	7.53	9.75
	Median	10.42	11.64	6.2	9.14
Public	Mean	7.78	9.52	4.68	5.92
	Median	6.74	8.91	2.4	4
Total	Mean	9.45	10.86	6.64	8.22

	Median	8.21	10.36	4.4	7.14

Table43 : Mathematics- BE6- Sectors- skills







		UNRWA	Private (Free)	Private	Public	Total
Mathematics	**<10**	10.00%	48.80%	47.50%	74.80%	58.60%
	≥10	90.00%	51.20%	52.50%	25.20%	41.40%

Table 44: Mathematics- BE6- Education sectors- success rates

A. UNRWA:

Out of 20 Mathematics tests, the success rate was 90%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** The passing rate stands at 85%, with approximately 50% of the learners achieving scores between 0 and 12.45 out of 20.
- **Geometry:** The passing rate stands at 75%, with approximately 50% of the learners achieving scores between 0 and 14.2 out of 20.
- **Measurement:** The passing rate stands at 60%, with approximately 50% of the learners achieving scores between 0 and 13.71 out of 20.

B. Private (free):

Out of 602 Mathematics tests, the success rate was 51.2%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** The passing rate stands at 61%, with approximately 50% of the learners achieving scores between 0 and 12.18 out of 20.
- **Geometry:** The passing rate stands at 39.5%, with approximately 50% of the learners achieving scores between 0 and 5.6 out of 20.
- **Measurement:** The passing rate stands at 46.7%, with approximately 50% of the learners achieving scores between 0 and 8.57 out of 20.

Note:

In Geometry, the situation was catastrophic, as approximately 50% did not exceed 5.6 out of 20. Likewise, in Measurement, 50% did not exceed 8.57 out of 20.

C. Private:

Out of 198 Mathematics tests, the success rate was 52.5%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** The passing rate stands at 58.1%, with approximately 50% of the learners achieving scores between 0 and 11.64 out of 20.
- **Geometry:** The passing rate stands at 29.8%, with approximately 50% of the learners achieving scores between 0 and 6.2 out of 20.
- **Measurement:** The passing rate stands at 45.5%, with approximately 50% of the learners achieving scores between 0 and 9.14 out of 20.

Note

In Geometry, the situation was catastrophic, as approximately 50% did not exceed 6.2 out of 20. Likewise, in Measurement, 50% did not exceed 9.14 out of 20.

D. Public:

Out of 560 Mathematics tests, the success rate was 25.2%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** The passing rate stands at 39.1%, with approximately 50% of the learners achieving scores between 0 and 8.91 out of 20.
- **Geometry:** The passing rate stands at 18.4%, with approximately 50% of the learners achieving scores between 0 and 2.4 out of 20.
- **Measurement:** The passing rate stands at 23%, with approximately 50% of the learners achieving scores between 0 and 4 out of 20.

Implications:

As a conclusion of the assessment, the situation in the public sector is deemed unacceptable, particularly in Arithmetic and Algebra, where 50% did not get a grade higher than 8.91 out of 20. The results was worse in Geometry, with approximately 50% falling short of 2.4 out of 20. Similarly, in Measurement, 50% did not exceed 4 out of 20. This analysis underscores the urgent need for targeted interventions and improvement strategies to enhance mathematical proficiency in these critical domains within the public sector.

3.3.7. English language Results of BE3 in both Public and Private Education

General results across education sectors

For the English language, the results were as follows:

The learners of private free schools excelled with an average of 11.39, and the learners of public schools obtained the lowest level of 10.71 out of twenty. However, when we applied ANOVA analysis, no statistical significance was shown between the results of the different schools, as shown in the table below, where the p-value was 0.357.

The table below shows the results of the achievement tests in English in BE3 for the schools of the public and private sectors and UNRWA schools:

- The table shows that the learners of private free schools had the highest average score, followed by the learners of private schools, and then the learners of public schools. However, the difference between the average scores of the different schools is not statistically significant, which means that it is likely to be due to chance.

- The mean scores for Private free schools are the highest among all categories, followed closely by UNRWA and Private schools, with public schools having the lowest mean score. This indicates that, on average, students in Private free schools performed the best in English comprehension, while those in public schools performed the worst.

- The standard deviation values show that there is greater variability in scores among students in Private free schools compared to other categories. This suggests that there may be more diverse levels of performance within Private free schools.

- The median scores generally follow a similar pattern to the mean scores, with Private free schools having the highest median, followed by UNRWA and Private schools, and Public schools having the lowest.

Overall, the data indicates differences in English comprehension performance across different types of schools, with Private free schools generally outperforming others.

English	UNRWA	Private	Private free	Public	Total
N	20	322	90	225	657
Mean	11.01	11.39	11.07	10.71	11.10
Std. Deviation	2.73	4.44	4.36	4.34	4.35
Median	10.80	11.33	10.53	10.40	10.93

English language					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	61.377	3	20.459	1.080	**0.357**
Within Groups	12369.048	653	18.942		
Total	12430.426	656			

Table 45: English Language- BE3- Education sectors

The results of the tests in English in the BE3 suggest that there is no significant difference in achievement between the schools of the public and private sectors.

English Language skills and school type

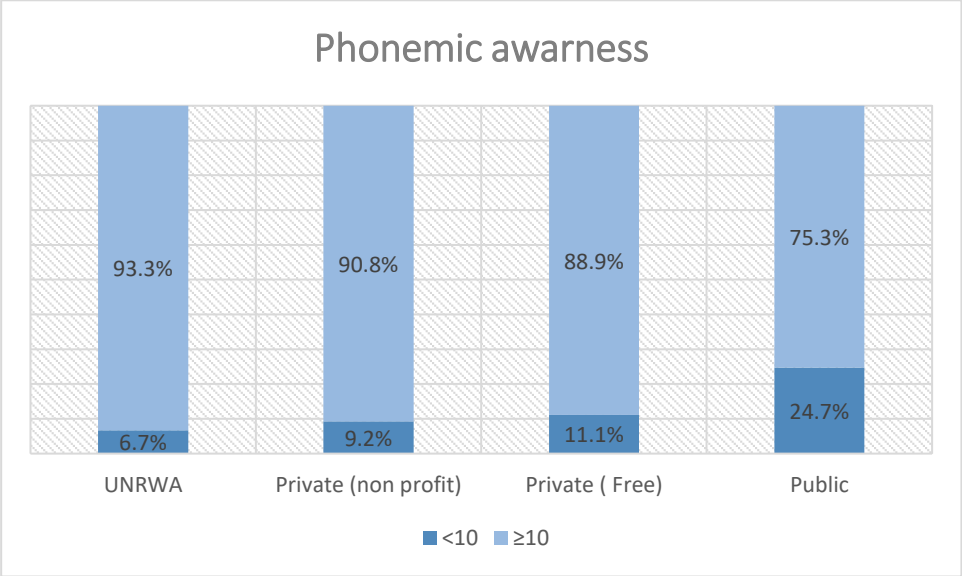
The table presents the outcomes of the diagnostic test for English language proficiency among BE 3 students across diverse educational sectors in Lebanon. The average results are outlined below:

UNRWA:	**11.52%**
Private (Free)	**12.25%**
Private	**12.70%**
Public	**11.02%**

Educational Sector		English Language	Phonological Awareness	Reading comprehension (Text 1)	Reading comprehension (Text 2)	Writing
UNRWA	**Mean**	11.52	13.4	11.37	12.17	10.1
	Median	12	14	12	12	10

Private (Free)	**Mean**	12.25	14.34	11.89	12.97	10.85
	Median	13.43	14	13	14	12
Private	**Mean**	12.7	15.44	11.43	13.1	12.21
	Median	13	16	12	13	13
Public	**Mean**	11.02	12.8	10.93	11.87	9.39
	Median	11.43	14	12	13	11
Total	**Mean**	11.84	13.88	11.47	12.56	10.46
	Median	12.57	14	12	14	12

Table 46: English language- Be3- Education sectors- skills



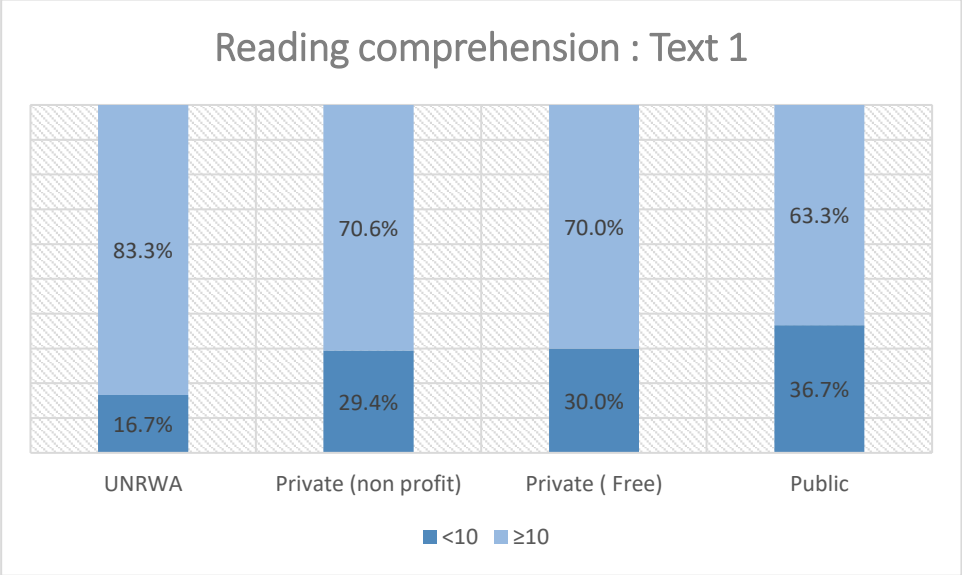


Figure 8: English Language- BE3- Success rates- sectors

- **Private schools generally outperformed other sectors.** Both private types exhibited higher mean and median scores in most subcategories, particularly in Reading Comprehension (both texts) and Writing.

- **UNRWA students showed mixed performance.** They ranked above public schools in most areas but fell short of both private categories. Notably, UNRWA scores are strongest in Phonological Awareness, potentially implying a solid foundation for language development.

- **Public schools demonstrated the lowest performance.** Public schools have consistently lower mean and median scores across all areas, with the most significant gap observed in Writing (2.82 mean points lower than the closest competitor).

- **Reading Comprehension appears to be a strong area for most, while Writing shows room for improvement.** Both Reading Comprehension texts have the highest mean and median scores across all sectors, while Writing consistently holds lower scores.

Considering the information presented, it is evident that the distinction between the private sector and the public sector is minimal, with both sectors achieving results above average. However, concerning the competencies assessed in the test, diverse educational sectors exhibited dissimilar results, each carrying distinct implications.

In the domain of **phonological awareness**, the outcomes falling below the average (<10) in the diverse educational sectors are as follows:

UNRWA	6.7%
Private (free)	9.2%
Private	11.1%
Public	24.7%

Phonological Awareness Disparities Across Educational Sectors

The public sector reveals lower percentages in comparison to other sectors, resulting in a deficit in learners' phonological awareness skills. This deficiency encompasses crucial abilities like segmenting phonemes within a word for inclusion in their linguistic repertoire and adopting a basic approach to reading texts.

In the domain of **reading comprehension**, the outcomes falling below the average (<10) in various educational sectors are delineated as follows:

UNRWA	Between 10% and 16.7%
Private (free)	Between 20.7% and 26.4%
Private	Between 13.3% and 30%
Public	Between 30.3% and 36.7%

The correlation between reading comprehension and phonological awareness is evident, and the relatively low results suggest a challenge in learners' ability to engage in analytical reading.

In the domain of **written expression**, the outcomes falling below the average (<10) in various educational sectors are delineated as follows:

UNRWA	36.7%
Private (Free)	35.9%
Private	27.8%

Public	46.4%

Challenges in Language Proficiency Across Educational Sectors

There is a noticeable decline in language proficiency across all educational sectors, particularly in the public sector as the analysis of the results reveals critical indicators for consideration during the compensatory year. The challenges faced by the public sector in the English language, including expression and communication, may affect the performance in other subjects, i.e., these difficulties extend to impacting performance in subjects like mathematics and science.

The results highlight a significant weakness in written expression, especially within the public sector. This underscores the urgent need for support in public schools and for providing teacher training programs. Strengthening teachers' abilities to enhance oral expression in clear, straightforward language is crucial. This effort aims to empower learners to organize their thoughts effectively and apply language skills across various academic domains.

3.3.8. English language Results of BE6 in both Public and Private Education

General results across education sectors

In the pursuit of understanding language proficiency, Table 47 below elucidates the results of the diagnostic test for the English language for the BE6 in various educational sectors in the Lebanese territories. The subsequent averages were as follows:

UNRWA	11.01%
Private (Free)	11.39%
Private	11.07%
Public	10.71%

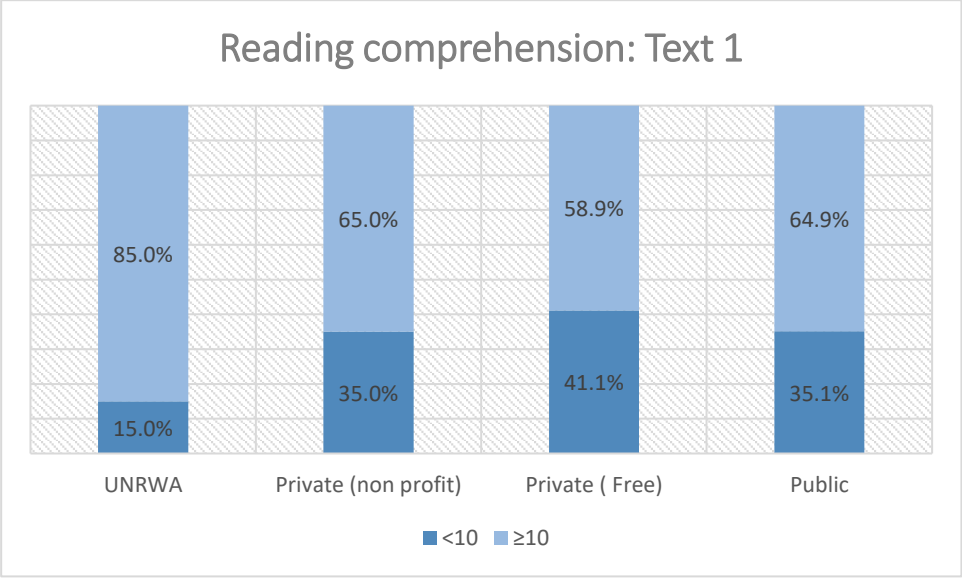
Educational Sector		English Language	Phonological Awareness	Reading comprehension (Text 1)	Reading comprehension (Text 2)	Writing
UNRWA	**Mean**	11.27	11.27	11	10.53	11.01
	Median	10.67	10.67	10.67	11.33	10.8
Private (Free)	**Mean**	12.26	12.26	11.67	9.03	11.39
	Median	12.67	12.67	12	8	11.33
Private	**Mean**	11.34	11.34	11.85	8.96	11.07
	Median	11	11	11.33	7.33	10.53
Public	**Mean**	11.5	11.5	10.94	8.67	10.71
	Median	12	12	10.67	8	10.4

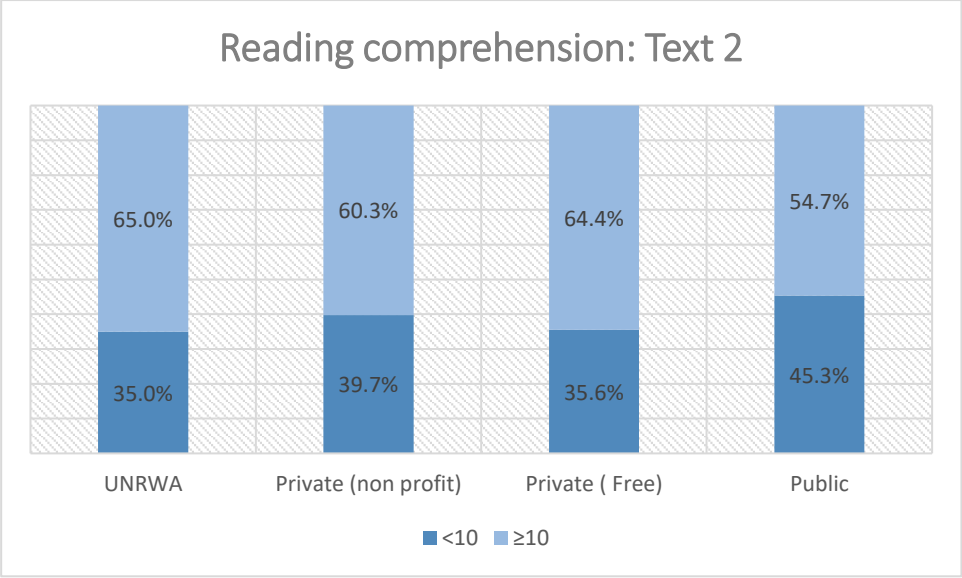
Total	**Mean**	11.84	11.84	11.43	8.94	11.1
	Median	12	12	11	8	10.93

Table 47: English language- BE6- Education sectors- Competencies

English Language skills and school type

The detailed analysis of the English language proficiency test results reveals a marginal difference between the private and public sectors, with both sectors surpassing the average. Beyond the overall performance, a thorough exploration of the competencies assessed in the test uncovers distinctive outcomes across diverse educational sectors, each carrying implications that warrant careful consideration.





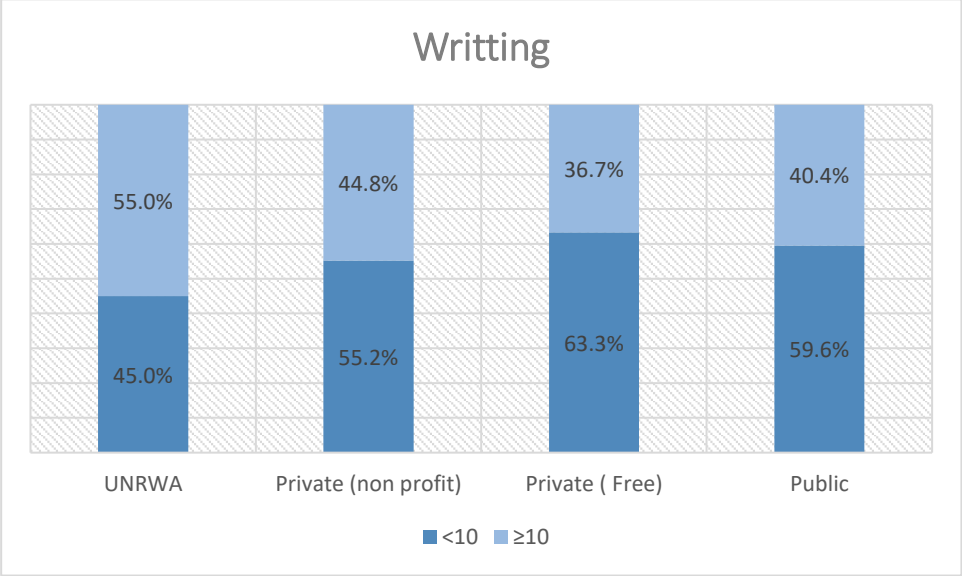


Figure 9: English language- BE6- Success rates

Analyzing Reading Comprehension Proficiency Across Educational Sectors

Within the domain of **reading comprehension**, the results show variations when comparing narrative and descriptive texts. The outcomes, falling below the average (<10), showcase distinct patterns across different educational sectors, as delineated below:

UNRWA	Between 15% and 35%
Private (free)	Between 35% and 39.7%
Private	Between 35.6% and 41.1%
Public	Between 35.1% and 45.3%

Evaluating Written Expression Proficiency Across Educational Sectors

Within the domain of written expression, a notable decline in results across all educational sectors underscores the urgency for compensatory measures. The outcomes, falling below the average (<10), demonstrate consistent challenges across diverse educational sectors, as delineated below:

UNRWA	35%
Private (Free)	42.5%
Private	47.8%
Public	47.6%

Addressing Proficiency Challenges in Written Expression Across Educational Sectors

The analysis of results highlights crucial educational indicators pivotal for the compensatory year, focusing on the public sector. **A sharp decline in Written Expression** is noticed. The most significant and concerning decline in the field of written expression necessitates collaborative efforts across all educational sectors. Implementation of diverse strategies and materials is crucial to cultivating analytical, reading, and writing skills.

Key findings

A. Question Response Patterns in English Language Assessment

The average score reveals that the learners demonstrated higher proficiency in responding to questions involving matching, multiple-choice, vocabulary selection, and grammar, compared to their performance in answering true/false questions, particularly where they faced challenges in error correction. Furthermore, the results suggested that learners encountered greater difficulty in responding to questions necessitating inference or reflective/evaluative thinking as opposed to those requiring information retrieval.

B. Learners' Proficiency in Inference-Based Questions and Grammar in English Language Assessment

Furthermore, the findings indicated that certain learners encountered challenges in deducing details from the descriptive text, although they could comprehend the chronological order of events in the narrative text. This disparity between the results of the first and second texts is attributed to the inference-based questions in the second text, which posed difficulties for a majority of the participants. The results of the first text were relatively better due to the absence of inferences that proved challenging for most participants. Grammar-related questions were evenly distributed across both texts, and participants demonstrated proficiency in answering them, securing full grades.

C. Assessing Proficiency in Written Expression and Its Multifaceted Components

Regarding written expression, its lowest score indicates that it is a skill demanding learners to articulate their thoughts and emotions with clarity and efficacy. This involves considering various components, such as organizing the text logically and coherently, employing language accurately, diversifying vocabulary to avoid repetition, and reviewing and editing the text post-completion to ensure the absence of spelling, grammatical, or punctuation errors**.**

3.3.9. Science Results of BE3 in both Public and Private Education

General results across education sectors

Science EB3 (skills)				
Statistics				
		Knowledge	Reasoning	Communication
Mean		13.18	9.89	13.43
Median		14.40	10.50	14.67
Std. Deviation		4.59	4.28	6.00
Minimum		0.00	0.00	0.00
Maximum		20.00	20.00	20.00
Percentiles	25	10.00	7.00	9.33
	50	14.40	10.50	14.67
	75	16.80	13.00	18.67

Table 48: Science- BE3- Skills- General

The table summarizes the results of an diagnostic science BE3 test on three categories: Knowledge, Reasoning, and Communication. Here's a breakdown of the key statistics:

A. Number of Students Tested (N):

- Valid Scores: 1434 students took the entire test (no missing data).
- Missing Scores: There were 18 students with missing data for all categories.

B. Overall Performance:

- **Knowledge:** Students scored the highest on average (mean) in Knowledge (13.18) compared to Reasoning (9.89) and Communication (13.43).
- **Median:** The middle score (50th percentile) follows the same trend with Knowledge (14.40) being the highest, followed by Communication (14.67) and Reasoning (10.50).

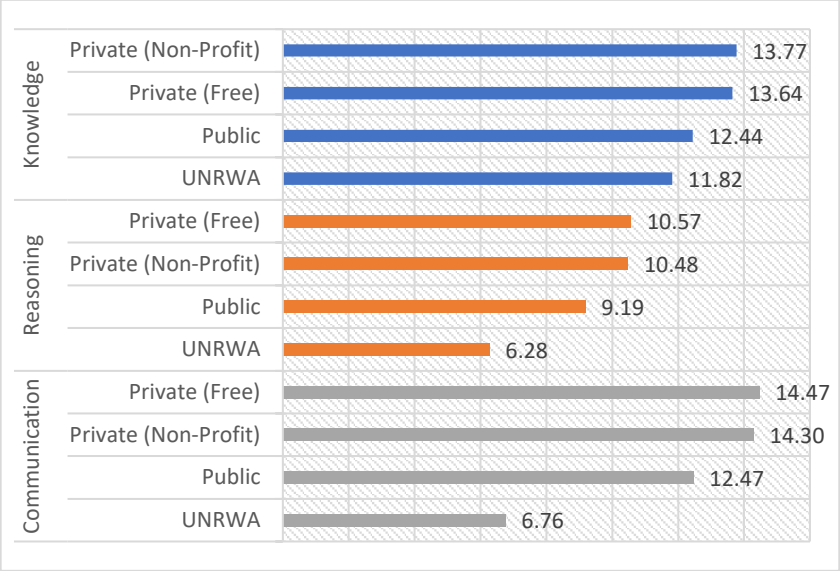


Figure 10: Science- BE3- Competencies

C. Distribution of Scores:

- **Standard Deviation:** The standard deviation for Communication (6.00) is higher than Knowledge (4.59) and Reasoning (4.28). This indicates a wider spread of scores in Communication; this means that some students scored significantly higher or lower than the average compared to the other categories.

- **Minimum and Maximum Scores:** The possible scores ranged from 0 (lowest) to 20 (highest) for all categories.

- **Percentiles:**

  - **25th percentile:** At least 25% of the students scored lower than 10.00 in Knowledge, 7.00 in Reasoning, and 9.33 in Communication.
  - **75th percentile:** At least 75% of the students scored lower than 16.80 in Knowledge, 13.00 in Reasoning, and 18.67 in Communication.

Upon comprehensive examination, the study encompassing both public and private sectors, with a sample covering all governorates, revealed the subsequent findings:

Science skills and school type

The outcomes reveal striking similarities in the performance between the free private sector (639 respondents) and the private sector (193 respondents), with both sectors outperforming in all three evaluated areas. Following closely, the public sector secures the third position with 573 participants. In contrast, learners from the UNRWA private sector (29 participants) demonstrate the lowest averages across the three school types.

It is noteworthy to consider the enrolment percentages reported in the statistical bulletin of the Educational Center for the academic year 2021-2022: 31.34% in the public sector, 12.15% in the private sector, 52.94% in the free private sector, and 3.57% in UNRWA. Despite these enrolment disparities, the UNRWA private sector stands out with 50% of the learners scoring below 6.50 in practicing scientific thinking and below 8.00 in scientific communication. In comparison, 50% of the learners in

the public sector scored below 9.50 in practicing scientific thinking, highlighting noteworthy performance gaps between educational sectors.

Science Results of BE3 in both Public and Private Education

Sector		Knowledge	Reasoning	Communication
UNRWA	N	29.00	29.00	29.00
	Mean	11.82	6.28	6.76
	Std. Deviation	4.31	4.00	5.90
	Median	12.80	6.50	8.00
	Minimum	6.80	1.00	0.00
	Maximum	19.20	16.00	16.00
Private (Free)	N	639.00	639.00	639.00
	Mean	13.77	10.48	14.30
	Std. Deviation	4.70	4.33	5.85
	Median	15.20	11.50	16.00
	Minimum	0.00	0.00	0.00
	Maximum	20.00	20.00	20.00
Private(Free)	N	193.00	193.00	193.00
	Mean	13.64	10.57	14.47
	Std. Deviation	3.84	3.66	5.33
	Median	14.40	11.00	16.00
	Minimum	3.60	0.00	0.00
	Maximum	19.20	18.50	20.00
Public	N	573.00	573.00	573.00
	Mean	12.44	9.19	12.47
	Std. Deviation	4.59	4.25	6.04
	Median	12.80	9.50	13.33
	Minimum	0.00	0.00	0.00
	Maximum	19.60	17.50	20.00
Total	N	1434.00	1434.00	1434.00

	Mean	13.18	9.89	13.43
	Std. Deviation	4.59	4.28	6.00
	Median	14.40	10.50	14.67
	Minimum	0.00	0.00	0.00
	Maximum	20.00	20.00	20.00

Table 49- Science- BE3- Skills- Education Sector

The table shows the results of a science test for students in BE3 across different educational sectors. The sectors are:

- UNRWA schools
- Private (Free) schools
- Private schools
- Public schools

The table is divided into three main sections: Knowledge, Reasoning, and Communication.

Overall Observations:

- **Science Knowledge:** On average (mean) students performed best in Science Knowledge across all sectors (Public: 12.44, Private:13.64, Private (Free): 13.77, UNRWA: 11.82).
- **Science Reasoning:** Private schools had the highest average score (10.48) in Science Reasoning, followed by Private (Free) schools (10.57) and Public schools (9.19). UNRWA schools had the lowest average score (6.28).
- **Science Communication:** Private schools again had the highest average score (14.30) in Science Communication, followed by Private (Free) schools (14.47) and Public schools (12.47). UNRWA schools had the lowest average score (6.76).

Looking deeper within each sector:

- UNRWA schools showed the lowest average scores in all categories (Knowledge, Reasoning, Communication) with the highest standard deviations (indicating a wider spread of scores).
- Private schools consistently had the highest average scores in all categories and a narrower spread of scores (except in Communication).
- Private (Free) schools: Scores were similar to the Private schools, but with slightly lower averages in Knowledge and Reasoning.
- Public schools: Scores fell between UNRWA and Private schools in all categories.

3.3.10. Science Results of BE6 in both Public and Private Education

General results

Science EB6 (skills)				
Statistics				
		knowledge	Reasoning	Communication
Mean		12.51	10.44	13.58
Median		13.00	10.55	14.67
Std. Deviation		4.60	4.48	5.63
Minimum		0.00	0.00	0.00
Maximum		20.00	20.00	20.00
Percentiles	25	8.67	7.27	9.33
	50	13.00	10.55	14.67
	75	16.00	13.82	20.00

Table 50: Science- BE6- Skills- General

The table shows the results of a science diagnostic test for a group of 1369 students (**N** = 1369). The test assessed three main categories: knowledge, reasoning, and communication.

- **Number of Students Tested:**
  - **Valid Scores:** 1369 students took the entire test (no missing data for these categories).
  - **Missing Scores:** There were 20 students with missing data in all categories.
- **Overall Performance:**
  - **Mean:** Students scored highest on average (mean) in Communication (13.58), followed by Knowledge (12.51) and Reasoning (10.44).
  - **Median:** The middle score (50th percentile) follows a similar pattern, with Communication (14.67) being the highest, followed by Knowledge (13.00) and Reasoning (10.55).
- **Distribution of Scores:**
  - **Standard Deviation:** The standard deviation is highest for Communication (5.63) compared to Knowledge (4.60) and Reasoning (4.48). This suggests a wider spread of scores in Communication, meaning some students scored significantly higher or lower than the average in this category compared to the others.

- **Minimum and Maximum Scores:** All categories had a possible score ranging from 0 (lowest) to 20 (highest).

➢ **Percentiles:**

- **25th percentile:** At least 25% of the students scored lower than 8.67 in Knowledge, 7.27 in Reasoning, and 9.33 in Communication.

- **75th percentile:** At least 75% of the students scored lower than 16.00 in Knowledge, 13.82 in Reasoning, and interestingly, 20.00 (the maximum score) in Communication. This percentile suggests that a significant portion of the students (more than 25%) scored very high in Communication.

General results across education sectors

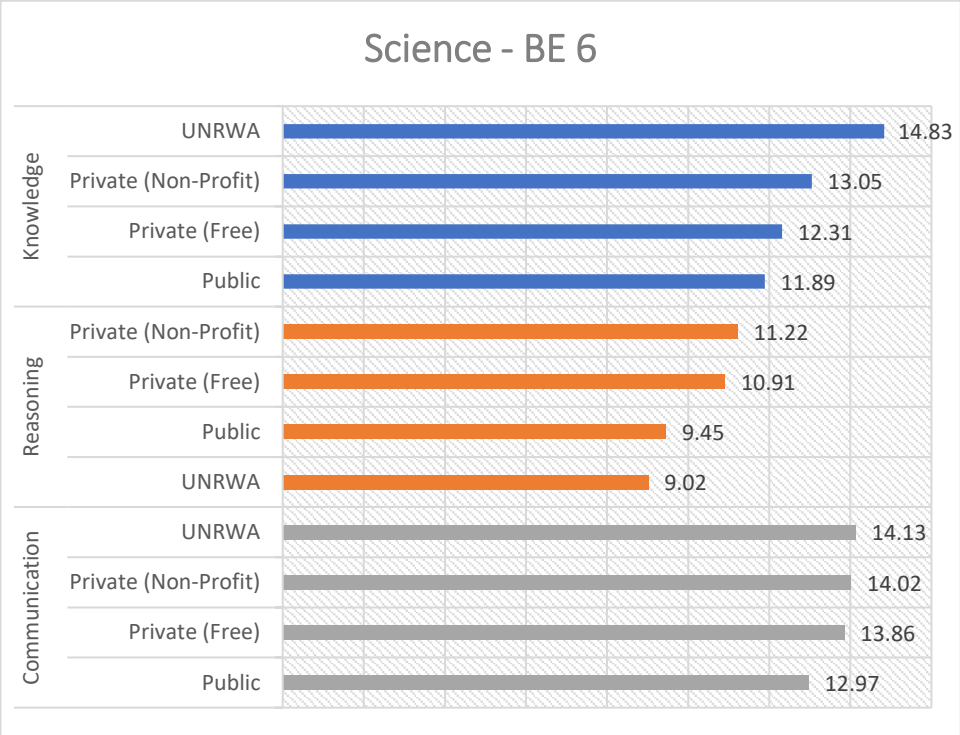


Figure 11: Science- BE6- Competencies

The results of BE6 reveal notable variations among educational sectors. In particular, the UNRWA private sector emerges as the top performer in mastering acquired knowledge and communication techniques, boasting the highest scores of 14.83 and 14.13, respectively. However, it is noteworthy that learners in this sector attain the lowest average in the area of scientific thinking practice, with a score of 9.02.

Conversely, the private free schools and private sectors demonstrate comparable performance across all three assessed areas. On the other hand, learners in public schools achieved the lowest scores in mastering acquired knowledge (11.89), and mastering communication techniques (12.97), and also exhibited a subpar performance in practicing scientific thinking (9.45).

Key Findings

Low critical thinking skills among Lebanese learners stem from insufficient training and limited resources, leading to concerns about prioritizing rote memorization over analysis. The "Results for Research" (R4R) study, involving 710 teachers from 146 schools, confirms this and highlights the need for high-level thinking skills development.

R4R's findings align with the World Bank symposium's discussions on learner performance and teacher needs, especially regarding efficient explanation tools and resources. The study also reveals consistent teaching practices that lack intellectual interaction and fail to promote higher-order thinking.

Governorate and environmental factors like teacher training, socioeconomic status, and social environment further impact achievement. Armed conflicts, often linked to lack of education, necessitate prioritizing these factors to prevent regional instability.

Educational sector disparities show that private schools outperformed public schools by an average of two academic years, with differences in learning materials and flexibility further widening the gap. A 2020 study emphasizes the need for reforms in budget allocation, teacher qualifications, and ensuring equal opportunities for all.

This analysis highlights the complex interplay of factors contributing to low critical thinking skills and educational disparities in Lebanon. Addressing these issues requires a comprehensive approach that focuses on teacher training, resource allocation, promoting higher-order thinking skills, and creating a more equitable educational landscape.

Science skills and school type

The table provides information about the results of a science diagnostic test in EB6 and mentions that 1,369 learners participated in the test to measure learning loss.

		Apply knowledge in similar situations	Connect knowledge to new situations	Practice scientific thinking	Master communication techniques
Mean		13.31	11.39	10.44	13.58
Std. Deviation		4.51	5.76	4.48	5.63
Coefficient of variation		33.92%	50.59%	42.95%	41.47%
Percentiles	**25**	10.29	6.40	7.27	9.33
	50	13.14	12.80	10.55	14.67
	75	17.14	16.80	13.82	20.00

Table 51: Science- BE6- Competencies

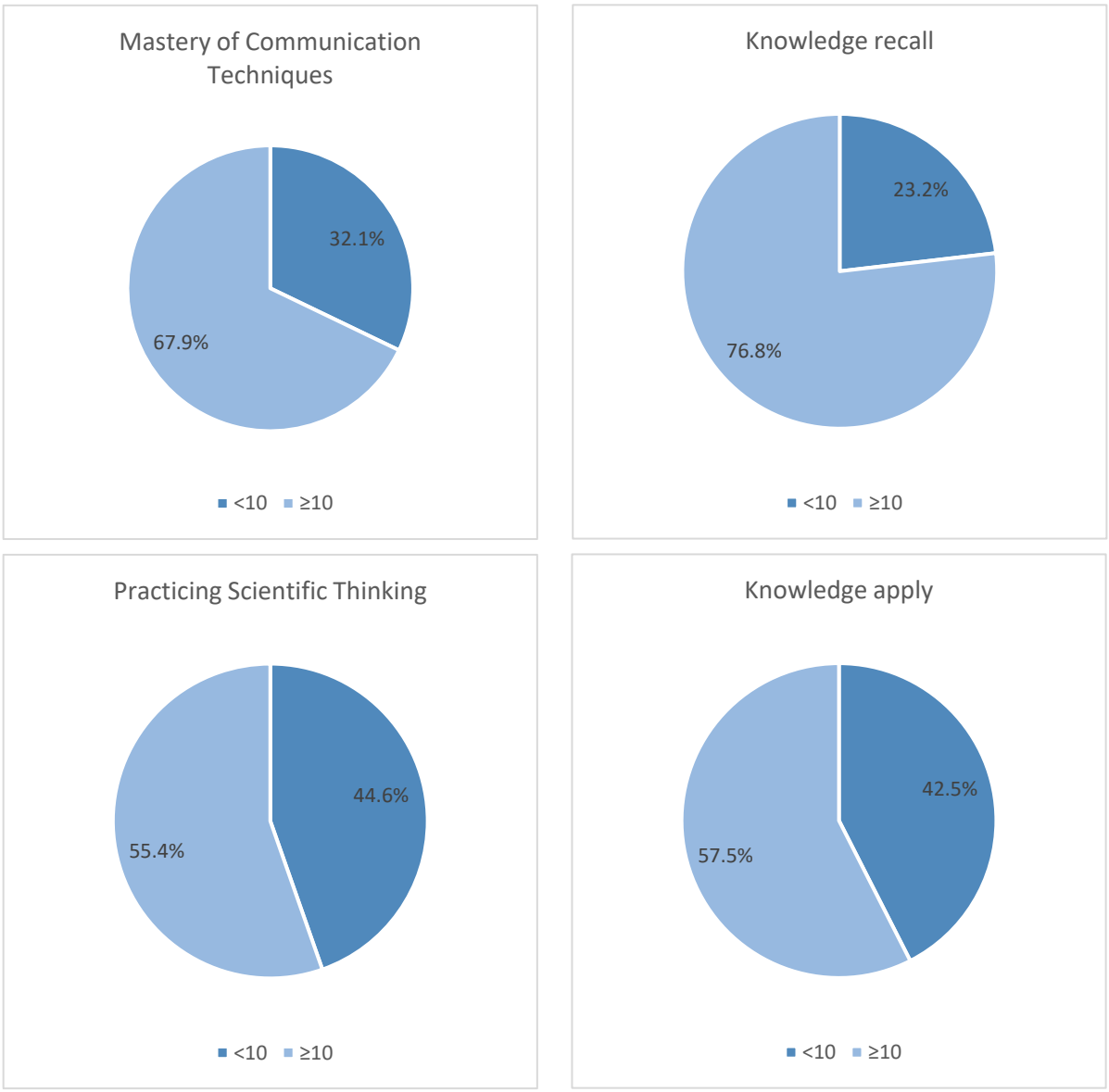


Figure 12- Science - BE6- Competencies

The analysis of the test results reveals varying success rates across distinct fields of cognitive skills among BE6 students. Notably, the highest success rate of 76.8% is in the retention of information, while the lowest success rate is recorded in the Mastery of Acquired Knowledge at 57.5%. Furthermore, the success rate in scientific communication stands at 67.9%. A remarkable finding is the notably lower success rate of 55.4% in the fields of analysis and scientific practice.

Looking deeply into the detailed statistical data provided in Table 51, the average score for learners in the fields of acquired knowledge is 13.31 for questions about information retention. Conversely, questions requiring the integration of knowledge into novel situations yield an average score of 11.39. The average score for knowledge mastery is 12.51, and in the field of communication techniques, the average score reaches 13.58.

Significant variations are observed in the field of practicing scientific thinking, where the average score notably declines to 10.44. It is noteworthy that 25% of the learners scored between 0 and 7.27, indicating a considerable deviation from the required average. A more substantial decline is evident in 50% of the learners who scored between 0 and 10.55, with the median score closely aligning with this lower range. The top 75% percentile in this field registers the lowest average, standing at 13.82, further underscoring the challenges faced by learners in this particular area.

Science Results of BE6 in both Public and Private Education

Sector		Knowledge	Reasoning	Communication
UNRWA	N	20.00	20.00	20.00
	Mean	14.83	9.02	14.13
	Std. Deviation	2.65	2.81	4.55
	Median	15.67	8.73	14.67
	Minimum	9.00	4.00	9.33
	Maximum	18.67	13.09	20.00
Private	N	605.00	605.00	605.00
	Mean	13.05	11.22	14.02
	Std. Deviation	4.37	4.25	5.34
	Median	14.00	12.00	14.67
	Minimum	0.00	0.00	0.00
	Maximum	20.00	18.91	20.00
Private(Free)	N	198.00	198.00	198.00
	Mean	12.31	10.91	13.86
	Std. Deviation	4.95	4.85	4.84
	Median	13.00	11.27	14.67
	Minimum	0.33	0.00	0.00
	Maximum	20.00	20.00	20.00
Public	N	546.00	546.00	546.00
	Mean	11.89	9.45	12.97
	Std. Deviation	4.68	4.46	6.18
	Median	12.00	9.82	14.67
	Minimum	0.33	0.00	0.00
	Maximum	20.00	18.55	20.00
Total	N	1369.00	1369.00	1369.00
	Mean	12.51	10.44	13.58

	Std. Deviation	4.60	4.48	5.63
	Median	13.00	10.55	14.67
	Minimum	0.00	0.00	0.00
	Maximum	20.00	20.00	20.00

Table 52: Science - BE6- Skills- Education Sectors

Table 52 shows the results of the science diagnostic test for students in BE6 across different educational sectors in a region. The sectors are the same as the previous table:

- UNRWA schools
- Private schools
- Private (free) schools
- Public schools

The layout and information provided are similar to the previous table, with three main sections (Knowledge, Reasoning, Communication) within the educational sectors.

Overall Performance:

- **Science Knowledge:** UNRWA schools had the highest average score (14.83) in Science Knowledge, followed by Private Schools (13.05), Public (11.89), and Free Private schools (12.31).

- **Science Reasoning:** Private schools had the highest average score (11.22) in Science Reasoning, followed by the Free Private schools (10.91), Public schools (9.45), and UNRWA schools (9.02).

- **Science Communication:** All sectors had similar average scores in Science Communication (around 14), with a slight edge for UNRWA (14.13) and Private schools (14.02) compared to Public (12.97) and Free Private schools (13.86).

Looking deeper within each sector:

- UNRWA schools showed the highest average score in Knowledge but the lowest in Reasoning. They also had a narrower spread of scores (indicated by lower standard deviations) compared to the previous table (BE3).

- Private schools maintained high average scores in Knowledge and Reasoning, but Communication scores were closer to other sectors. They also had a wider spread of scores compared to BE3 results.

- Free Private Free schools scores were similar to public schools with a slight edge in Knowledge for Public schools. The spread of scores was wider compared to BE3 results.

- Public schools scores were lower than UNRWA schools in Knowledge but higher in Reasoning. Communication scores were similar to UNRWA and Private schools. The spread of scores was wider compared to BE3 results.

Interesting Differences from BE3 Results:

- UNRWA schools showed significant improvement in average Knowledge scores compared to BE3.
- The spread of scores became narrower in UNRWA for all categories compared to BE3.
- The gap in average scores between Public and Private schools seems to be smaller in BE6 compared to BE3.

3.4- Comparative analysis across governorates

3.4.1. French Language- Comparative analysis across governorates

Sector_Public_Private			Governorate									Total
			Bekaa	South	North	Nabatieh	Baalbek-Hermel	Beirut	Mount Lebanon (Suburbs)	Mount Lebanon (Excluding ...)	Akkar	
Public	French	<10	20.0%	100.0%	51.8%	82.4%	19.4%	80.0%	35.0%	37.8%	76.8%	**54.3%**
		>=10	80.0%		48.2%	17.6%	80.6%	20.0%	65.0%	62.2%	23.2%	45.7%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Private	French	<10		40.9%	42.0%	68.8%	32.0%	4.0%	1.5%	9.1%	40.4%	**23.5%**
		>=10	100.0%	59.1%	58.0%	31.3%	68.0%	96.0%	98.5%	90.9%	59.6%	76.5%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	French	<10	8.2%	59.4%	48.0%	75.8%	25.0%	25.7%	9.3%	19.4%	61.9%	38.1%
		>=10	91.8%	40.6%	52.0%	24.2%	75.0%	74.3%	90.7%	80.6%	38.1%	61.9%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 53: French Language – Governorates

Upon revisiting the results concerning the governorates, the following observations emerged:

A. Public Sector Dynamics: Disparities and Trends in Governorate-Level Academic Performance

In the public sector, the most significant drop in points, a staggering 100%, was witnessed in the South Governorate, where the French language instruction was absent in BE3. This implies that BE6 learners in the South Governorate's public sector moved from private to public schools. This shift suggests a

trend of students transitioning from private to public schools, accompanied by a decline in academic performance and multifaceted learning setbacks. These challenges prompted learners to change schools at a young age or join the educational system at a more advanced stage, raising questions about the validity of automatic promotion.

B. Governorate-Specific Analysis: Notable Declines and Varied Results in Public Sector Scores

Following this trend, the drop in scores was also noted in other governorates: Nabatieh Governorate at 82.4%, Beirut Governorate at 80%, Akkar Governorate at 76.8%, and the North at 51.8%. Mount Lebanon Governorate (excluding suburbs) experienced a drop of 37.8%, while the suburbs of Mount Lebanon saw a 35% decline. Bekaa Governorate demonstrated a 20% drop, while Baalbek-Hermel recorded the best result, with a score of less than 10%, specifically at 19.4%. This indicates commendable academic performance in BE6 in Bekaa and Baalbek, possibly influenced by a shift to English as the primary language of instruction in many schools. The study's smaller sample size may have contributed to better results, or schools maintaining French as their primary language might have prioritized its instruction with more committed learners.

C. Private Sector Contrasts: Governorate-Level Examination of Academic Performance

In contrast, the private sector displayed varying results, with Nabatieh Governorate showing the highest drop at 68.8%, while other governorates exhibited favorable outcomes, surpassing their BEe results. Particularly noteworthy is the 100% success rate in the Bekaa for the private sector.

D. Comparative Overview: Public vs. Private Sector Performance at the Governorate Level

In summary, the overall percentage of low points in the public sector was 54.3%, significantly higher than the private sector's 23.5%.

The table illustrates the percentage of weakness across governorates by sector:

	Bekaa	Baalbek-Hermel	Nabatieh	Mount Lebanon (Suburbs)	Mount Lebanon (Excluding suburbs)	Akkar	South	North	Beirut
Public	20%	19.4%	82.4%	35%	37.8%	76.8%	100%	51.8%	80%
Private	0%	32%	68.8%	1.5%	9.1%	40.4%	40.9%	42%	4%

Table 54: French Language – Governorates- Weakness

Key findings

Disparities in Academic Achievement: A Comparative Analysis of Public and Private Sectors.

The analysis above underscores a substantial contrast between the public and private sectors, with the private sector registering the lowest percentage of losses. A comparison of results between BE3and BE6 in the public sector distinctly reveals an upswing in achievement levels in BE 6. This improvement may be attributed to compensating for the significant loss experienced in BE 3, where the impact of the

COVID 19 pandemic and strikes led to a setback of four or five years in educational attainment. The adverse effects on fundamental education principles indicate the importance and urgency of this study. Furthermore, it raises concerns about the repercussions of adopting automatic promotion, especially when learners in public schools reach the sixth and third BEs with severe weaknesses in the French language.

It is noteworthy that the absence of diagnostic assessment in the verbal domain is acknowledged, primarily due to logistical challenges in implementation.

3.4.2. French language - 'Understanding and Analyzing Narrative Text': Comparative Analysis in Different Sectors and Governorates

A. In the Public Sector

The results within the public sector exhibited notable variations. Examining the South Governorate, which lacks French language instruction in BE3 and constitutes 80% of the region, reveals a significant weakness in BE6—an outcome consistent with previous discussions.

Contrastingly, Nabatieh Governorate, which initially achieved a 100% success rate in the BE3's narrative text, experienced a decline in BE6, with points falling below 10 by 58.8%. Similarly, Akkar Governorate saw a decline of 58.5%. Despite this drop, both governorates exhibited improved results compared to the results of BE3.

Excluding Nabatieh, the South, and Akkar, other governorates demonstrated a notable absence of weaknesses, potentially linked to the relationship between lower scores and social and living standards. The percentage of low scores gradually decreased in the remaining governorates: Beirut at 40%, the North at 34.5%, Mount Lebanon (excluding suburbs) at 24.3%, Bekaa at 20%, and Mount Lebanon (suburbs) at 5%.

B. In the private sector

Weakness was observed solely in Nabatieh Governorate, amounting to 50%. Notably, the private sector excelled in the comprehension and analysis of narrative texts between the third and sixth BEs, emerging as one of the top-performing sectors. Weaknesses were only evident in the South Governorate for BE3 and in Nabatieh Governorate for BE6.

The table below presents the percentages of weaknesses across governorates, specifically in the domain of narrative text analysis, categorized by the education sector.

	Bekaa	Baalbek-Hermel	Nabatieh	Mount Lebanon (Suburbs)	Mount Lebanon (Excluding suburbs)	Akkar	South	North	Beirut
Public	20%	3.2%	58.8%	5%	24.3%	58.8%	80%	34.5%	40%
Private	0%	0%	50%	1.5%	4.5%	31.6%	31.8%	31.4%	4%

Table 55: French Language- Governorates- Weakness – Narrative text analysis

The table serves as a comprehensive depiction of learners' proficiency in comprehending, understanding, and analyzing narrative patterns. Notably, it highlights a distinct weakness in the South

Governorate within the public sector. Conversely, the private sector demonstrated notable success in comprehending the first text, showcasing exceptional outcomes. Particularly noteworthy are the Bekaa and Baalbek governorates, where no points fell below ten, underscoring good performance. Additionally, both the Mount Lebanon and Beirut governorates exhibited a minimal number of low points, aligning with previous observations.

Of particular interest is the observed emphasis on the private sector in Beirut Governorate, because of the impact of social and living standards on educational outcomes in these regions. The success of the private sector in these areas may be attributed to a higher concentration of missionary schools or institutions with international affiliations, showcasing a distinct commitment to language education.

3.4.3. French language - 'Understanding and Analyzing Descriptive Text' Comparative analysis in Different Sectors and Governorates

The table below provides a detailed examination of the percentage of loss within governorates, specifically in the domain of descriptive text analysis, categorized by the education sector.

	Bekaa	Baalbek-Hermel	Nabatieh	Mount Lebanon (Suburbs)	Mount Lebanon (Excluding suburbs)	Akkar	South	North	Beirut
Public	15%	51.6%	82.4%	65%	62.2%	63.4%	100%	51.8%	90%
Private	0%	40%	68.8%	10.6%	13.6%	42.1%	54.5%	55.1%	28%

Table 56: French Language- Governorates- Descriptive text

A. In the public sector

The table presents a detailed analysis of the percentage of understanding and analysis in the public and private sectors, focusing on the transition from the first text to the second text. The findings illuminate a notable decline in proficiency within the public sector, underscoring the imperative to prioritize and enhance instruction in the descriptive style.

Persistent weaknesses are evident, particularly in the South Governorate, where a strikingly low score of 100% signifies a critical need for targeted interventions. Following closely are Beirut Governorate with a score of 90% and Nabatieh Governorate with a score of 82.4%. These three governorates consistently display weaknesses across various areas and BEs within the public sector.

Although other governorates exhibited weaknesses, the Bekaa Governorate stood out with relatively lower rates. Additionally, sporadic losses were observed in the Baalbek-Hermel Governorate.

As a result, concerns arise about the potential worsening of the public sector, given the observed economic challenges faced by teachers and learners, coupled with a lagging political landscape incapable of resolving these issues.

B. In the private sector

The private sector consistently demonstrated success, barring the South Governorate, which consistently reported a high rate of weakness. Following suit were Nabatieh and the North Governorate,

albeit with less frequency. The overall comparison between the public and private sectors highlighted a substantial disparity, with the private sector exhibiting a clear advancement.

C. Key Findings

These results suggest that learners find it comparatively easier to comprehend narrative texts and infer their events and components than the descriptive text approach. The examination of linguistic grammar questions in both texts indicates that linguistic rules did not pose a significant obstacle to answering, potentially contributing to the higher levels of achievement observed in the first text.

3.4.4. French language - 'writing proficiency': Comparative Analysis in Different Sectors and Governorates

A. Public sector

In examining written expression proficiency within the public sector, it becomes evident that this skill, operating at the linguistic level, demands the articulation of ideas while considering various components, such as adherence to instructions, logical organization of text, and the use of appropriate vocabulary in a linguistically correct manner.

Although the Bekaa Governorate demonstrated advancements across various areas and BEs, a decline in written expression was noted, a trend observed in BE3 as well. The South Governorate, previously discussed, exhibited severe weaknesses in both public and private sectors concerning written expression. Other governorates experienced BE declines, with Beirut Governorate facing an 80% decrease, the South Governorate with a 100% decline, Nabatieh Governorate at 94.1%, Akkar at 90.2%, the North at 86.4%, Mount Lebanon (suburbs) at 60%, and Mount Lebanon (excluding suburbs) at 56.8%. Notably, Baalbek-Hermel Governorate recorded a 45.2% decline, demonstrating remarkable progress compared to the public sector.

B. Private Sector

In the private sector, weaknesses in written expression were evident, notably in the Baalbek-Hermel Governorate, where the public sector outperformed with a 45.2% decline compared to the private sector's 60% low grades. This discrepancy may be attributed to the limited presence of missionary schools, the absence of schools aligned with international standards, and private schools primarily focusing on the Arabic language.

The South Governorate, experiencing low proficiency not only in the public sector but also in the private sector, reflects challenges in school quality, societal goals, and a political environment lacking in security and psychological stability. Conversely, the Bekaa Governorate showcased a 0% occurrence of low scores in the private sector, indicating a higher level compared to weaknesses in the public sector. The governorates of Mount Lebanon, including Beirut Governorate, also demonstrated favorable results, potentially linked to the prevalence of compatible and missionary schools, as well as economic and social standards of living.

While Mount Lebanon (suburbs) achieved acceptable results in written expression, other governorates, such as Akkar (75%), the South (72.7%), the North (65.7%), Beirut (60%), and Mount Lebanon (suburbs) (52.3%), displayed weaknesses consistent with their performance in other fields. The presence of low scores, possibly influenced by the absence of focused competition on written expression, emphasizes the need for targeted interventions in this critical linguistic skill.

Sector_Public_Private			Governorate									Total
			Bekaa	South	North	Nabatieh	Baalbek-Hermel	Beirut	Mount Lebanon (Suburbs)	Mount Lebanon (Excluding suburbs)	Akkar	
Public	Production écrite	<10	50.0%		98.2%	100.0%	65.7%	100.0%	65.0%	60.7%	85.4%	82.6%
		≥10	50.0%		1.8%		34.3%		35.0%	39.3%	14.6%	17.4%
	Total		100.0%		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Private	Production écrite	<10	19.0%	72.7%	65.7%	40.0%	80.0%	60.0%	52.3%	18.8%	75.0%	53.2%
		≥10	81.0%	27.3%	34.3%	60.0%	20.0%	40.0%	47.7%	81.3%	25.0%	46.8%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	Production écrite	<10	34.1%	72.7%	85.6%	52.0%	71.7%	71.4%	54.6%	31.5%	81.6%	66.5%
		≥10	65.9%	27.3%	14.4%	48.0%	28.3%	28.6%	45.4%	68.5%	18.4%	33.5%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 57: French Language- Education sectors- Governorates

Table 58 presents a detailed analysis of the percentage of weaknesses in Written Expression across governorates, categorized by the education sector.

	Bekaa	Baalbek-Hermel	Nabatieh	Mount Lebanon (Suburbs)	Mount Lebanon (Excluding suburbs)	Akkar	South	North	Beirut
Public	60%	45.2%	94.1%	60%	56.8%	90.2%	100%	86.4%	80%
Private	0%	60%	62.5%	10.6%	12.1%	43.9%	99.9%	58.6%	12%

Table 58: French Language- Governorates- Writing- Weakness

The analysis of the results revealed a substantial disparity between the outcomes of understanding and analysis compared to those of written expression. Notably, linguistic skills were not effectively employed in the realm of expression, underscoring the urgent need for compensatory measures in written expression. Such intervention becomes particularly critical under special conditions. Therefore,

it is imperative to engage in targeted practices involving the utilization of vocabulary and grammar to compose meaningful sentences, addressing the identified gap in linguistic expression skills.

3.4.5. Mathematics - comparative analysis across governorates

Tables 57 and 58 present the results of diagnostic math tests in three domains for the public and private sectors respectively, while Table 59 combines the data from both tables for a comprehensive overview.

Governate		Mathematics	Arithmetic and Algebra	Geometry	Measurement
Bekaa	Mean	6.93	9.09	3.33	4.7
	Median	5.47	8.36	0.4	2.86
South	Mean	7.22	8.97	4.03	5.38
	Median	6.63	9.09	2.8	2.86
North	Mean	6.45	8.41	3.03	4.36
	Median	6.16	8	1.8	2.86
Nabatieh	Mean	7.92	9.31	5.28	6.64
	Median	5.79	8.18	2	6.29
Baalbek-Hermel	Mean	12.43	12.74	11.43	11.91
	Median	14.37	13.91	14	12.86
Beirut	Mean	5.09	7.89	0.72	1.81
	Median	5.05	8.45	0.8	0
Mount Lebanon (Suburbs)	Mean	10.75	12.01	8.08	9.51
	Median	10.63	11.82	7.6	10.86
Mount Lebanon (Excluding suburbs)	Mean	8.5	11.23	3.5	6.1
	Median	7.26	10.73	1	4.29
Akkar	Mean	6.83	7.95	5.1	5.07
	Median	6.37	7.09	4.2	3.14
Total	Mean	7.78	9.52	4.68	5.92

	Median	6.74	8.91	2.4	4

Table 59: Mathematics- Governorates- Branches- Public sector

Governate		**Mathematics**	**Arithmetic and Algebra**	**Geometry**	**Measurement**
Bekaa	**Mean**	11.76	12.28	10.09	12.2
	Median	14.84	14.91	6.4	17.14
South	**Mean**	9.75	11.12	6.73	8.77
	Median	10	12	4.2	8.29
North	**Mean**	8.57	10.39	5.09	6.81
	Median	7.89	9.82	4.4	4.57
Nabatieh	**Mean**	6.56	7.09	5.57	5.69
	Median	4.63	5.27	4	4
Baalbek-Hermel	**Mean**	13.22	13.64	12.07	12.86
	Median	13.16	13.36	13	14.29
Beirut	**Mean**	16.05	16.64	14.23	15.65
	Median	17.16	18.36	14	16.86
Mount Lebanon (Suburbs)	**Mean**	10.37	11.52	7.81	9.65
	Median	9.37	10.91	5.2	9.14
Mount Lebanon (Excluding suburbs)	**Mean**	10.15	11.81	6.49	9.08
	Median	9.21	12.73	4.8	8.57
Akkar	**Mean**	10.53	12.23	6.91	9.32
	Median	9.47	12.45	4.8	9.14
Total	**Mean**	10.59	11.77	7.98	9.8
	Median	10.42	12.18	6	9.14

Table 60: Mathematics- Governorates- Private sector

		Governorate									Total
		Bekaa	South	North	Nabatieh	Baalbek-Hermel	Beirut	Mount Lebanon (Suburbs)	Mount Lebanon (Excluding	Akkar	
Public	<10	84.20%	74.60%	86.40%	71.20%	34.80%	100.00%	37.80%	75.60%	84.50%	74.80%
	≥10	15.80%	25.40%	13.60%	28.80%	65.20%		62.20%	24.40%	15.50%	25.20%
	Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Private	<10		36.70%	48.00%	57.30%	83.70%	20.00%	10.30%	52.70%	52.60%	53.30%
	≥10		63.30%	52.00%	42.70%	16.30%	80.00%	89.70%	47.30%	47.40%	46.70%
	Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Math	<10		56.60%	57.80%	73.40%	76.90%	26.40%	40.90%	50.40%	61.90%	71.50%
	≥10		43.40%	42.20%	26.60%	23.10%	73.60%	59.10%	49.60%	38.10%	28.50%
	Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 61: Mathematics- Governorates- Success rates

The analysis of these tables revealed the following:

- **Public schools consistently show lower proficiency rates compared to private schools.** This trend holds true across all governorates and for both educational attainment levels and subjects.
- **Large disparities exist in public school proficiency rates across governorates.** Beirut stood out with the highest overall public-school proficiency, followed by Mount Lebanon (excluding suburbs). Conversely, Baalbek-Hermel and Akkar displayed the lowest rates.
- **Private school proficiency rates also varied across governorates, but the range was smaller than in public schools.** Beirut and Mount Lebanon (excluding suburbs) again had the highest rates, while Akkar and Bekaa record the lowest.
- **There's a general trend of higher proficiency with more years of schooling.** This applies to both public and private schools, highlighting the importance of sustained education.
- **The gap between public and private school proficiency tends to narrow for students with at least 10 years of education.** This could suggest effectiveness in specific private schools or challenges faced by public schools in retaining and educating students for longer periods.
- **Math proficiency showed similar patterns to overall proficiency.** Private schools outperformed public schools, and proficiency increased with more years of schooling. However, governorate-level variations were slightly different, with North and Nabatieh recording higher public school Math proficiency compared to other subjects.

3.4.6. Mathematics - comparative analysis across governorates- Competencies

Sector			Governorate									Total
			Bekaa	South	North	Nabatieh	Baalbek-Hermel	Beirut	Mount Lebanon (Suburbs)	Mount Lebanon (Excluding	Akkar	
Public	Arithmetic and Algebra	<10	64.9%	59.3%	73.6%	66.1%	32.6%	80.0%	35.1%	41.0%	77.4%	60.9%
		≥10	35.1%	40.7%	26.4%	33.9%	67.4%	20.0%	64.9%	59.0%	22.6%	39.1%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Private	Arithmetic and Algebra	<10	35.4%	34.3%	50.6%	81.6%	13.3%	8.6%	44.9%	37.1%	40.0%	39.1%
		≥10	64.6%	65.7%	49.4%	18.4%	86.7%	91.4%	55.1%	62.9%	60.0%	60.9%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	Arithmetic and Algebra	<10	47.8%	43.5%	63.3%	73.1%	21.7%	33.0%	43.4%	38.7%	61.8%	48.0%
		≥10	52.2%	56.5%	36.7%	26.9%	78.3%	67.0%	56.6%	61.3%	38.2%	52.0%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 62- Mathematics – Governorates- Numbers and calculations

Sector			Governorates								Total
			Bekaa	South	North	Nabatieh	Baalbek-Hermel	Beirut	Mount Lebanon (Suburbs)	Mount Lebanon (Excluding suburbs)	Akkar	
Public	Geometry	<10	86.0%	83.1%	92.7%	78.0%	34.8%	100.0%	64.9%	85.9%	88.1%	81.6%
		≥10	14.0%	16.9%	7.3%	22.0%	65.2%		35.1%	14.1%	11.9%	18.4%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Private	Geometry	<10	51.9%	70.6%	84.3%	85.7%	25.0%	27.6%	60.9%	68.1%	70.0%	62.0%
		≥10	48.1%	29.4%	15.7%	14.3%	75.0%	72.4%	39.1%	31.9%	30.0%	38.0%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	Geometry	<10	66.2%	75.2%	88.9%	81.5%	29.2%	52.3%	61.5%	75.3%	80.6%	69.9%
		≥10	33.8%	24.8%	11.1%	18.5%	70.8%	47.7%	38.5%	24.7%	19.4%	30.1%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 63- Mathematics- Governorates- Geometry

Sector			Governorate									Total
			Bekaa	South	North	Nabatieh	Baalbek-Hermel	Beirut	Mount Lebanon (Suburbs)	Mount Lebanon (Excluding suburbs)	Akkar	
Public	Measurement	<10	86.0%	76.3%	86.4%	78.0%	37.0%	100.0%	43.2%	80.8%	83.3%	77.0%
		≥10	14.0%	23.7%	13.6%	22.0%	63.0%		56.8%	19.2%	16.7%	23.0%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Private	Measurement	<10	38.0%	64.7%	70.8%	85.7%	28.3%	12.1%	54.1%	57.8%	55.0%	53.3%
		≥10	62.0%	35.3%	29.2%	14.3%	71.7%	87.9%	45.9%	42.2%	45.0%	46.7%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	Measurement	<10	58.1%	68.9%	79.4%	81.5%	32.1%	42.0%	52.5%	67.0%	71.5%	62.9%
		≥10	41.9%	31.1%	20.6%	18.5%	67.9%	58.0%	47.5%	33.0%	28.5%	37.1%
	Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 64- Mathematics- Governorates- Success rate

The analysis of the above tables revealed the following:

A. Bekaa Governate:

In the private sector, out of 79 mathematics tests, the success rate stood at 63.3%. Conversely, in the public sector, with 57 tests conducted, the success rate was 15.8%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** In the private sector, the pass rate was 64.6%, while the public sector exhibited a lower pass rate of 35.1%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 14.9 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 8.36 out of 20.

- **Geometry:** In the private sector, the passing rate was 48.1%, while the public sector exhibited a lower passing rate of 14%. A closer look at the scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 6 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 0.4 out of 20.

- **Measurement:** In the private sector, the pass rate was 62%, while the public sector exhibited a lower passing rate of 14%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 17.14 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 2.85 out of 20.

B. South Governate:

In the private sector, out of 102 mathematics tests, the success rate stood at 52%. Conversely, in the public sector, with 59 tests conducted, the success rate was 25.4%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** In the private sector, the passing rate was 65.7%, while the public sector exhibited a lower passing rate of 40.7%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 12 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 9.09 out of 20.

- **Geometry:** In the private sector, the pass rate was 29.4%, while the public sector exhibited a lower passing rate of 16.9%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 4.2 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 2.8 out of 20.

- **Measurement:** In the private sector, the passing rate was 35.3%, while the public sector exhibited a lower passing rate of 23.7%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 8.28 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 2.85 out of 20.

C. North Governate:

In the private sector, out of 89 mathematics tests, the success rate stood at 42.7%. Conversely, in the public sector, with 110 tests conducted, the success rate was 13.6%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** In the private sector, the passing rate was 49.4%, while the public sector exhibited a lower passing rate of 26.4%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 9.81 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 8 out of 20.

- **Geometry:** In the private sector, the passing rate was 15.7%, while the public sector exhibited a lower passing rate of 7.3%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 4.4 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 1.8 out of 20.

- **Measurement:** In the private sector, the passing rate was 29.2%, while the public sector exhibited a lower pass rate of 13.6%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 4.57 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 2.85 out of 20.

D. Nabatieh Governate:

In the private sector, out of 49 mathematics tests, the success rate stood at 16.3%. Conversely, in the public sector, with 59 tests conducted, the success rate was 28.8%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** In the private sector, the passing rate was 18.4%, while the public sector exhibited a higher passing rate of 33.9%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 5.27 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 8.18 out of 20.

- **Geometry:** In the private sector, the passing rate was 14.3%, while the public sector exhibited a higher passing rate of 22%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 4 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 2 out of 20.

- **Measurement:** In the private sector, the passing rate was 14.3%, while the public sector exhibited a higher passing rate of 22%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 4 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 6.28 out of 20.

E. Baalbek-Hermel Governate:

In the private sector, out of 60 mathematics diagnostic tests, the success rate stood at 80%. Conversely, in the public sector, with 46 tests conducted, the success rate was 65.2%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** In the private sector, the passing rate was 86.7%, while the public sector exhibited a lower passing rate of 67.4%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 13.36 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 13.9 out of 20.

- **Geometry:** In the private sector, the passing rate was 75%, while the public sector exhibited a lower passing rate of 65.2%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 13 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 14 out of 20.

- **Measurement:** In the private sector, the passing rate was 71.7%, while the public sector exhibited a lower passing rate of 63%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 14.28 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 12.85 out of 20.

F. Beirut Governate:

In the private sector, out of 58 mathematics tests, the success rate stood at 89.7%. Conversely, in the public sector, with 30 tests conducted, the success rate was 0%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** In the private sector, the passing rate was 91.4%, while the public sector exhibited a lower passing rate of 20%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 18.36 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 8.45 out of 20.

- **Geometry:** In the private sector, the passing rate was 72.4%, while the public sector exhibited 0%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 14 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 0.8 out of 20.

- **Measurement:** In the private sector, the pass rate was 87.9%, while the public sector exhibited 0%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 16.85 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 0 out of 20.

G. Mount Lebanon (Suburbs) Governate:

In the private sector, out of 207 mathematics diagnostic tests, the success rate stood at 47.3%. Conversely, in the public sector, with 37 tests conducted, the success rate was 62.2%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** In the private sector, the passing rate was 55.1%, while the public sector exhibited a higher pass rate of 64.9%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 10.9 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 11.81 out of 20.

- **Geometry:** In the private sector, the passing rate was 39.1%, while the public sector exhibited a lower passing rate of 35.1%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 5.2 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 7.6 out of 20.

- **Measurement:** In the private sector, the passing rate was 45.9%, while the public sector exhibited a higher passing rate of 56.8%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 9.14 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 10.85 out of 20.

H. Mount Lebanon (Excluding suburbs) Governate:

In the private sector, out of 116 mathematics diagnostic tests, the success rate stood at 47.4%. Conversely, in the public sector, with 78 tests conducted, the success rate was 24.4%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** In the private sector, the passing rate was 62.9%, while the public sector exhibited a lower passing rate of 59%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 12.72 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 10.72 out of 20.

- **Geometry:** In the private sector, the passing rate was 31.9%, while the public sector exhibited a lower passing rate of 14.1%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 4.8 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 1 out of 20.

- **Measurement:** In the private sector, the passing rate was 42.2%, while the public sector exhibited a lower passing rate of 19.2%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 8.57 out of 20. In contrast, in the public sector, approximately 50% of lthe earners secured scores between 0 and 4.28 out of 20.

I. Akkar Governate:

In the private sector, out of 60 mathematics diagnostic tests, the success rate stood at 46.7%. Conversely, in the public sector, with 84 tests conducted, the success rate was 15.5%. For the competencies, the success rate was as follows:

- **Arithmetic and Algebra:** In the private sector, the passing rate was 60%, while the public sector exhibited a lower passing rate of 22.6%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 12.45 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 7.09 out of 20.

- **Geometry:** In the private sector, the passing rate was 30%, while the public sector exhibited a lower passing rate of 11.9%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 4.8 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 4.2 out of 20.

- **Measurement:** In the private sector, the passing rate was 45%, while the public sector exhibited a lower passing rate of 16.7%. A closer look at scores reveals that approximately 50% of the learners in the private sector achieved scores between 0 and 9.14 out of 20. In contrast, in the public sector, approximately 50% of the learners secured scores between 0 and 3.14 out of 20.

Key findings:

It is imperative to note that the principles and recommendations outlined in the preceding stages remain applicable to subsequent stages. However, it is essential to highlight that the study did not encompass all students across all stages. Consequently, we strongly advise teachers in these stages to revisit and reinforce the competencies and skills from the previous year that are directly interconnected with the competencies and skills integral to the current academic year.

3.4.7. English Language - Comparative analysis across governorates

The table below presents the outcomes of the diagnostic test for the English language in the BE3 across the Lebanese governorates. The average scores for the learners were as follows:

Bekaa Governate	9.93%
South Governate	13.13%

North Governate	12.17%
Nabatieh Governate	11.74%
Baalbek-Hermel Governate	14.75%
Beirut Governate	11.04%
Mount Lebanon Governate	Between 11.34% and 11.54%
Akkar Governate	13.60%

Governate		English Language	Phonological Awareness	Reading comprehension (Text 1)	Reading comprehension (Text 2)	Writing
Bekaa	**Mean**	9.93	12.72	10.02	10.35	8.01
	Median	9.71	14	9	11	8
South	**Mean**	13.13	14.45	12.42	14.21	12.08
	Median	14	16	13	15	14
North	**Mean**	12.17	13.6	10.93	13	11.87
	Median	12	14	11	13	13
Nabatieh	**Mean**	11.74	13.47	11.06	12.14	11.14
	Median	12.57	14	12	13	12
Baalbek-Hermel	**Mean**	14.75	15.92	14.14	16.02	13.5
	Median	15.29	16	14.5	16.5	14
Beirut	**Mean**	11.04	13.93	10.57	11.81	9.28
	Median	10.86	14	10	12	12
Mount Lebanon (Suburbs)	**Mean**	11.34	14.04	11.43	11.92	9.33
	Median	12.57	14	12	14	11
Mount Lebanon (Excluding suburbs)	**Mean**	11.54	13.38	11.25	12.24	10.22
	Median	12.14	16	12	13.5	12
Akkar	**Mean**	13.6	16	13.6	15.4	10.6

	Median	14.57	16	14	16	12
Total	**Mean**	11.84	13.88	11.47	12.56	10.46
	Median	12.57	14	12	14	12

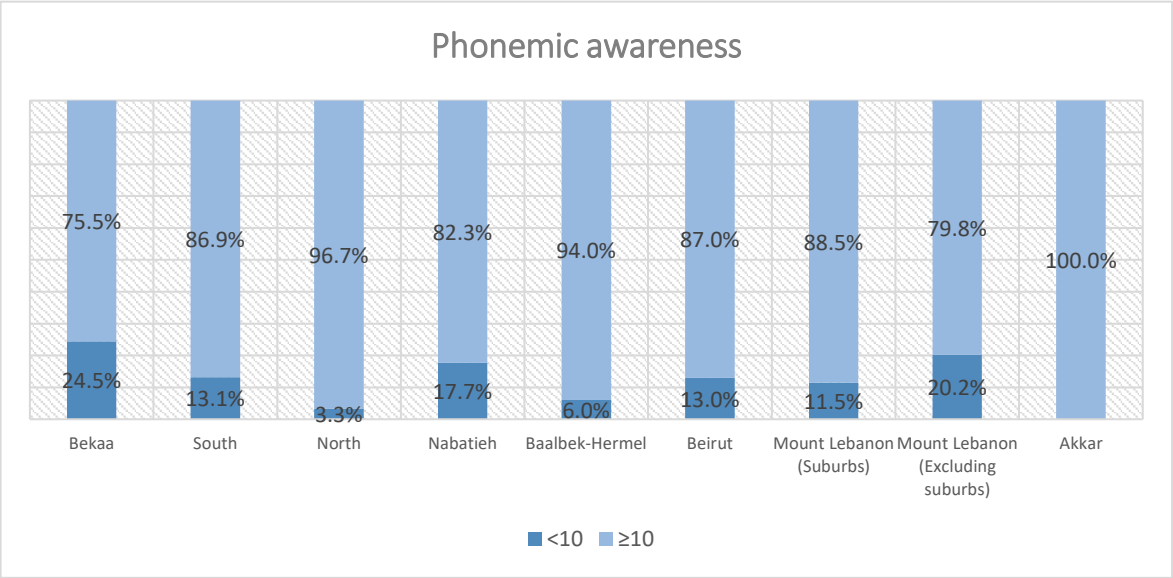
Table 65- English language - BE3- Competencies- Governorates

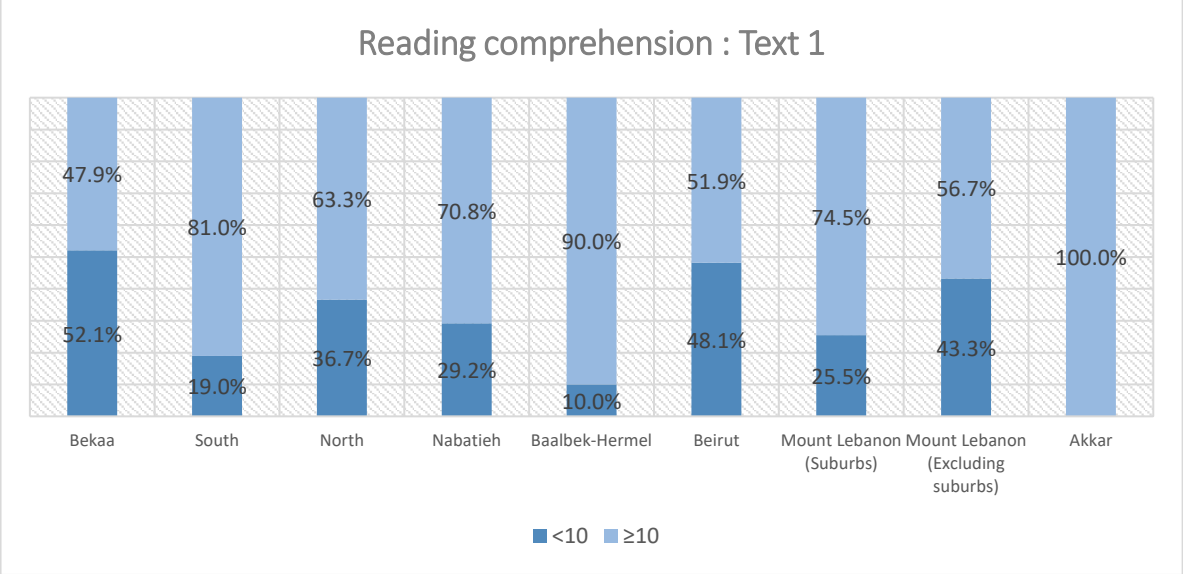
Comparative Analysis of English Language Proficiency in various Lebanese Governorates

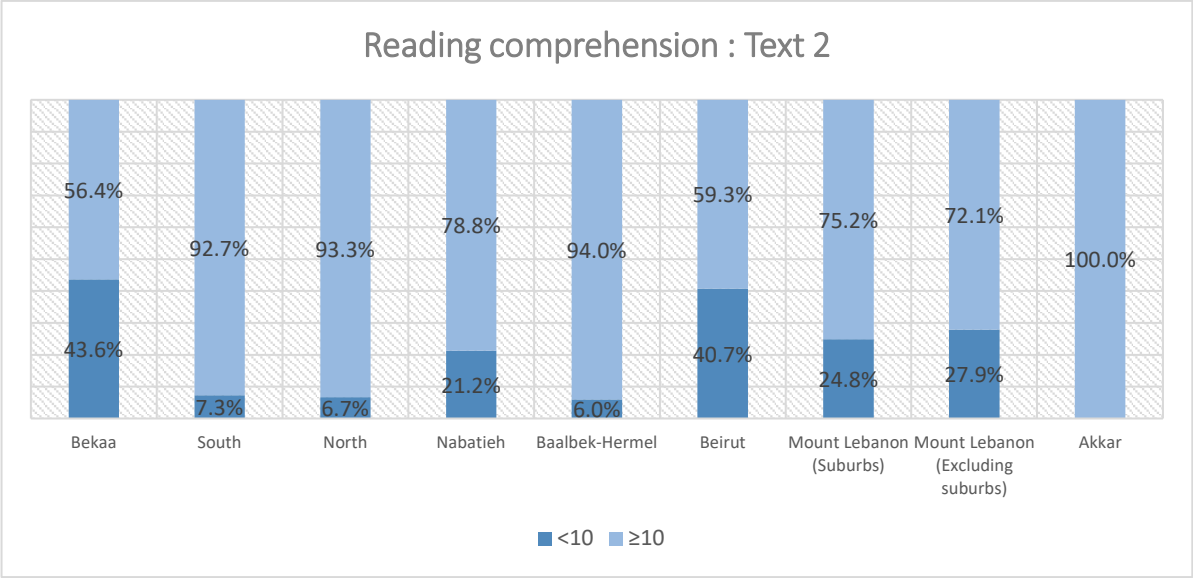
- **Large disparities exist between governorates in all English language skills.**
- Baalbek-Hermel displayed the highest overall performance, followed by Akkar and South, while Bekaa and Beirut generally showed lower scores.
- **Baalbek-Hermel excelled in all areas except Writing.** Notably, they have the highest mean and median scores in both Reading Comprehension texts and Phonological Awareness.
- **Akkar exhibited strength in Reading Comprehension, particularly in Text 2.** Their median score was the highest among all governorates, and their mean score ranked second.
- **Beirut and Bekaa consistently underperformed compared to other governorates.** These regions had the lowest mean and median scores in most subcategories, except for Bekaa's median score in Phonological Awareness.
- **Writing appeared to be the weakest area overall.** With the exception of Baalbek-Hermel, all governorates had mean scores below 12, and median scores below 13.

3.4.8. English Language - Comparative analysis across governorates - Reading Comprehension Proficiency in Descriptive and Narrative Texts

In light of the provided information, it is evident that the Bekaa Governorate recorded the lowest rate, contrasting with the Baalbek Governorate, which achieved the highest rate. Additionally, noticeable variations emerged among governorates concerning the acquisition of competencies evaluated in the administered test by the learners.


Phonemic awareness
75.5%
86.9%
96.7%
82.3%
94.0%
87.0%
88.5%
79.8%
100.0%
24.5%
13.1%
3.3%
17.7%
6.0%
13.0%
11.5%
20.2%
Bekaa
South
North
Nabatieh
Baalbek-Hermel
Beirut
Mount Lebanon (Suburbs)
Mount Lebanon (Excluding suburbs)
Akkar
<10
≥10


Reading comprehension : Text 1
47.9%
81.0%
63.3%
70.8%
90.0%
51.9%
74.5%
56.7%
100.0%
52.1%
19.0%
36.7%
29.2%
10.0%
48.1%
25.5%
43.3%
Bekaa
South
North
Nabatieh
Baalbek-Hermel
Beirut
Mount Lebanon (Suburbs)
Mount Lebanon (Excluding suburbs)
Akkar
<10
≥10



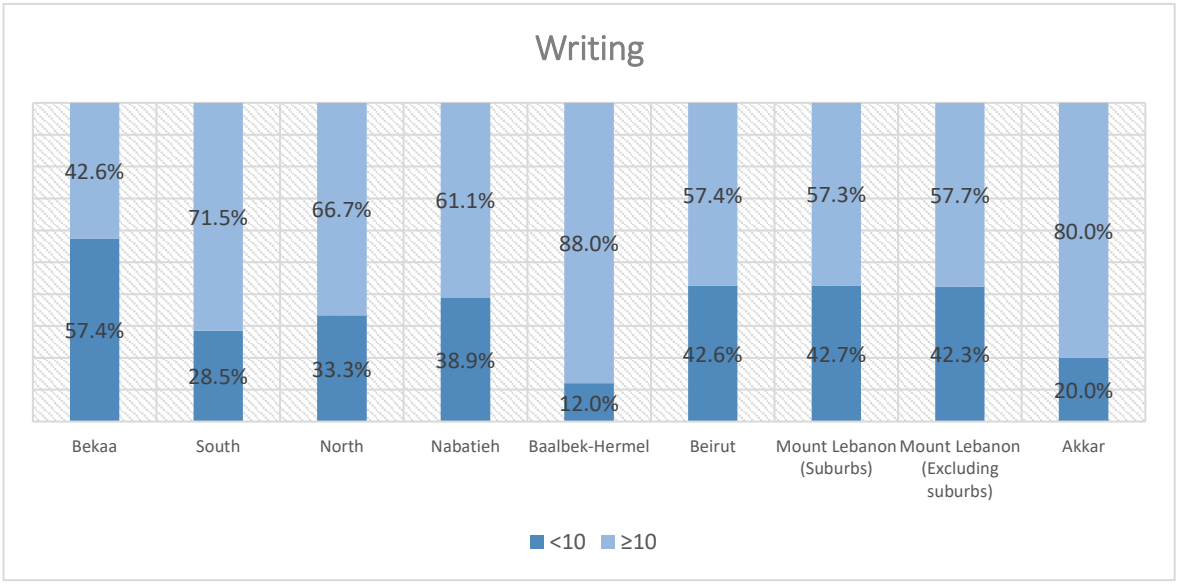


Figure 13- English Language- Competencies- Governorates

The distribution of percentages for individuals whose results fell below the average (<10) in the domain of **phonological awareness** across various educational sectors are shown below:

Bekaa Governate	24.5%
South Governate	13.7%
North Governate	3.3%
Nabatieh Governate	17.7%
Baalbek-Hermel Governate	6%
Beirut Governate	13%

Mount Lebanon Governate	Between 11.5% and 20.2%
Akkar Governate	--

In the domain of **reading comprehension**, learners exhibited varying results between the descriptive text and the narrative text. The outcomes of the first text were relatively superior to those of the second text, with the percentages of the learners whose results were below the average (<10) as follows:

Bekaa Governate	Between 43.6 % and 52.1%
South Governate	Between 7% And 19.6%
North Governate	Between 6.7% and 36.7%
Nabatieh Governate	Between 21.29 and 29.2%
Baalbek-Hermel Governate	Between 6% and 15%
Beirut Governate	Between 13% and 48.1%
Mount Lebanon (Suburbs) Governate	Between 11.5% and 20.2%
Mount Lebanon (Excluding suburbs) Governate	Between 27.9% and 43.3%
Akkar Governate	--

In the domain of **written expression (writing)**, the percentages of the learners whose results were below the average (<10) are as follows:

Bekaa Governate	57.4%
South Governate	28.5%
North Governate	33.3%
Nabatieh Governate	38.9%
Baalbek-Hermel Governate	12%
Beirut Governate	42.6%
Mount Lebanon Governate	Between 42.3% and 42.7%
Akkar Governate	20%

The analysis of the results reveals crucial educational insights that should be considered during the compensatory year across all Lebanese governorates. These insights are summarized in the following key points:

A. Decline in English Proficiency in Bekaa Governorate:

- **Problem**: English language proficiency is declining across all levels in the Bekaa Governorate.

- **Impact**: This decline can negatively affect learners' performance in non-linguistic subjects such as mathematics and science, where understanding the language is crucial for problem-solving and scientific thinking.

B. Weakness in Written Expression Across Lebanon:

- **Problem:** All Lebanese governorates showed a significant weakness in the area of written expression.

- **Impact:** This weakness can hinder students' ability to enhance the practical application aspect within subject areas, focusing on improving creative tasks, composition skills, and the correct, integrated use of language.

The diagnostic test results for the English language in BE6 across Lebanese governorates are presented in table 64 below:

Bekaa Governate	9.88%
South Governate	12.83%
North Governate	9.31%
Nabatieh Governate	9.67%
Baalbek-Hermel Governate	14.58%
Beirut Governate	11.76%
Mount Lebanon Governate	Between 9.67% and 10.86%
Akkar Governate	5.96%

Governorate		English Language	Phonological Awareness	Reading comprehension (Text 1)	Reading comprehension (Text 2)	Writing
Bekaa	**Mean**	10.97	10.97	10.1	7.28	9.88
	Median	10.67	10.67	10	6.67	9.33
South	**Mean**	13.34	13.34	13.1	11.27	12.83
	Median	14	14	13.33	12	13.6
North	**Mean**	10.25	10.25	9.75	6.25	9.31
	Median	8.67	8.67	8.67	5.33	7.47

Nabatieh	**Mean**	10.18	10.18	10.17	7.52	9.76
	Median	9.33	9.33	9.33	6.67	8.53
Baalbek-Hermel	**Mean**	14.75	14.75	15.33	12.75	14.58
	Median	15.33	15.33	16	12	14.53
Beirut	**Mean**	12.67	12.67	12.45	8.61	11.76
	Median	15.33	15.33	14.67	7.33	13.07
Mount Lebanon (Suburbs)	**Mean**	11.66	11.66	11.22	8.53	10.86
	Median	11.33	11.33	10	8	9.87
Mount Lebanon (Excluding suburbs)	**Mean**	10.72	10.72	9.49	7.9	9.67
	Median	9.67	9.67	9.33	6.67	8.27
Akkar	**Mean**	5.78	5.78	6.89	4.44	5.96
	Median	6	6	8	4	6.93
Total	**Mean**	11.84	11.84	11.43	8.94	11.1
	Median	12	12	11	8	10.93

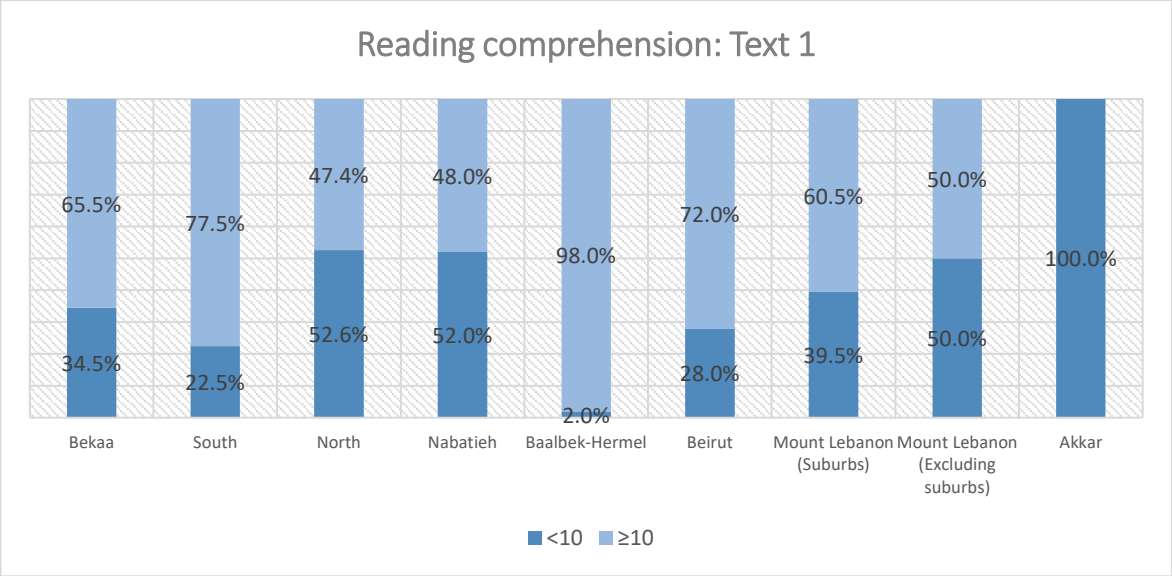
Table 66- English Language- BE6- Governorates

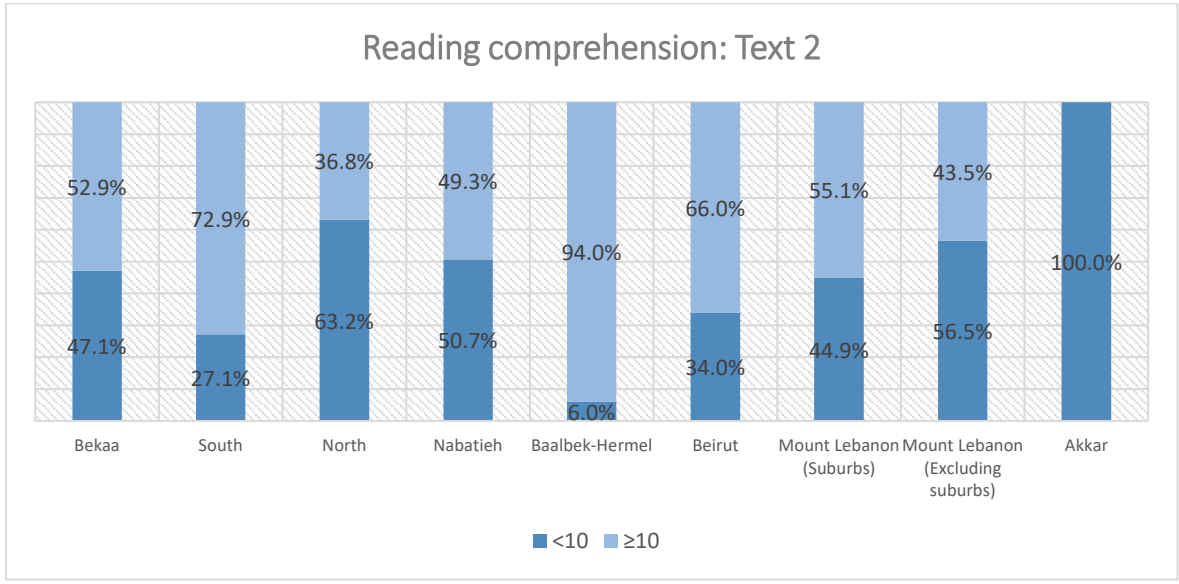
Comparative Analysis of English Language Proficiency in various Lebanese Governorates

As indicated, the outcomes in most governorates fell below the average, with exceptions noted in the governorates of Beirut and Baalbek-Hermel, which secured the highest rates. Additionally, the results underscore variations among governorates in learners' proficiency across the competencies assessed in the test.

Comparative Analysis of Reading Comprehension Proficiency in Descriptive and Narrative Texts

In the domain of reading comprehension, learners exhibited varying results between the descriptive text and the narrative text. The outcomes of the first text were relatively superior to those of the second text, with the percentages of learners whose results were below the average (<10) as follows:


Reading comprehension: Text 1
65.5%
34.5%
77.5%
22.5%
47.4%
52.6%
48.0%
52.0%
98.0%
2.0%
72.0%
28.0%
60.5%
39.5%
50.0%
50.0%
100.0%
Bekaa
South
North
Nabatieh
Baalbek-Hermel
Beirut
Mount Lebanon (Suburbs)
Mount Lebanon (Excluding suburbs)
Akkar
<10
≥10


Reading comprehension: Text 2
52.9%
47.1%
72.9%
27.1%
36.8%
63.2%
49.3%
50.7%
94.0%
6.0%
66.0%
34.0%
55.1%
44.9%
43.5%
56.5%
100.0%
Bekaa
South
North
Nabatieh
Baalbek-Hermel
Beirut
Mount Lebanon (Suburbs)
Mount Lebanon (Excluding suburbs)
Akkar
<10
≥10

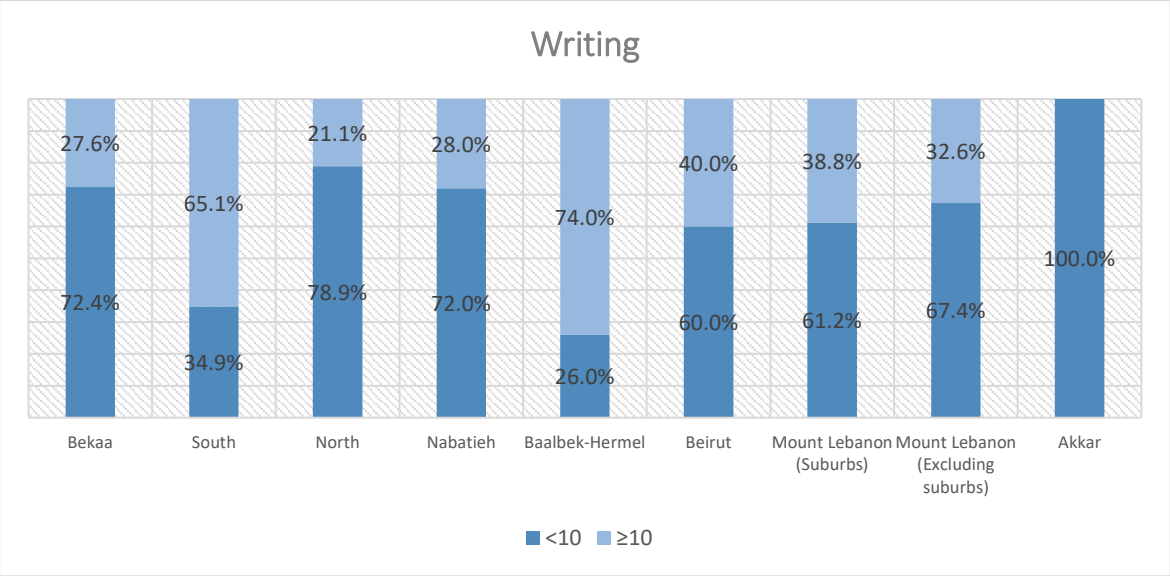


Figure 14- English Language- Governorates- Competencies

Bekaa Governate	Between 34.5% and 47.1%
South Governate	Between 22.5% And 27.1%
North Governate	Between 52.6% and 63.2%
Nabatieh Governate	Between 50.7 and 52%
Baalbek-Hermel Governate	Between 2% and 6%
Beirut Governate	Between 28% and 66%
Mount Lebanon (Suburbs) Governate	Between 39.5% and 44.9%
Mount Lebanon (Excluding suburbs) Governate	Between 50% and 56.5%
Akkar Governate	--

In the domain of **written expression**, the percentages of learners whose results were below the average (<10) were as follows:

Bekaa Governate	72.4%
South Governate	34.9%
North Governate	78.9%
Nabatieh Governate	72%
Baalbek-Hermel Governate	26%
Beirut Governate	60%
Mount Lebanon (Suburbs) Governate	51%
Mount Lebanon (Excluding suburbs) Governate	58.7%

Akkar Governate	--

Key Findings

Educational Indicators and Imperatives for the Compensatory Year: Insights from Lebanese Governorates

The analysis of the results reveals several concerning trends in education across various Lebanese governorates, particularly in the North, Bekaa, and Nabatieh. Here's a breakdown of the key problems and their possible solutions:

- **Significant Decline in North, Bekaa, and Nabatieh:**
  - **Problem:** Approximately 75% of the students in the North, Bekaa, and Nabatieh failed the test, demonstrating extremely low abilities in analytical reading across all levels.
  - **Solution:** This alarming decline suggests a major deficiency in foundational reading skills.
- **Weakness in Written Expression Across Lebanon:**
  - **Problem:** All Lebanese governorates exhibited a significant weakness in written expression, indicating difficulties in clear and effective communication.
  - **Solution:** This weakness emphasizes the need for a comprehensive compensatory rehabilitation plan. Such a plan should take in consideration all the years, i.e., from the foundational to the advanced levels, encompassing structured progression from sentences to paragraphs and interconnected topics.
- **Potential Impact on Mathematics and Science:**
  - **Problem:** The low level of English proficiency across regions raises concerns about its impact on subjects like mathematics and science.
  - **Solution:** This underscores the necessity for targeted interventions to bolster language competencies, ensuring a holistic improvement in academic performance.

3.4.9. Science Across Lebanese Governorates

Regional Disparities in Learning Loss: A Comparative Analysis of Science Test Results Across Lebanese Governorates

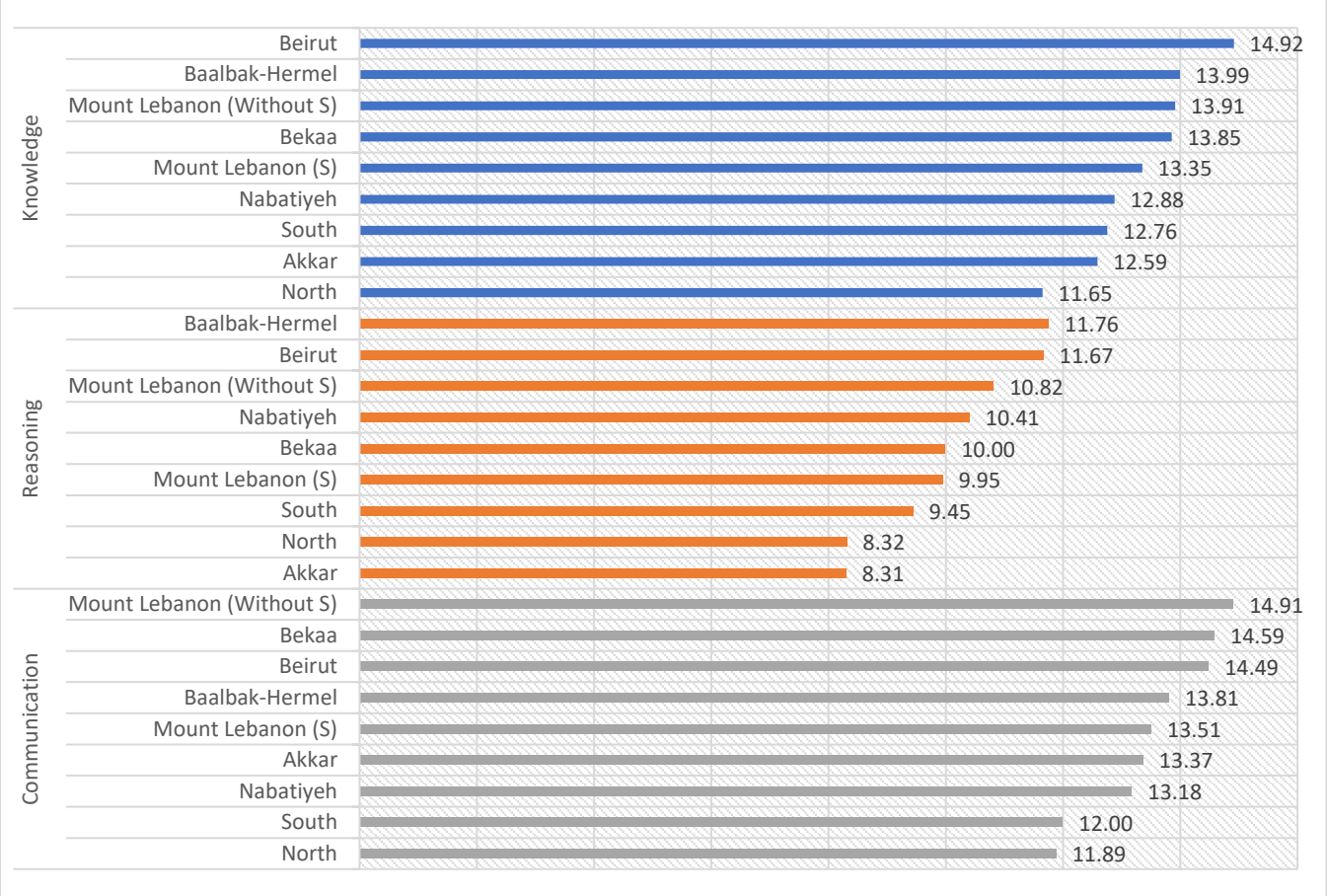


Table 67- Science- Governorates- Competencies- Loss

In examining the governorate variable, noticeable variations in the extent of learning loss become apparent. A detailed analysis reveals a distinct disparity in the mastery of acquired knowledge, with Beirut Governorate learners achieving the highest average (14.92), while the North Governorate lags with the lowest average (11.65). This contrast extends to the field of practicing scientific thinking, where the rates in the North, Akkar, the South, and the suburbs of Mount Lebanon showed lower performance compared to the success rates. Baalbek-Hermel led with the highest rate of 11.76, closely followed by Beirut (11.67), Mount Lebanon (10.82), and Bekaa (10.00).

- **Knowledge:**
  - **Beirut** led in this category with a score of **13.99**.
  - **Baalbak-Hermel** and **Mount Lebanon (Without S)** followed closely.
  - **Akkar** had the lowest score.

- **Reasoning:**
  - Once again, **Beirut** took the lead with a score of **14.91**.
  - **Mount Lebanon (Without S)** ranked second in Reasoning.
  - **The North** region had the lowest score.

- **Communication:**
  - **Beirut** maintained its dominance with a score of **14.59**.
  - **Baalbak-Hermel** closely trailed behind.
  - **The North** region lagged in Communication skills.

- **Patterns and Observations:**
  - **Beirut** consistently outperformed other regions across all three categories.
  - The **North** region consistently scored lower, especially in Reasoning and Communication skills.

- **Implications:**
  - These assessments provide valuable insights into educational strengths and weaknesses.
  - Policymakers should consider targeted interventions to address disparities among regions.
  - Focusing on improving Reasoning and Communication skills in regions with lower scores could enhance overall educational outcomes

Science BE6- A Governorate-Level Distribution

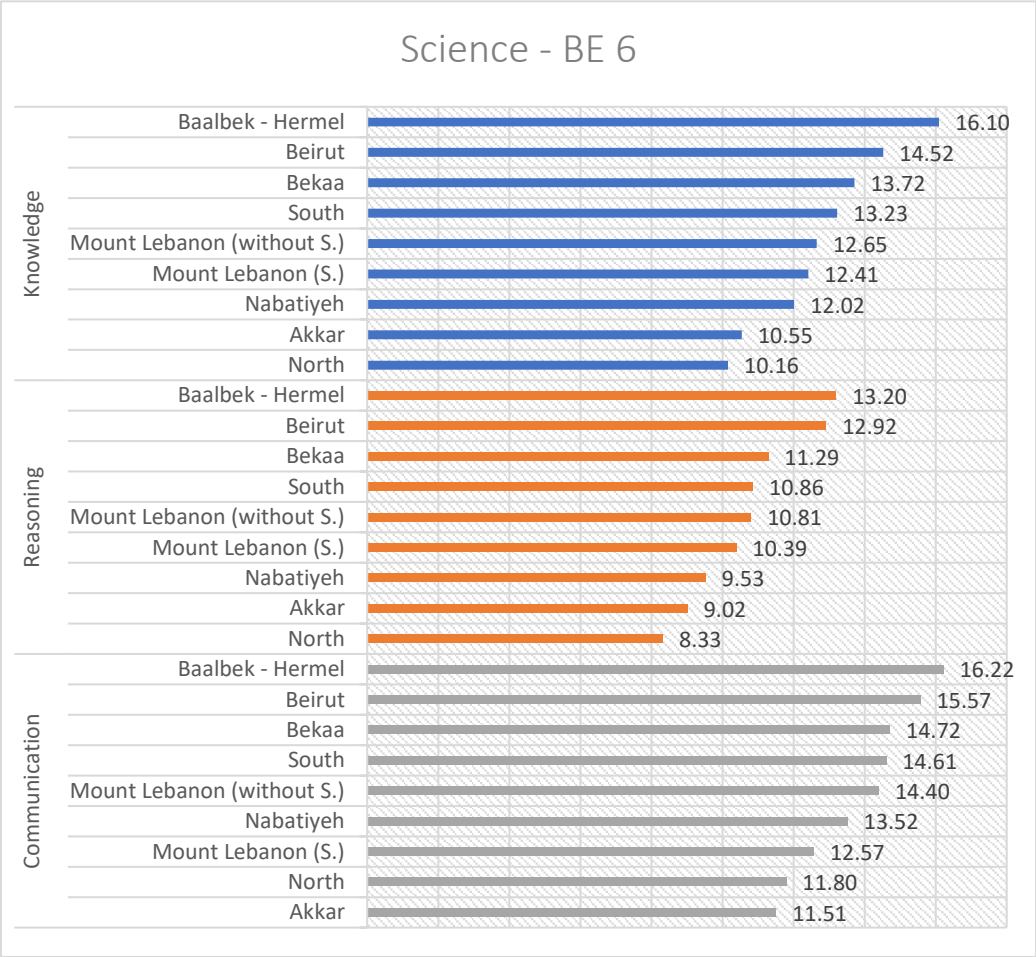


Table 68- Science- BE6- Governorates - Loss

By examining the results across governorates, it is evident that Baalbek-Hermel Governorate stands out as the top performer in all three assessed areas. However, in the domains of mastering acquired knowledge and communication techniques, the North (10.16) and Akkar (10.55) governorates achieved

lower scores. Moreover, for practicing scientific thinking, the North, Akkar, and South governorates each received scores below the success rate.

3.5 - The Impact of the second Language of instruction on Learners' Performance in Mathematics and Science:

Language_Exam		N	Mean	Std. Deviation	Std. Error Mean
Mathematics	Fr	722	10.0838	4.94802	0.18415
	En	658	8.7596	5.19104	0.20237

Table 69- Mathematics- BE3- Exam Language

Group Statistics					
Language_Exam		N	Mean	Std. Deviation	Std. Error Mean
Mathematics	Fr	703	13.3551	4.44715	0.16773
	En	747	12.0550	5.05272	0.18487

Table 70- Mathematics- BE6- Exam Language

We studied the impact of the second language of instruction (French and English), obtained by learners in the diagnostic test in both mathematics and science subjects in BE3 and BE6. It is, note that the schools that teach science in Arabic were not included in the sample. The results for the mathematics subject in BE3 and BE6, as shown in the Tables below, revealed that the learners who studied mathematics in French achieve higher averages in mathematics (10.0838) in BE3 and (13.3551) in BE 6, compared to learners who studied this subject in English, as they had the following averages: (8.7596) in BE3 and (12.0550) in BE 6.

Group Statistics					
Exam Language	N	Mean	Std. Deviation	Std. Error Mean	
Science	Fr	710	11.3014	4.25703	0.15976
	En	650	12.2076	4.08453	0.16021

Table 71- Science- BE3- Exam language

Learners who studied science in French achieved lower averages in science (11.3014) in the third grade compared to learners who studied this subject in English, whose average reaches (12.2076) in the sixth grade. However, the trend is reversed in the sixth grade, where French-speaking learners outperformed English-speaking learners with an average of (13.3551), while the average for those studying in English was (12.0550). We will attempt to explain these results in the following sections of this research.

Chapter IV- Summary of findings

4.1 Learning loss as revealed by diagnostic tests

4.1.1. Results Pertaining to the Arabic Language as revealed by Diagnostic Tests (BE3 and BE6)

Key Findings:

- Writing skills pose a significant challenge: Across both BEs (BE3 and BE6) and various educational sectors (public, private, UNRWA), writing consistently received the lowest average scores compared to other language activities like reading comprehension and analysis.

- Significant number of students failed in writing: In BE3, 67.4% of the students scored below the passing grade in writing, and in BE6, 39.1% (English medium schools) and 31.3% (French medium schools) failed writing.

- Performance gap across school languages: Students in English-medium schools showed the highest failure rate (33.5%) across all Arabic language activities compared to French-medium (19.93%) and English French combined (31.1%) schools.

- Need for further investigation: The 11.17% difference in Arabic language performance between French-only and French-English combined schools warrants further research and discussion with stakeholders.

Recommendations:

- Prioritize interventions to improve writing skills: Implement targeted strategies like intensive writing instruction, feedback mechanisms, and engaging writing tasks to address the widespread weaknesses in written expression.

- Tailor interventions based on the school language: Consider language-specific factors when designing interventions, taking into account the challenges faced by students in English-medium schools and the potential reasons for the performance gap between French-only and French-English combined schools.

- Gather deeper insights through research: Conduct further research to understand the root causes of poor writing performance and identify effective strategies for improvement. This could involve qualitative studies to explore student attitudes and challenges in writing, as well as quantitative analyses to determine the impact of different teaching methods and resources.

- Collaboration and knowledge sharing: Facilitate communication and collaboration between stakeholders - educators, curriculum developers, researchers, and policymakers - to share best practices and develop comprehensive solutions to enhance Arabic language writing skills across all educational settings.

4.1.2. Analysis of Mathematics Learning Loss as shown by Diagnostic Tests (BE 3 & 6)

The analysis of the diagnostic assessment results reveals learning losses among Lebanese students, particularly in the areas of Geometry and Measurement. Here's a breakdown of the key findings by grade level and subject:

Key findings

A. BE 3 (Grade 3):

- **Moderate learning loss:** Overall, students experienced moderate learning loss across all governorates. However, Geometry and Measurement showed the most significant decline, with an average score of 50% below the expected level.
- **Performance variations by governorate:** Significant disparities were observed in student performance across different governorates. Baalbek-Hermel achieved the highest scores, while Nabatieh had the lowest.
- **Urban-rural divide:** Students in urban areas (e.g., Mount Lebanon) generally performed better than those in rural areas (e.g., Nabatieh).

B. BE 6 (Grade 6):

- **Significant overall learning loss:** A substantial decline in overall learning was observed in grade 6, with a pass rate of only 41.4%.
- **Disparity between domains:** Learning loss was not uniform across all subjects. Arithmetic and Algebra showed better results compared to Geometry and Measurement, with the latter again demonstrating a 50% deficit.
- **Possible causes:** The report suggests several potential causes for the observed learning losses, including lack of proper teaching methods, the prevalence of remote learning due to the pandemic, teacher strikes, and insufficient follow-up from teachers.

C. Performance by Domain:

- **Both grades:** Across both grades, students performed the strongest in Arithmetic and Algebra, while Geometry and Measurement showed the weakest results.

Performance by Governorate:

A. BE 3 (Grade 3):

- **Large variations:** Governorate-level performance exhibited significant variations, with scores ranging from 90.9% to 53.6%.
- **Urgent interventions needed:** Several governorates, including Bekaa, South, North, Nabatieh, Beirut, and Akkar, require urgent interventions to address the critical learning gaps in Measurement.

- **Targeted interventions:** Mount Lebanon requires targeted interventions to improve student performance in Geometry and Measurement.

B. BE 6 (Grade 6):

- **Baalbek-Hermel highest:** Baalbek-Hermel achieved the highest scores in both public and private sectors.

- **Public-private disparity:** Beirut and Bekaa governorates showed a stark contrast in performance between public and private schools.

Performance by Sector/Language:

A. BE 3 (Grade 3):

- **Challenges across sectors:** Students in all sectors and languages struggled with Measurement, with an average score of 50% below the benchmark.

- **Sectoral variations:** The free private sector had the lowest overall success rate, while UNRWA schools achieved the highest results. Public schools generally performed lower than private schools, with the exception of Bekaa and Mount Lebanon suburban areas.

B. BE 6 (Grade 6):

- **Low performance in Measurement:** All language groups exhibited low performance in Measurement, with scores falling below the expected level.

- **English medium schools:** Schools where English is the primary medium of instruction had the lowest overall success rate.

Overall, this diagnostic assessment highlights the need for a multi-pronged approach to address learning losses in Lebanon. The data emphasizes the importance of targeted interventions tailored to specific governorates, student populations, and subject areas.

Recommendations:

- Focus interventions on Geometry and Measurement across all BEs and governorates.
- Tailor interventions to specific governorate and sector needs.
- Address root causes of learning gaps (teacher training, teaching methods, socioeconomic factors).
- Ensure teacher presence and supervision (struggling domains).
- Monitor progress and adjust interventions regularly.
- Further research: Unusual results in certain governorates (Nabatieh public sector).

4.1.3. Analysis of English Language Learning Loss as revealed by Diagnostic Tests (BE 3 & 6)

This analysis of the English language proficiency in Lebanese schools reveals key findings across grades, sectors, and skill areas. Here's a breakdown of the results:

Overall Performance:

- **Writing:** Writing emerged as the weakest area across all grades and sectors, necessitating significant improvement strategies.
- **Reading Comprehension:** Reading comprehension in BE 6 fell slightly below the expected level, with particular challenges observed in inference-based questions and grammar.
- **Public vs. Private Schools:** Public schools consistently demonstrated lower performance compared to private schools. Additionally, notable variations were observed across governorates.

Performance by Grade Level:

A. BE 3 (Grade 3):

- **Average Scores:** Students achieved generally high average scores across most domains, with the exception of writing.
- **Question Types:** True/false and inference-based questions posed particular challenges for students.
- **Sectoral Differences:** A significant disparity existed between public and private schools, with public schools performing lower overall.
- **Performance by Governorate:** Performance varied across governorates. Beirut and Baalbek-Hermel achieved the highest scores.

B. BE 6 (Grade 6):

- **Reading Comprehension:** A slight improvement in reading comprehension was observed compared to BE 3. However, written expression remained a challenge.
- **Question Types:** Similar to BE 3, inference-based questions and grammar continued to present difficulties.
- **Public-Private Sector Gap:** The performance gap between public and private schools persisted, although it narrowed slightly.
- **Governorate Performance:** Beirut and Baalbek-Hermel maintained their positions as the top-performing governorates.

Sectoral Variations:

- **Private and Free Private Schools:** Both private and free private schools consistently outperformed public schools across most assessed areas.
- **UNRWA Schools:** UNRWA schools demonstrated comparable scores to private schools in some language domains.
- **Public School Challenges:** Public schools faced particular challenges in written expression and reading comprehension.

Recommendations

Based on the identified areas for improvement, the following recommendations are proposed:

- **Prioritize Writing Instruction:** Effectively integrate writing skills development across all curriculum areas.
- **Assessment Diversification:** Utilize a wider variety of question types in assessments to comprehensively evaluate diverse language skills.
- **Targeted Interventions:** Implement targeted programs to support struggling students and address skill gaps in specific governorates.
- **Teacher Training:** Equip educators with effective strategies and resources for teaching writing skills.
- **Monitoring and Adaptation:** Regularly monitor student progress and adapt interventions based on on-going data collection and evaluation.

4.1.4. Analysis of French Language Learning Loss as revealed by Diagnostic Tests (BE 3 & 6)

The analysis focuses on key domains like phonological awareness, text comprehension (narrative and descriptive), and written expression to reveal existing disparities and highlight areas for improvement.

Public-Private Sector Gap in BE3:

A significant disparity exists between the public and private sectors in BE3. Public school students achieved lower average scores, with 62.5% falling below the expected level compared to 36.2% in private schools. This gap is further accentuated by variations within the public sector across governorates. Beirut experienced the steepest decline (100% below average), while Baalbek-Hermel and Bekaa showed relatively better results.

Analysis of Skill Areas in BE3:

- **Phonological Awareness:** Public sector performance was generally acceptable, except for Nabatieh governorate. Private schools demonstrated strong development in this area, although the South governorate needed improvement.

Text Comprehension:

- **Narrative Text:** Public sector performance varied across governorates, with Beirut showcasing the highest weakness and Nabatieh demonstrating the best performance. Private schools generally performed better, except for the South governorate.

- **Descriptive Text:** A different picture emerged for descriptive text comprehension, with Beirut displaying the lowest public sector achievement and Bekaa exhibiting the highest private sector success.

Written Expression as the Major Challenge:

Written expression emerged as the weakest area across both sectors and all governorates in BE3. Public schools face particularly critical challenges, with a 100% decline in both Beirut and Nabatieh compared to the expected level. Interestingly, a disparity exists between students' understanding of text and their written expression, suggesting a need for focused interventions in vocabulary and grammar development.

BE6: Progress with Persistent Discrepancies:

BE6 students showed improvements compared to BE3, but the public-private sector gap remained substantial. Public sector scores remained 54.3% below average, while private sector scores were at 23.5% below average. The South governorate again presented the most significant decline in the public sector, while Bekaa boasted a 100% success rate in the private sector.

Skill Areas in BE6 Mirror BE3 Trends

Analysis of skill areas in BE6 revealed similar trends to those observed in BE3:

- **Narrative Text Analysis:** The public sector exhibited variations, with weaknesses in the South, Nabatieh, and Akkar. The private sector showed consistent success, except for Nabatieh and occasional weaknesses in the South.

- **Descriptive Text Comprehension:** Public sector struggles were evident in the South, Beirut, and Nabatieh, while the private sector performed well, with minor shortcomings in the South and Nabatieh.

Written Expression Remains a Hurdle

Similar to BE3, written expression proficiency remained a key challenge for the public sector across most governorates, particularly in the South and Beirut. The private sector also faced challenges, with Baalbek-Hermel, the South, and Akkar showing weaknesses. As observed in BE3, a disparity exists between understanding and written expression, highlighting the need for targeted interventions in vocabulary and grammar.

This analysis underscores the urgency for addressing existing disparities in French language proficiency between public and private schools in Lebanon. Focused interventions in specific governorates and targeted strategies to improve writing skills, vocabulary development, and grammar instruction are crucial for achieving equitable and effective French language education for all students.

Recommendations

This study underscores several crucial points:

- Need for targeted interventions: Both sectors require focused efforts, especially in written expression and governorates with lower performance.
- Rethinking automatic promotion: Concerns arise about its impact on students with weaknesses in French.
- Shifting educational emphasis: Moving away from rote learning towards developing critical thinking skills is crucial.
- Addressing disparities: Bridging the gap between public and private sectors requires careful consideration of resources and learning materials.

This detailed analysis provides valuable insights and lays the groundwork for designing effective interventions to ensure equitable French language learning opportunities for all students across Lebanon.

4.1.5. Analysis of Science Learning Loss as revealed by Diagnostic Tests (BE 3 & 6)

The analysis focuses on diverse science domains, knowledge mastery, and scientific thinking skills to identify learning gaps, reveal disparities, and inform targeted interventions for improved science proficiency.

A. BE3 Performance:

- **Knowledge Mastery:** Scores varied across thematic areas, with 'Plants' exhibiting the lowest average (12) and 'Humans' the highest (14.69). This trend of variability is further observed within themes, where proficiency levels span wide ranges.

- **Scientific Thinking:** Proficiency in scientific thinking skills lagged behind knowledge mastery, particularly in 'Plants' (8.56) and 'Humans' (4.58). Notably, 25% of learners in both themes score below four points, indicating a critical gap in this area.

- **Governorate Disparities:** Significant discrepancies exist between governorates. Students in Beirut had the highest average knowledge mastery score (14.92), while students in the North Governorate struggled (11.65).

- **Sectoral Differences:** Overall, private schools outperformed public schools. However, the UNRWA private sector, despite its smaller sample size, showed lower average scores than other private sectors.

B. BE6 Performance:

- **Knowledge Mastery:** Similar theme-based variations persisted, with 'Plants' scoring highest (16.13) and 'Humans' scoring lowest (11.90).

- **Scientific Thinking:** Challenges remained evident in scientific thinking. The average score for 'Plants' was 10.25, and both 'Animals' and 'Earth and the Universe' showed 25% of the learners scoring below four points, indicating a need for improvement.

- **Governorate Disparities:** Baalbek-Hermel did better than other governorates in knowledge mastery. However, the North, Akkar, and South governorates exhibited weaknesses in scientific thinking skills.

- **Sectoral Differences:** The UNRWA private sector stood out with strong performance in knowledge mastery and communication skills, but struggled in scientific thinking. Private and free private sectors performed comparably, while public schools consistently showed lower scores across all areas.

Key Findings:

This analysis reveals critical learning gaps in science education across Lebanon. Notably, scientific thinking skills consistently lagged behind knowledge mastery, highlighting the need for instructional strategies that encourage critical thinking and problem-solving in science. Additionally, significant disparities exist between governorates and sectors, indicating a need for targeted interventions to ensure equitable access to quality science education for all students.

4.2. General analysis

This report presented a comprehensive analysis of diagnostic assessment results across various subjects and educational sectors in Lebanon. Key findings revealed concerning learning gaps and highlight the need for multi-pronged interventions to improve student outcomes.

Writing as a Common Challenge:

- Writing emerged as the weakest area across all languages and grades (Arabic, English, and French).

- A significant portion of students scored below the passing grade in writing (Arabic: 67.4% in BE3, 39.1% in English-medium BE6).

Subject-Specific Learning Losses:

- **Mathematics:** Geometry and Measurement showed the most significant learning gaps in both BE3 and BE6, with an average score of 50% below the expected level. Disparities were observed between urban and rural areas (BE3).

- **Science:** Proficiency in scientific thinking skills lagged behind knowledge mastery across all themes (BE3 & BE6). Thematic variations existed, with 'Plants' consistently scoring lower than 'Humans' in knowledge mastery.

- **Arabic Language:** Students in English-medium schools exhibited the highest failure rate across all Arabic language activities compared to French-medium schools.

- **French Language:** A substantial public-private sector gap exist with public schools exhibiting lower average scores across all assessed areas. Written expression emerged as the weakest skill, especially in BE3.

- **English Language:** Public schools consistently underperformed compared to private schools in English language proficiency. Writing skills and inference-based reading comprehension questions posed particular difficulties for students.

Performance Disparities:

- **Public vs. Private Schools:** Public schools consistently demonstrated lower performance compared to private schools across most subjects and languages.

- **Governorate Variations:** Significant discrepancies in student performance were observed between governorates. Baalbek-Hermel and Beirut generally achieved higher scores, while Nabatieh and the North governorate faced greater challenges.

- **Sectoral Differences:** UNRWA schools performed comparably to private schools in some language domains but showed lower average scores in science knowledge mastery (BE3).

4.3. Revisiting the study questions

4.3.1. Results according to the educational sector in various subjects

Diagnostic assessment results revealed concerning disparities in student performance across different educational sectors in Lebanon. UNRWA schools, free private schools, and private schools generally outperformed public schools in most subjects at both BE3 and BE6. These results align with studies in other conflict-affected regions (Aflaki et al., 2023). The sole exception was science in BE6, where UNRWA schools exhibited the lowest average score (8.99).

The decline in public school performance can be attributed to several factors, echoing international trends documented during the COVID-19 pandemic. These include missed school days due to teacher strikes, disruptions caused by the two-year period of remote and blended learning, and a lack of preparedness for this pedagogical shift in many schools (Hanushek & Woessmann, 2020; Kuhfeld et al., 2020; Beteille et al., 2021).

The McKinsey report on the Global Learning Crisis aligns with these findings, highlighting the challenges faced by lower-income educational systems in deploying effective remote learning during emergencies (McKinsey & Company, 2020). Similarly, the National Foundation for Educational Research (NFER) study in England revealed a substantial deficit in curriculum coverage during remote learning, despite leadership guidance and teacher readiness (National Foundation for Educational Research, 2020).

While MEHE and CERD made efforts to equip schools with technology, electronic textbooks, and online resources, these efforts were not always sufficient to bridge the gap. Undeniably, the number of missed school days was likely higher in public schools compared to private schools. Conversely, UNRWA schools, less affected by Lebanese events and daily life, experienced fewer disruptions.

Despite these mitigating factors, public school students consistently exhibited lower performance compared to students from other sectors. This translates into varying degrees of learning loss across student populations, with public school students experiencing the most significant declines. These findings resonate with warnings from UNESCO, World Bank, and UNICEF regarding the negative impact of COVID-19 school closures on learning outcomes, particularly in low- and middle-income countries, where learning poverty could reach 70% due to ineffective remote learning (UNESCO, UNICEF, World Bank, & OECD, 2021).

While this analysis provides an overview of disparities by sector, further investigation is required to delve deeper into the specific subject areas contributing to the decline in public school averages. The next section will explore how student performance varies across Lebanese governorates without distinguishing between educational sectors.

4.3.2. Interpretation and discussion of results from different Lebanese governorates in various educational subjects:

Analysis of diagnostic assessment results across various Lebanese governorates and educational subjects reveals intriguing patterns regarding the geographic distribution of the learning outcomes. Contrary to initial assumptions, the analysis reveals that governorates with the highest average scores are not necessarily located near major cities or the capital. These findings challenge the commonly held belief that proximity to urban centers translates into higher student achievement in Lebanon. Notably, several governorates geographically distant from the capital secured top rankings in various subjects. This aligns with research conducted by the OECD (2016) and Hanushek and Woessmann (2018) who reported similar observations of rural-urban achievement gaps not always favoring urban areas.

These results suggest that factors beyond simple geographic location play a significant role in shaping educational outcomes. While factors like access to quality educational resources and teacher qualifications are typically concentrated in urban areas (Hanushek & Rivkin, 2006), alternative explanations for the observed pattern in Lebanon need to be explored.

Some potential explanations for why some geographically distant governorates might outperform others are the following:

- **Concentration of High-Performing Schools:** Certain rural governorates may have a higher concentration of well-resourced schools with strong leadership and effective teaching practices, potentially leading to better student outcomes.

- **Socioeconomic Background:** Research suggests that student socioeconomic background is a strong predictor of academic achievement (Sirin, 2005). Governorates with a higher concentration of families with strong socio-economic resources might exhibit higher overall student performance, regardless of proximity to urban centers.

- **Focus on Specific Subjects:** The observed pattern could also be subject-specific. Certain geographically distant governorates might prioritize specific subjects within their curriculum, leading to stronger student performance in those areas.

Furthermore, the data indicates that governorates close to the capital did not consistently occupy the top ranks across all subjects tested. This further undermines the notion of a direct correlation between urban proximity and academic performance. It is possible that these governorates, while potentially offering access to a wider range of resources, lack focus on specific subjects or may have a more diverse student population with varying socioeconomic backgrounds, leading to less consistent performance across the board.

By delving deeper into these factors and exploring the specific characteristics of high-performing governorates, educational policymakers can develop more nuanced understanding of how to promote equitable learning outcomes throughout all Lebanese governorates, regardless of geographic location.

4.3.3. Disaggregating Learning Outcomes for different subjects : Insights from Student Performance Analysis

A comprehensive analysis of student performance across various educational subjects in Lebanon revealed distinct learning patterns. Here, we focus on the distribution of student scores, originally ranging from 0 to 20, categorized into quartiles:

First Quartile (0-5): This group represents students experiencing significant learning loss, evidenced by difficulty comprehending test questions (UNESCO, 2020). This may be attributed to learning disabilities or irregular school attendance due to recent disruptions in Lebanon's education system. The relatively large size of this group suggests learning loss as a major concern, necessitating immediate intervention to prevent potential school dropout (Aflaki et al., 2023).

Second Quartile (5-10): Students in this category face moderate learning difficulties that could be addressed through targeted educational support and differentiated instruction, as advocated by the Lebanese curriculum (MEHE, 2019). Subject-specific variations are evident, with Mathematics exhibiting a particularly large group in this quartile, especially in BE3 (Aflaki et al., 2023). The median score in Mathematics for BE3 (Public Schools) highlights this concern, with a score of 6.74 compared to 12.15 in BE6. This trend suggests a potential for increased learning loss impacting early BE stages more significantly. Further research exploring student performance in Mathematics across a wider range of grades is warranted.

Third Quartile (10-15): This group represents students demonstrating learning proficiency in all subjects across BE3 and BE6. They have the potential to excel with appropriate educational and pedagogical support (Aflaki et al., 2023).

Fourth Quartile (15-20): Students within this category excel across all subjects and require minimal intervention. They may even offer peer support to struggling classmates (Aflaki et al., 2023).

These findings underscore the importance of disaggregating student performance data to identify specific areas requiring targeted interventions. The observed learning gaps necessitate strategies to address learning loss, particularly in BE3 Mathematics, and provide differentiated instruction tailored to individual student needs.

4.4. Recommendations

To address the concerning learning gaps and disparities revealed by these diagnostic assessments, a multi-pronged approach is recommended. This includes:

- **Targeted Interventions:** Implement evidence-based interventions to address specific learning gaps identified across subjects and skills, with a particular focus on writing skills (Arabic, English, French), Geometry and Measurement (Mathematics), scientific thinking skills (Science), and Arabic language proficiency in English-medium schools.

- **Differentiated Instruction:** Tailor these interventions to the specific needs of diverse student populations, educational sectors (public, private, UNRWA), and governorates. Consider factors such as learning difficulties, socioeconomic background, curriculum alignment, and teacher expertise when designing targeted interventions.

- **Root Cause Analysis:** Conduct in-depth research to investigate the root causes of learning gaps. This may include exploring teacher training methodologies, instructional practices (e.g., overreliance on rote memorization), and potential limitations of the current curriculum structure in promoting critical thinking skills.

- **Teacher Effectiveness:** Address issues hindering teacher presence and supervision in struggling domains. This may involve ensuring adequate staffing levels, professional development opportunities to enhance teaching methods, and fostering a culture of collaboration and support among educators.

- **Continuous Monitoring and Evaluation:** Regularly monitor progress made through on-going assessments and adjust interventions as needed for continuous improvement.
- **Investigate Discrepancies:** Conduct further research to understand unusual results observed in certain governorates, such as the underperformance of the public sector in Nabatieh. This will provide insights into potential contextual factors influencing student learning outcomes within specific regions.

By implementing these comprehensive recommendations, Lebanon can work towards achieving equitable and improved learning outcomes for all students, regardless of background or location.

The following are recommendations for each subject:

A. Arabic language

- **Prioritize Critical Thinking:** Integrate inquiry-based learning, problem-solving activities, and analytical approaches to foster critical thinking and analytical skills in reading and writing.

- **Targeted Written Expression Strategies:** Implement specific interventions to improve written expression, emphasizing sentence and paragraph structure, accurate language usage, varied vocabulary, and clear organization.

- **Address Educational Disparities:** Bridge the gap between public and private schools through resource allocation, qualified teacher access, and tailored curriculum development.

- **Functional Application:** Emphasize the practical application of learned skills in various contexts, ensuring students can demonstrate competence in performance tasks and real-life situations.

- **Linguistic Competence:** Encourage students to actively utilize their linguistic knowledge in constructing written expressions, focusing on clear communication and avoiding rote memorization or imitation.

- **Teacher Training and Resources:** Equip teachers with effective strategies to address the identified weaknesses in analytical reading, written expression, and critical thinking.

- **Continuous Monitoring:** Regularly assess student performance across diverse skills and themes to track progress and identify areas requiring further intervention.

- **Collaboration:** Foster collaboration between policymakers, educators, researchers, and stakeholders to develop and implement effective solutions.

Additional Considerations:

- **Sector-Specific Interventions:** Acknowledge the performance differences between educational sectors and tailor interventions, accordingly, considering resource availability and specific needs.

- **Oral Assessment Integration:** Consider incorporating oral assessments in future evaluations to provide a more comprehensive picture of language proficiency.

B. English language

- **Targeted Reading Comprehension Strategies:** Implement teaching methods that emphasize inferential thinking, critical analysis, and making connections within descriptive texts.

- **Comprehensive Writing Development:** Design a structured curriculum that focuses on clear organization, accurate language usage, vocabulary expansion, and effective editing and proofreading practices.

- **Public Sector Support:** Allocate resources and implement targeted interventions specifically designed to address the challenges faced by public schools in English language education.

- **Teacher Training:** Provide training programs for teachers to enhance their skills in fostering clear and effective oral and written communication in students.

- **Governorate-Specific Strategies:** Develop and implement tailored strategies that address the unique needs and challenges of each governorate based on their performance and resource availability.

- **Collaboration and Monitoring:** Foster collaboration between policymakers, educators, and researchers to develop and implement effective solutions for improving English language proficiency across all sectors. Regularly monitor student performance to track progress, identify areas requiring further intervention, and measure the effectiveness of implemented reforms.

C. Mathematics

- **Prioritize Hands-on Learning:** Implement teaching methods that emphasize active learning, problem-solving activities, and direct teacher supervision in geometry and measurement classes.

- **Develop Geometric Thinking:** Integrate activities that encourage students to develop spatial reasoning and problem-solving skills specific to geometry.

- **Address Application Challenges:** Design curriculum elements that encourage students to apply their mathematical knowledge and skills in diverse real-world contexts.

- **Targeted Interventions:** Develop targeted interventions for public schools to address resource disparities and implement effective teaching strategies specifically tailored to their needs.

- **Governorate-Specific Strategies:** Implement strategies that address the unique challenges and needs of each governorate, considering factors like socioeconomic status and educational resources.

- **Holistic Approach:** Adopt a comprehensive approach that encompasses teacher training, curriculum development, resource allocation, and fostering a culture of scientific inquiry and critical thinking within the mathematics education system.

Additional Considerations:

- **Continuous Monitoring:** Regularly assess student performance across all domains and governorates to track progress, identify areas requiring further intervention, and measure the effectiveness of implemented reforms.
- **Collaboration:** Foster collaboration between policymakers, educators, researchers, and stakeholders to develop and implement effective solutions for improving mathematics education outcomes.
- **Equity and Access:** Ensure equitable access to quality mathematics education for all students, regardless of their socioeconomic background, geographic location, or learning style.

D. Science

Addressing these findings requires a multi-pronged approach:

- **Prioritizing Critical Thinking Skills:** Educational reforms should emphasize developing higher-order thinking skills through inquiry-based learning, problem-solving activities, and encouraging analytical approaches over rote memorization.
- **Teacher Training and Resources:** Equipping teachers with effective pedagogical tools and strategies specifically designed to foster critical thinking and scientific reasoning skills is crucial. This includes providing access to quality resources and professional development opportunities.
- **Addressing Educational Disparities:** Bridging the gap between public and private schools necessitates reforms in budget allocation, ensuring equitable access to quality learning materials and qualified teachers.
- **Governorate-Specific Interventions:** Tailored interventions are necessary to address the specific challenges faced by different governorates. This may involve targeted resource allocation, teacher training programs, and addressing regional factors like socioeconomic status and environmental influences.
- **Holistic Approach:** A comprehensive approach is essential to tackle the complex interplay of factors contributing to low critical thinking skills and educational disparities. This includes addressing teacher training, resource allocation, curriculum development, and promoting a culture of scientific inquiry and critical thinking within the educational system.

Additional Considerations:

- **Continuous Monitoring:** Regularly assessing student performance across diverse cognitive skills and themes is crucial to track progress and identify areas requiring further intervention.

- **Collaboration:** Collaboration between policymakers, educators, researchers, and stakeholders is vital to develop and implement effective solutions for improving science education outcomes.

E. French language

- **Prioritize Critical Thinking:** Implement inquiry-based learning, problem-solving activities, and analytical approaches to foster critical thinking and analytical skills.
- **Teacher Training and Resources:** Equip teachers with effective strategies to develop critical thinking and analytical skills in students.
- **Address Educational Disparities:** Bridge the gap between public and private schools through resource allocation, qualified teacher access, and improved curriculum.
- **Governorate-Specific Interventions:** Tailor interventions to address specific challenges faced by different governorates, considering socioeconomic factors and regional needs.
- **Holistic Approach:** Adopt a comprehensive strategy encompassing curriculum development, teacher training, resource allocation, and promoting a culture of critical thinking within the educational system.
- **Continuous Monitoring:** Regularly assess student performance across diverse skills and themes to track progress and identify areas requiring further intervention.
- **Collaboration:** Foster collaboration between policymakers, educators, researchers, and stakeholders to develop and implement effective solutions.

Additional Considerations:

- **Addressing Written Expression:** Implement targeted strategies to improve written expression skills, emphasizing clear organization, accurate language usage, and varied vocabulary.
- **Verbal Domain Assessment:** Integrate oral assessments in future evaluations to provide a more holistic picture of language proficiency.

General Conclusion

This comprehensive analysis examines student performance across three languages, Arabic, French and English and two non-linguistic subjects, Mathematics and Science shedding light on critical challenges and opportunities for improvement in the Lebanese educational system following the pandemic. The Arabic language diagnostic tests exposed a widespread struggle in writing skills across grades and educational sectors, calling for urgent interventions, tailored approaches based on language, in-depth research into root causes, and collaborative efforts for comprehensive solutions. Mathematics diagnostic tests revealed moderate learning loss in BE 3, particularly in Geometry and Measurement, while BE 6 exhibited an overall learning decline, emphasizing the necessity for targeted interventions. Disparities by domain, governorate, and sector/language prompt recommendations to focus on Geometry and Measurement, tailor interventions, address root causes, ensure teacher presence, and closely monitor progress. An overview of English language performance uncovered writing as the weakest area across grades and sectors, with public schools lagging behind private ones, and Beirut and Baalbek-Hermel consistently leading in performance. Recommendations stress writing improvement, diversified assessments, targeted interventions, teacher training, and continuous progress monitoring. French language learning loss analysis revealed stark disparities between public and private sectors, varying within governorates and skill areas. The study recommends efforts to bridge the public-private gap, shift towards critical thinking skills, and address regional and sectoral disparities in French language proficiency. Scrutinizing science education exposes knowledge gaps and critical thinking challenges in grades 3 and 6, with variability in theme-based performance, governorate disparities, and sectoral differences.

Mathematics- key Findings

- **Low Performance in Geometry and Measurement:** This analysis reveals a concerning decline in student performance in geometry and measurement, with 50% of the students scoring below average in both areas. This suggests a potential lack of proper teaching and guidance in these subjects, particularly regarding the use of tools and problem-solving approaches.

- **Disparity Between Arithmetic/ Algebra and Geometry/Measurement:** Students showed significantly better performance in arithmetic and algebra compared to geometry and measurement. This highlights the need for targeted interventions and adjustments in teaching methods to address the specific challenges associated with the latter subjects.

- Potential factors contributing to low performance include lack of direct teacher supervision, imbalanced time allocation, resource disparities between public and private schools, and regional variations across governorates.

English Language- Key Findings

- **Inference Challenges:** Students across various educational sectors, particularly in the public sector, struggled with inferential thinking in descriptive texts. This indicates a need for enhanced reading comprehension strategies that emphasize deeper analysis and critical thinking skills.

- **Written Expression Deficiency:** A significant decline in written expression proficiency was observed across all sectors. This highlights the need for a comprehensive intervention plan focusing on clear and effective communication, logical organization, vocabulary development, and error correction.

- **Disparity Between School Types:** Private schools, both private and free private schools, generally outperformed public schools in most English language skills. This suggests resource disparities and potential differences in teaching methodologies that require further investigation.

- **Governorate-Level Variations:** Significant discrepancies exist in English language proficiency across Lebanese governorates, with Baalbek-Hermel performing the best and Bekaa and Beirut showing the lowest scores. This necessitates tailored interventions and resource allocation considerations for each region.

Arabic Language- Key Findings:

- **Uneven Skill Development:** Students exhibited varying proficiency across different Arabic language skills. While phonological awareness and basic reading comprehension were relatively strong, there was a significant decline in reading analysis and written expression.

- **Written Expression Deficiency:** Written expression is the most concerning area, with a low average score, a high frequency of zero scores, and a low passing rate. This indicates widespread difficulties in composing clear, organized, and grammatically correct texts.

- **Analytical Thinking Gap:** Students struggle with higher-order thinking skills like analysis and evaluation, particularly in reading comprehension tasks.

- **Educational Disparities:** Private schools outperformed public schools across most assessed areas, highlighting disparities in resources and potentially instructional approaches.

- **UNRWA Schools Performance:** UNRWA schools showed generally comparable performance to private schools and slightly outperformed public schools in most areas.

French Language: Key Findings

Uneven skill development, public-private sector disparities, and regional variations underscore the need for pedagogical reforms, resource adjustments, and tailored interventions across governorates.

- **Uneven Skill Development:** Learners demonstrated varying abilities across different French language domains, with written expression being the most challenging. They exceled in distinguishing sounds and dividing words into segments, performed moderately well in comprehension tasks, but struggled with analysis and evaluation questions.

- **Narrative vs. Descriptive Texts:** Learners found it easier to understand narrative texts compared to descriptive ones, highlighting a potential need for stronger instruction in descriptive text analysis.

- **Public vs. Private Sector Disparity:** Private schools consistently outperformed public schools in all assessed areas, likely due to resource disparities and educational approaches.
- **Governorate-Level Variations:** Significant discrepancies exist between governorates, with the South Governorate facing the most significant challenges and Baalbek-Hermel showing the best performance in the public sector.

- **Critical Thinking Skills Deficiency:** Learners generally struggled with higher-order thinking skills like analysis and evaluation, indicating a need for pedagogical reform.

Science: Key Findings:

This comprehensive analysis of science education performance reveals several key findings:

- **Performance Variations Across Themes:** Learners exhibited varying levels of proficiency across different science themes, with the 'Plants' theme demonstrating the highest average scores and the 'Matter and Energy' theme showing the most significant spread.

- **Scientific Thinking Skills:** Overall, learners struggled more in practicing scientific thinking skills compared to mastering acquired knowledge. This is evident across all themes, with the 'Plants' theme showing the lowest average and the 'Earth and the Universe' theme also exhibiting lower scores.

- **Educational Sector Disparities:** Private schools consistently outperformed public schools in all assessed areas, likely due to differences in learning materials, flexibility, and resource allocation.

- **Governorate Variations:** Significant disparities exist between governorates, with Beirut consistently achieving the highest average scores and the North Governorate showing the lowest performance in most areas.

- **Cognitive Skills Breakdown:** The highest success rate was observed in information retention (76.8%), while the lowest lied in mastering acquired knowledge (57.5%). Scientific communication and analysis also demonstrated lower success rates compared to information retention.

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Appendix

Competency Domains for Life Sciences Assessments
Overview

- Modified Domains of Competencies have been introduced, based on Decision No. 631/m/2016 (modified by Decision No. 142/m/2017).
- These domains align with the General Education Curriculum and its evaluation philosophy.
- They aim to assess students' knowledge, scientific reasoning, and communication skills comprehensively.

Domains of Competencies

1. Mastering Acquired Knowledge
    - Assesses ability to apply knowledge to similar and new situations.
2. Practicing Scientific Reasoning
    - Assesses ability to collect information, apply scientific reasoning steps, and make critical decisions.
3. Mastering Communication Techniques
    - Assesses ability to express scientific concepts correctly and effectively.

Assessment Structure

- Exams can assess one or multiple domains, with exercises potentially combining competencies.
- Mark distribution respects the weighting specified in ministerial decisions.
- Question types:
    - Multiple Choice Items (MC)
    - Constructive Response Items (CR)
- Item distribution considers:
    - Topic representation in the curriculum
    - Topic complexity
    - Time allocated for topic acquisition
    - Domains of competencies (9 items for knowledge, 8 for reasoning, 3 for communication)

Cognitive Levels

- Items are aligned with OECD's levels of cognitive demand:
    - Low: Recalling facts, locating information.
    - Moderate: Describing phenomena, selecting procedures, organizing data.
    - High: Analyzing complex data, synthesizing evidence, developing plans.

Key Verbs for Assessment

- Knowledge and Reasoning: Justify, identify, determine, explain, compare, draw a functional diagram, etc.

- Reasoning: Pose a problem, formulate a hypothesis, design an experiment, analyze, interpret, conclude, etc.
- Communication: Describe, draw, establish, schematize, etc.

Additional Notes

- Multiple verbs can assess the same competency.
- The distribution of items among topics and domains reflects curriculum emphasis and cognitive demands.

	Plantes	Animaux	Homme	Matière et Energie	Terre et univers	Form of Question
Domaine A 12 items	Ex1.1	Ex1.2 Ex1.3	Ex1.4 Ex1.5	Ex 1.6 Ex 1.7 Ex 1.8 Ex 7		9 Qcm
	Ex 2		Ex 10.2 Ex 12.1			3 C
Domaine B 11 items	Ex 3 Ex 5.1	Ex 4 Ex 8	Ex 12.2	Ex 11	Ex 13.1 Ex 13.2	8 Qcm
	Ex 5.2		Ex 12.3		Ex 13.3	3 C
Domaine D 3 items		Ex 6	Ex 9			2 QCM
			Ex 10.1			1 C
26 items	**5**	**5**	**8**	**5**	**3**	

Mathematics Screening Tools Framework

Specificity of Mathematics in the Lebanese Curriculum

The current Lebanese curriculum (1997) serves as a pivotal educational policy tool, aligning learning with societal and individual relevance. Prioritizing the cultivation of intellectual autonomy and critical reflection skills, the curriculum aims to instill confidence and foster competencies essential for functioning in modern society. Specifically, mathematics is positioned as a fertile ground for nurturing critical thinking, scientific integrity, objectivity, rigor, and precision.

Within this discipline, students are encouraged to engage in a scientific approach, developing critical thinking and mathematical reasoning by starting with real-life situations. The curriculum emphasizes active student involvement, shifting from the passive reception of pre-formed mathematical knowledge to an approach where students construct their understanding through problem-solving. Connecting content to other disciplines is encouraged to enhance key problem-solving skills.

General Objectives

The Lebanese mathematics curriculum outlines general objectives for each cycle, focusing on three key areas:

A. Mathematical Reasoning

Recognize tendencies or relations in sequences of simple facts.

Justify answers.

Find connections between the real world and mathematical models.

B. Problem-Solving

Take initiatives.

Use appropriate mathematical techniques in solving daily life problems.

C. Communication

Use pictorial or symbolic representations.

Express oneself correctly, both orally and in writing.

The curriculum underscores the significance of communication, training students to encode and decode messages, formulate and express information using mathematical tools, promoting intuition, imagination, creativity, and intellectual pleasure.

Evaluation Guide for Mathematics

The evaluation guide, developed by CRDP (2000), serves as a comprehensive tool to assess students' learning and track their progress over academic years. It explicitly outlines teaching areas, domains, and competencies, facilitating the evaluation of students' achievements.

This study delves into the assessment of fourth, seventh, and tenth-BE students in mathematics, focusing on learning losses induced by the pandemic and subsequent school closures. Approximately 80% of areas and skills specified in the national evaluation guide were covered in the developed tests.

Class: BE 4

Duration: 60 minutes

Domains, Competencies, and Content:

Knowledge of Numbers and Numerical Activities

1.1 Produce different representations of a number.

Represent a natural number in different aspects.

Write a decimal number in its expanded form.

1.2 Compare and arrange numbers.

Compare two numbers.

1.3 Perform operations on numbers.

Add, subtract, multiply, and divide two integers.

Geometric Activities and Measurement

2.1 Describe polygonal figures.

Recognize/draw a particular quadrilateral.

2.2 Reproduce polygonal figures.

Draw the midpoint of a segment.

2.3 Exploit measurement concepts.

Recognize/convert units of measurement.

Class: BE 7

Duration: 90 minutes

Domains, Competencies, and Content:

Knowledge of Numbers and Numerical Activities

1.1 Produce different forms of numbers.

Represent a rational number in different aspects.

Write a decimal number in its expanded form.

1.2 Establish relations on numbers.

Compare two rational numbers.

1.3 Perform different calculations.

Add, subtract, multiply, and divide rational numbers.

Geometric Activities

2.1 Construct geometric figures under constraints.

Recognize/draw lines and angles.

2.2 Compare and contrast properties of geometric figures.

2.3 Use properties of geometric figures.

Calculate perimeter, area, and length of a segment.

Item and Competency Classification

To assess students' achievements, each item was classified according to competencies associated with the respective domains. The evaluation involves assessing dimensions related to mathematical content and problem-solving skills.

Likert Scale

The Likert scale, incorporating codes 0, 1, 2, 3, 4, and 99, is employed to evaluate students' responses in both multiple-choice questions and exercises. Codes range from indicating incorrect and unjustified answers to correct responses.

This comprehensive framework provides a structured approach to evaluating students' mathematical proficiency while considering the evolving educational landscape, including challenges posed by the pandemic and school closures.

Introduction:

This document outlines a framework for the development and implementation of mathematics screening tools in Lebanese schools. It focuses on assessing learning losses experienced by students in BEs 4, 7, and 10 following the pandemic and school closures.

Theoretical Background:

Lebanese Mathematics Curriculum: The current curriculum emphasizes critical thinking, problem-solving, and communication skills within various mathematical domains.

General Objectives: These objectives, outlined for each cycle, prioritize mathematical reasoning, problem-solving, communication, spatial awareness, numerical competency, and measurement.

Evaluation Guide: This guide, developed by the CRDP, defines domains, competencies, and dimensions (content) for each educational cycle.

Assessment Design:

Target BEs: BE 4 (cycle I), BE 7 (cycle II), and BE 10 (cycle III)

Content: Coverage of approximately 80% of areas and skills outlined in the national evaluation guide, aligned with program dimensions, school manuals, and relevant circulars.

Domains and Competencies: Each BE focuses on specific domains and competencies, as detailed in Tables 2, 3, and 4.

Item Distribution: At least three items are assigned to each dimension to ensure comprehensive coverage. Examples of item classification are provided in Table 5.

Problem-Solving and Communication: This domain is incorporated by linking problem-solving skills to the dimensions associated with mathematical domains. Table 6 illustrates the competencies for BE 4.

Likert Scale: This scale (Table 8) helps categorize student performance on both multiple-choice and open-ended questions.

Implementation and Use:

Piloting and Validation: The developed tests should be piloted and validated on representative samples of students before widespread implementation.

Data Analysis and Interpretation: Collected data will be analyzed to identify learning losses, patterns, and areas requiring targeted interventions.

Continuous Improvement: The framework will be reviewed and updated periodically to ensure its effectiveness in evaluating student learning and informing educational decisions.

Conclusion:

This framework provides a structured approach for assessing mathematics learning losses in Lebanese schools. By focusing on key domains, competencies, and aligned content, it offers a valuable tool for monitoring student progress and informing future educational strategies.

French language test

Assessment Components:

1. Phonological Awareness:

- Objectives: Assess mastery of grapheme-phoneme correspondences and sound recognition.
- Exercises:
    - Identifying the number of syllables in words.
    - Identifying words ending with the same sound.
    - Optional: Additional exercises could delve deeper into sound manipulation, blending, and segmentation for a more comprehensive assessment.

2. Reading Comprehension:

- Texts: Two diverse texts of appropriate word count (111 and 117 words) for each BE level.
- Question Types: Varied closed-ended questions (multiple choice, matching, true/false) tailored to specific comprehension levels:

- Explicit: Focus on factual information directly stated in the text.
- Inference: Test ability to draw conclusions based on implied meaning.
- Reflection: Encourage critical thinking and interpretation of the text's message.

3. Writing Production:

- Analysis: This section currently lacks details; further specifics on the proposed exercises are crucial for transparency and completeness.
- Suggestions: Introduce a variety of writing tasks (e.g., narrative, descriptive, argumentative) aligned with age-appropriate complexity and official exam descriptors. Consider including open-ended prompts to assess diverse writing styles and critical thinking skills.

Strengths:

- Aligned Themes: "Child and the environment" provides a relatable and developmentally appropriate context for assessment.
- Balanced Assessment: Includes diverse question types and targets various comprehension levels.
- Detailed Criteria: Clear scoring system with well-defined criteria for reading comprehension and writing production ensures consistent evaluation.
- Progression Tracking: Aims to identify student strengths, weaknesses, and progression over time.

Arabic

The assessment tools

Arabic language

As part of this project, we targeted three key stages of primary education (BEs 4, 7, and 1) as transition points between different educational levels. The tools were designed to measure the extent to which students have acquired the following learning outcomes in the Arabic language:

Reading comprehension: understanding the meaning of a text, including its literal and implicit meanings.

Writing: producing different types of written texts, including descriptive and narrative texts.

The tools were developed in line with the Lebanese national curriculum, which has been revised. They also took into account the following considerations:

Students with special needs: The project has already taken steps to ensure that the assessment tools are inclusive and do not exclude any students. These steps include the development of specific specifications for students with visual or learning disabilities.

Accurate and reliable data: The tools are aligned with the national curriculum so that the results can be interpreted and used to make decisions about student learning based on accurate and reliable data.

Possible and unbiased elements: The tools were designed to be as possible and unbiased as possible, which means that they do not contain any cultural, linguistic, or other biases that could make it difficult for some students to succeed or achieve the goal.

Simple and clear instructions: The instructions for the assessment tools are simple, clear, and easy to understand, making it easy for all students to understand what is required to take the necessary action and provide the appropriate answer.

Specific specifications of the assessment

The assessment tools took into account the following characteristics of the texts to be used (literary genres, stylistic patterns, number of words in each text) as well as the characteristics of the questions on reading comprehension (number of questions in each text, level of difficulty, and the fields they cover according to Bloom's cognitive taxonomy).

In addition, a set of exercises of different types were proposed to assess the efficiency of writing production (guided writing), to help students achieve the objectives of guided writing such as:

Relevance: 30%

Language accuracy:

Distinction and creativity: (if applicable)

Complete production: 70%

The results of the assessment were analyzed based on the following percentages:

BE	Level	%
BE 4	Descriptive/Narrative	40%
BE 7	Descriptive/Narrative	30%
BE 1	Descriptive/Imaginative	25%

The following is a description of the specific assessment for each stage:

BE 4

Duration: 1.5 hours

Language: Arabic

Focus: The animal world

Phonemic awareness:

Number of questions: 2

Types of questions: Fill in the blanks with long sounds

Color the two words that start with the same sound

Reading comprehension:

Number of texts: 2

Number of words in each text: 70

Number of questions in each text: 5-6

Types of questions:

Fill in the blanks

Choose from multiple answers

Link the pictures with the appropriate words

Order the events chronologically

Distinguish between the literal and figurative meanings

Prefer one of the two cats and explain why

Writing:

Number of exercises: 3

Types of exercises:

Express with a sentence about each of the two pictures

Complete the story with three sentences at least

Write a short story (5-7 lines)

BE 7

Duration: 2 hours

Language: Arabic

Focus: The narrative story/The child and joy

Reading comprehension:

Number of texts: 2

Number of words in each text: 153

Number of questions in each text: 5-7

Types of questions:

Choose from multiple answers

Fill in the blanks to get the correct conjugation

Change the context to the feminine

Find a simile and identify its elements

Change the place and invent new events

Writing:

Number of exercises: 4

Types of exercises:

Infer the external and internal qualities of the father

Choose three reasons that make the learner feel belonging to the family

Describe one of the family members

Write a short story entitled "A friend in time