Ministry of Education
& Higher Education

PISA2022
National Report for Palestine

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CHAPTER 1
PALESTINE AND PISA

This chapter describes PISA and explains how this study can help identify areas to improve students' achievement, attainment, well-being, and engagement with learning. PISA can also be used to compare the education system in Palestine to other countries. The last section of this chapter introduces the structure of the national report.

About PISA 2022
- PISA 2022 was the first cycle of the study in which Palestine participated.
- In Palestine, PISA 2022 was administered on computers.
- Mathematics was the main assessment domain, while reading and science were minor domains. Palestine also participated in the optional cognitive assessment of creative thinking.
- PISA 2022 allows insights into the effects of school closures due to COVID-19 and other reasons.

Note:
Data sources for all tables in this chapter are from the Minsitry of Education and Higher Education 2022 and PISA2022 data base.

In Palestine during 2022, about 8,000 15-year-old students who are in 8th grade or above across the country took a two-hour test in Arabic reading, mathematics, science, and creative thinking. These tests were not directly linked to Palestine's school curriculum – rather, they were competency-based and internationally comparable. The tests were designed by the Organization for Economic Co-operation and Development (OECD) to assess the extent to which students in Palestine can apply their knowledge to real-life situations and be equipped for full participation in society. In addition to the tests, contextual questionnaires were administered to students and school principals. Data from these questionnaires are useful in analyzing and interpreting the test results. These tests and questionnaires are part of an international large-scale assessment of learning which is managed by the OECD and is called the Program for International Student Assessment or PISA for short.

What is PISA?

Launched by the OECD in 1997, PISA assesses 15-year-old students' proficiency in reading, mathematics, and science, and measures students' skills in applying what they have learned in school to real-life situations. PISA data collections have been completed in 2000, 2003, 2006, 2009, 2012, 2015, 2018, and 2022; the PISA 2025 cycle is under way. PISA is an on-going program that offers insights for education policy and practice, and that helps to monitor trends in students' acquisition of skills and knowledge across countries and in different demographic subgroups within each country. Through PISA results, policy makers can gauge the skills and knowledge of students in their own countries in comparison with those in other countries, set policy targets against measurable goals achieved in other education systems, and learn from policies and practices of countries that have demonstrated improvement. This kind of international benchmarking is more relevant now than ever, given that every country in the world has signed up to the Education Sustainable Development Goal (SDG) agenda adopted by the United Nations in 2015, which is about ensuring that every child and young person achieves at least basic levels of proficiency in reading and mathematics.

PISA does not just ascertain whether students can reproduce knowledge; it also examines how well students can extrapolate from what they have learnt and can apply that knowledge in unfamiliar settings, both in and outside of school. This approach, which is described in more detail in Chapter 2, reflects the fact that modern economies reward individuals not for what they know, but for what they can do with what they know.

Through questionnaires distributed to students and school principals, PISA also gathers contextual information about students' home background, their approaches to learning and their learning environments; these questionnaires are described in more detail in Chapters 3, 4 and 5. Combined with the information gathered through the various questionnaires,

PISA provides two main types of outcomes/indicators:

- basic indicators that provide a baseline profile of skills and knowledge of students.
- indicators derived from the questionnaires that show how such skills relate to various demographic, social, economic, and educational variables and to broader outcomes of education, such as attainment and well-being.

PISA is a system-level assessment that facilitates international comparison of countries' education systems using common items, used by all participating countries and economies, which are all located on a common measurement scale. PISA's design and approach are optimized to obtain estimates at the system level by applying strict technical standards for the sampling of schools and students within schools, sampling procedures are quality assured, and the achieved samples and corresponding response rates are subject to an adjudication process that verifies that they have complied with the standards set.

PISA scores can be located along specific scales developed for each subject area, designed to show the general competencies tested by PISA. In each test subject, the score for each participating country is the average of all student scores in that country. PISA mean scores can be used to rank participating countries and economies according to their performance in reading, mathematics, and science. PISA does not give a collective score for all subjects combined; rather it gives a score for each domain, and this can be used to determine rankings by the mean score of each subject area.

PISA students' performance is evaluated on a scale ranging from 0 to 1000 scores, and achievement averages are calculated using item response theory (IRT). For each subject assessed, PISA reports the results of students on a scale divided into six proficiency levels. Assessment tasks of similar difficulty are used to describe each proficiency level in terms of what students know and can do. The performance of an education system in PISA can therefore be described in terms of the skills and knowledge that students have mastered by age 15, providing a richer description than a single number or rank (Chapter 2 provides full descriptions of these levels).

Furthermore, in order to offer insights for education policy and practice, PISA collects a wealth of contextual information about students, schools, and countries, which can be used to highlight differences in performance and identify the characteristics of students, schools, and education systems that perform well under particular circumstances.

Palestine's participation in PISA 2022

PISA 2022 was the first cycle of the assessment in which Palestine participated. This participation took place under harsh conditions because of the Israeli occupation procedures, the financial crisis faced by the country, and the teacher strike that lasted more than 40 days during the 2021/2022 school year in addition the COVID-19 pandemic consequences.

PISA evaluates students aged between 15 years and three months and 16 years and two months at the time of the evaluation, who are studying in 8th grade or above (hereafter "15-year-old students"). The distribution of PISA-eligible students across grade levels at a national level during the 2021/2022 school year is shown in Table 1.

Table 1.1. Distribution of PISA-eligible students across grade levels.

Grade	Number of students	Percent (%)
8	594	1
9	5943	6
10	84783	86
11	7152	7
Total	98472	100

In Palestine, PISA was administered between the 18th and the 28th of April 2022. The sample of schools was selected by the PISA International Consortium in charge of the study. The sample was based on a complete list of all schools with eligible students in the country submitted by the Ministry of Education and Higher Education, and of complete listings of 15-year-old students in these schools submitted by the school administrators. The data are therefore representative of the entire population of 15-year-old students, grade 8th and above, in the country.

In Palestine, there was a total of 3,142 schools during the 2021/2022 school year. These schools are categorized as public, Private, and UNRWA (United Nations Relief and Works Agency for Palestine Refugees in the Near East) and are distributed according to their Supervising Authority and School Gender. The details are provided in Table 2 below.

Table 1.2. Distribution of schools based on Supervising Authority and School Gender.

Authority	Boys schools	Girls schools	Co-ed schools	Total
Public	908	851	548	2307
UNRWA	155	120	99	374
Private	47	32	382	461
Total	1110	1003	1029	3142

The number of students within all schools in Palestine during the 2021/2022 school year was 1,358,410. Table 3 shows the distribution of students by education level and student gender.

Table 1.3. Distribution of students by education level and student gender.

Education level	Boys	Girls	Total
Basic (1st to 4th Grade)	553361	539211	1092572
Secondary (5th to 10th Grade)	119206	146632	265838
Total	672567	685843	1358410

Rigorous sampling procedures according to PISA's technical standards were implemented in the selection of the samples to ensure the results are comparable, reliable, and valid. The Palestine sample consisted of 7905 students studying in 8th grade or above from 273 schools throughout the country.

A limited number of schools and students were excluded from PISA. Acceptable exclusions represent less than 5% of the target population and must be justified. In Palestine, there are special education schools that cater for students with disabilities. Out of the 1587 schools in the study population, there are seven special education schools. These schools have a total of 37, additionally, 82 students with disabilities within the sampled schools were excluded from the assessment. As a result, the total percentage of exclusion in Palestine is 1.4%. The numbers and percentages of 15-year-old students sampled and assessed at each grade level are presented in Table 4.

> **Note:**
> Numbers and percentages are unweighted, weighting will be considered in the analysis.

Table 1.4. Numbers and percentages of 15-year-old students sampled and assessed at each grade level.

Grade	Number of students sampled	(%) Percent
8	9	0
9	270	3
10	7054	89
11	572	7
Total	7905	100

Table 1.5. Distribution of 15-year-old students assessed by region.

Region	Number of students	(%) Percent
The West Bank	5000	63
Gaza	2905	٣٧
Total	7905	100

Table 1.6. Distribution of 15-year-old students assessed by gender.

Region	Number of students	(%) Percent
Girls	4427	56
Boys	3478	44
Total	7905	100

The sample included public and private schools. The UNRWA offer Education for Palestinian refugees from 1st to the 9th Grade, after this level student move to public and private school.

If the number of 15-year-old students in each sampled school exceeded 35, a random sample of 35 students was selected to participate in the assessment. Based on the request of the Ministry of Education and Higher Education, subsamples were added to the national sample, to provide comparable indicators about the quality of education in such schools and to evaluate the impact of some educational interventions (JICA schools[1]) and school character (Area C schools[2]) on student learning and beliefs. Table 6 provides additional information about the schools in the subsamples.

Table 1.7. Distribution of the Sub-Sampled Schools.

Type of School	Number of schools
Area C schools	31
JICA schools	43
Total	74

Why Palestine participated in PISA 2022

One of the main reasons that may justify the participation of Palestine in PISA 2022 was to provide quantitative and comparable indicators about its education system, such indicators that tackle the performance of students in comparison with international benchmarks that may help improve learning and teaching practices at school level. Palestine also considers participating in PISA as a learning process from regional and international best practices to develop its system.

PISA 2022 results also provide curriculum developers and teacher trainers with rich data that may help improve both national curriculum and teacher training programs. The results are also useful in advancing policy-oriented research pillars at the Ministry of Education and Higher Education, and academia. Last but not least, PISA results provide more insights into students' skills needed to succeed in tomorrow's world as set out in the Education SDG Framework (ensuring that all students have the knowledge, skills, and capabilities necessary to achieve their full potential, contribute to an increasingly interconnected world, and live a fulfilling (OECD, 2018)

Learning assessment in Palestine

Assessing student performance is vital for improving education systems around the world, including the education system of Palestine. National Assessment Tests (NATs) is the only sample-based national large-scale assessment in Palestine, and its data inform reforms in the education system and help identify further education opportunities. NATs has been conducted since 2008 on a two-year cycle, assessing students in core subjects (Arabic language, Math, Science and English) in pivotal classes (5th, 9th, 6th, and 10th grades). School-based assessment is another type of assessing students by which teacher-developed tests are used to provide indicators about teaching and learning activities at the school level.

State examinations are the third major type of learning assessment in Palestine. These examinations, called Tawjihi, are high-stake, certification exams implemented at the end of secondary school cycle.

The National Assessment and Examination system assesses progress within Palestine's education system, while PISA is a global program that compares Palestine's education system with that of other countries. PISA uses standardized tests that go beyond rote memorization and focuses on students' capacity to apply knowledge to real-life situations, think critically, and tackle problems. The Ministry of Education and Higher Education in Palestine believes that a combination of national assessments, state examinations, classroom assessments, and international large-scale assessments, like PISA, offers a comprehensive evaluation of educational outcomes, including student achievement and other contextual indicators that have the potential to inform educational policies and contribute to the ongoing efforts to improve education quality and equity in Palestine.

Reporting of results

In Palestine, learning assessment findings used to be reported at different levels in the system. At the central level, a short leaflet with main findings used to be disseminated to the policy committee, director generals, and specialized departments, more detailed results used to be shared with district offices and a school report used to be send to all sampled schools.

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1 JICA schools: Schools under JICA -PICMAS program (https://www.jica.go.jp/Resource/project/english/palestine/007/index.html)
2 Area C schools: Schools affected by Israeli forces (https://www.ochaopt.org/content/access-education-area-c-west-bank)

For PISA 2022, and since it is Palestine's first participation, the national report, which has been developed by the Center for Educational Research and Development (CERD) team in collaboration with the OECD and technical support from the World Bank, will be published and uploaded on the Ministry's webpage.

As part of the collaboration between the Ministry of Education and Higher Education, and the World Bank, under the Supporting an Education Reform Agenda for Improving Teaching, Assessment, and Career pathways (SERATAC) project, experts from the Bank have supported the CERD team by strengthening its capacities for data analysis, interpretation of PISA results, report writing, and the production of tailored communication products to support the dissemination of PISA results and policy messages.

This national report and other communication products present Palestine's results in the context of the countries and economies that participated in PISA 2022 and include relevant analyses and information based on the policy priorities of Palestine. The report constitutes a summary of key results and analysis designed to stimulate a constructive debate on improvement of educational outcomes and reforms, building upon and enriching already existing data and evidence from national, regional, or international sources. The national report is aimed at key stakeholders in Palestine and is designed to support the discussion of the results and implications for education policies and practices. Stakeholders include students, parents, teachers, teacher unions, school principals, academia, civil society, media, national research centers, and administrators at the school and district levels.

This report is published based on the OECD's release of the first international PISA 2022 results and data products.
These include the first two volumes of its international report on PISA 2022:
- **Volume I** on student performance in mathematics, reading and science and equity in education;
- **Volume II** on resilient systems, schools, and students; the publication of its initial PISA 2022 data set; and an interactive web-based tool to explore the dataset. These products are freely accessible on the OECD website[3] to enable all stakeholders, and independent researchers, to conduct their own analyses and contribute towards a policy dialogue for educational improvement.

Structure of Palestine's National Report

Through the measure of proficiency in the PISA 2022 test, this report provides a rigorous assessment of how much students can apply what they have learned. This measure is based on frameworks for assessing mathematics, reading, and science literacy in PISA (OECD, 2023). The link with the PISA scales enables the results to be comparable with other countries participating in PISA 2022. In addition, the information collected for sampling operations in PISA provides comparative indicators about the attainment of 15-year-old youth in participating countries. Finally, self-report measures based on questionnaires can be used to indicate the level of well-being, and students' future aspirations.

The questionnaire framework for PISA 2022 is based on international research and it identifies key aspects of the school, family, and community environment as well as other important educational resources that are strongly associated with educational success. These resources and processes are the foundations for success in any educational system.

The presence of these educational resources and characteristics of the learning environment in the life of 15-year-old students is measured through questionnaires administered to participating students, but also through information collected from school principals and from national sources of statistical information. The PISA 2022 national reporting places great emphasis on equity in education. Equity in education is a central and long-standing focus of PISA and a major concern of countries around the world. The United Nations SDGs advocate for "ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all."

In this report, the educational outcomes, resources, and opportunities in Palestine are systematically compared with other countries and within Palestine itself across several demographic factors. These demographic factors are student gender (boys and girls); student socio-economic profile.
As for Palestine, the national sample includes other factors that may help providing insight indicators about schools under certain conditions like schools in area C, and schools within the JICA project, a project aiming to advance math and science teaching practices.

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3 www.oecd.org/pisa

The remainder of this report is structured as follows:

- **Chapters 2 and 3** discuss the attainment, learning outcomes, and outcomes related to student well-being (life satisfaction), expectations for the future, and attitudes towards school at age 15 in Palestine.
- **Chapter 4** reports on students' experiences related to learning during school building closure due to the Covid-19 pandemic. This chapter discusses: length of school closure; learning and learning support during school closure; and students' feeling and impressions about school closure. The chapter concludes with the relationships between education outcomes and student learning-related experiences during school closure.
- **Chapters 5** reports on whether the foundations for success are present in Palestine and in all schools, i.e., the extent to which resources invested in education – human, material, time resources – create good conditions for learning; and the extent to which the broader classroom, school, and social contexts (school climate) support educational outcomes for all.
- **Chapter 6** summarizes the findings from PISA 2022, relates them to the broader set of evidence about the effectiveness and efficiency of policy interventions, and cast results in comparative perspective to stimulate an evidence-based discussion on policy reform in education.

CHAPTER 2
ATTAINMENT AND ACHIEVEMENT OUTCOMES AT AGE 15 IN PALESTINE

This chapter discusses the PISA 2022 results in Palestine and what they reveal about the attainment and achievement outcomes in the country in compared with OECD and the selected benchmarking countries. The chapter then presents the results - in particular, the levels of performance in mathematics, reading and science – and discusses the performance differences by students' gender, school region, school authority and the school gender.

Notes:
- Numbers in all figures and tables in this chapter are rounded to the nearest integer.
- Source of all data in this chapter are from PISA 2022 database.

A central preoccupation of policy makers in Palestine and around the world is to equip citizens with the knowledge and skills necessary to achieve their full potential, to contribute to an increasingly interconnected world, and ultimately to convert better skills into better lives. The measures of student proficiency included in PISA were developed to monitor how close countries are to achieving these goals.

Skill requirements and the contexts in which skills are applied evolve fast. For this reason, PISA revises the definitions and frameworks behind each of its literacy measures every nine years, to make sure they remain relevant and future-oriented (see Box 2.1). By paying appropriate attention to the evolving nature of our societies, PISA invites educators and policy makers to consider quality of education as a concept and a goal that continue to evolve. As with previous cycles of PISA, the PISA 2022 cognitive frameworks and the framework for questionnaires have been reviewed and updated by a network of international experts who have experience with PISA.

The PISA 2022 framework for assessing mathematics has been developed as the major domain and reflect a balance between mathematical reasoning, problem solving processes, mathematical content, and contexts. The PISA 2022 frameworks for reading and scientific literacy are based on the PISA 2015 and PISA 2018 frameworks respectively.

Box 2.1 What does PISA measure?

Each round of PISA measures students' proficiency in mathematics, reading and science. In each cycle, one of the domains is given a particular focus. In PISA 2022, mathematics is the main focus. The frameworks for all three domains emphasise students' capacity to apply knowledge and skills in real-life contexts: students need to demonstrate their capacity to analyse, reason and communicate effectively as they identify, interpret and solve problems in a variety of situations. The broad definitions of the domains used in PISA 2022 are as follows:

Mathematical literacy is defined as an individual's capacity to reason mathematically and to formulate, employ, and interpret mathematics to solve problems in a variety of real-world contexts. It includes concepts, procedures, facts and tools to describe, explain and predict phenomena. It assists individuals to know the role that mathematics plays in the world and to make the well-founded judgments and decisions needed by constructive, engaged and reflective 21st century citizens.

Reading literacy is defined as an individual's capacity to understand, use, reflect on and engage with written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society.

Scientific literacy is defined as the ability to engage with science-related issues, and with the ideas of science, as a reflective citizen. A scientifically literate person is willing to engage in reasoned discourse about science and technology which requires the competencies to explain phenomena scientifically, evaluate and design scientific enquiry, and interpret data and evidence scientifically. Student proficiency in each domain can be interpreted in terms of proficiency levels, with Level 6 being the highest Level on the PISA scales and Level 1 and below the lowest. Level 2 is a particularly important threshold, as this marks the baseline level of proficiency at which students begin to demonstrate the competencies that will enable them to participate effectively and productively in life as continuing students, workers and citizens.

PISA provides more than an assessment of the quality of education. It selects the participants who take the test through scientific sampling procedures, first choosing the schools to participate, and then selecting students within those schools. Students listed in PISA sampling forms must be 15-year-olds enrolled in school in Grade 7 and above. The information provides for its sampling operations also provides comparative indicators about the attainment of 15-year-olds in participating countries.

Furthermore, PISA indicators can also be used to assess equity in education— inclusion and fairness—using the rich information available in the PISA database on students' and schools' backgrounds, collected with contextual questionnaires, such as students' gender, socio-economic status. Inclusion refers to the objective of ensuring that all students have access to high-quality education and attain a minimum level of skills.

The discussion of PISA results for Palestine in this chapter starts by comparing the students' percentages in each proficiency level for mathematics, reading and science in compared with the OECD average and selected benchmarking countries. The chapter also compares student achievement in mathematics, reading and science in Palestine, OECD and other benchmarking countries. The final section presents the students performance according, school region (the West Bank and Gaza), school authority (public & private) and school gender (boys, girls, and co-ed).

Enrolment and attainment at age 15: A PISA perspective

What proportion of Palestine's 15-year-olds does the PISA sample represent?

The students included in the list to draw the participants to the PISA test had to be 15 –year- olds and be born between January 2007 and December 2007 and be enrolled in school at the time of the test, in Grade 7 or higher. This number, known as Coverage Index 3, is obtained by dividing the number of students represented by the PISA sample (participating students, weighted by their sampling weights), by the total number of 15-year-olds estimated from demographic projections. Palestine's coverage index 3 of 78% (OECD, 2023) compares to an OECD average of 88% (OECD, 2019). While a small proportion (0.32%) of students in Grade 8 and above may be excluded from PISA because they have disabilities, the largest share of non-covered 15-year-olds is made up of children who are not in school.

> **Box 2.2 Coverage rate in Palestine**
> The coverage rate in Palestine, which stands at 78%, is roughly in line with the enrolment rate of 77.8% that can be derived from the administrative sources of the country.

The level of attainment and participation in education at the age of 15, reflected in coverage rates and in the distribution of PISA students across grades, provides important contextual information for interpreting the mean performance and variation among the students assessed in Palestine. A larger proportion of low-performing students will be included in PISA samples. In Palestine may be found that 15-year-olds student attending across a relatively wide range of school grades. Figure 2.1 shows that most of the Palestinian students (89%) attending 10th grade. At the OECD countries the proportion is 55%. Additionally, 8% of 15-years Palestinians students attending Grade 11 (One year ahead of track) which is the same proportion at the OECD countries.   Only 3% of Palestinians students against 33% in the OECD average who attending 9th grade (Fiqure2.1).

Figure 2.1. Grade distribution in Palestine, OECD, and selected comparison countries.
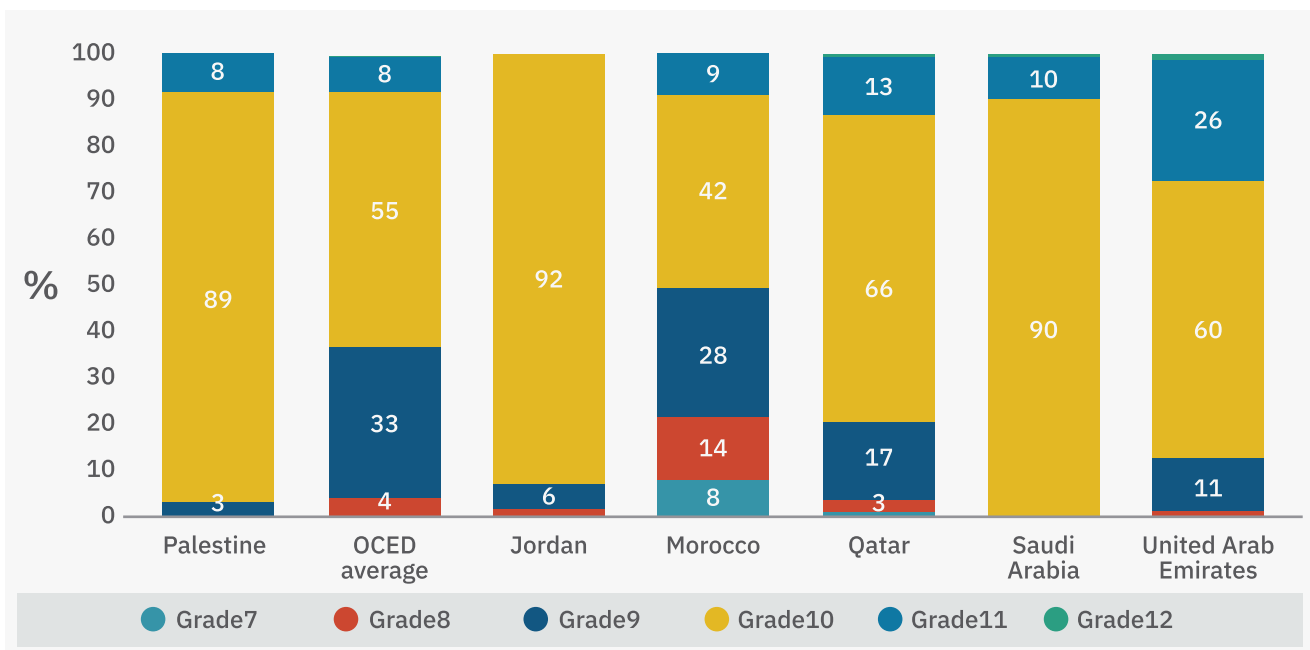
Grade repetition in Palestine

At age 15, students in Palestine who are "on track" in their progress are typically in Grade 10. However, some students fall behind for various reasons, especially because of grade repetition. In Palestine, the rate at which students have repeated a grade, whether it be in primary, lower secondary, or upper secondary school, stands at 11%, which closely aligns with the average percentage observed across the OECD, amounting to 9% (Figure 2.2). Generally, in all countries covered by PISA, variation in grade levels is strongly associated with the experience of grade repetition (OECD, 2016b, p. Figure II.5.2): students who are behind track are most likely to report having repeated a grade.

Figure 2.2. Grade repetition in Palestine, OECD, and selected comparison countries.
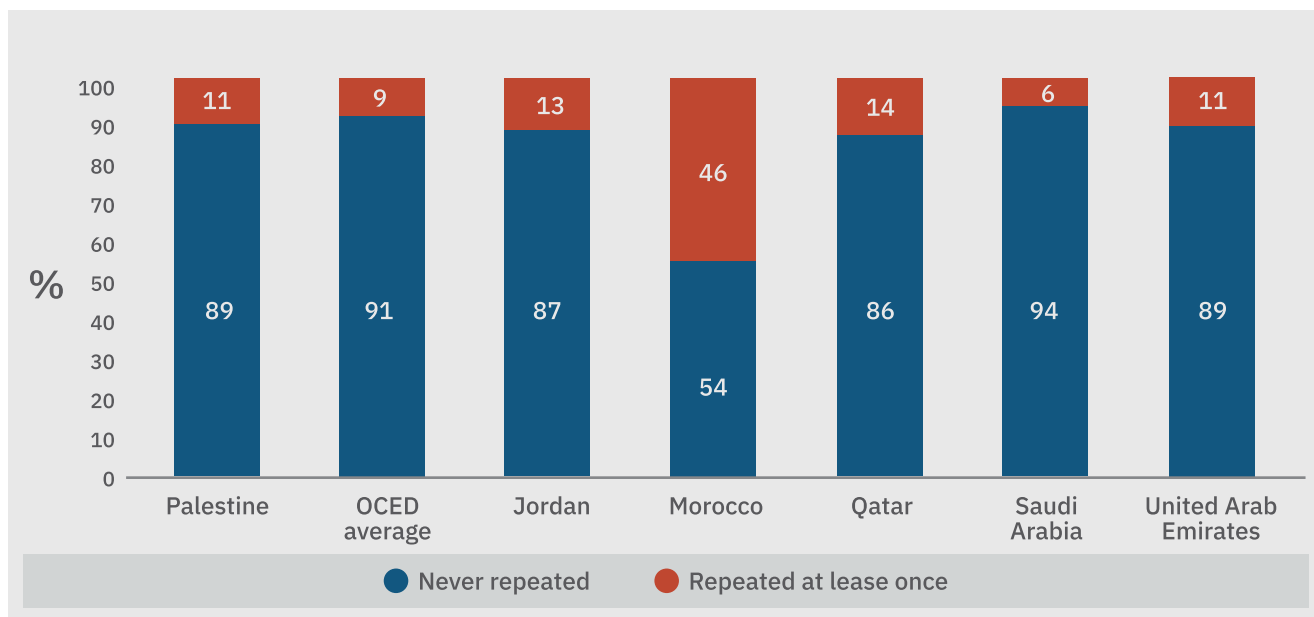
Grade repetition is a costly policy: it requires greater expenditure on education, and it delays students' entry into the labour market (OECD, 2013). A commonly used argument to support grade repetition is that repeating a grade gives students time to "catch up" with the content of the curriculum if teachers believe they are not yet ready for more advanced coursework. When the curriculum is cumulative and further learning depends on a solid understanding of what has been previously learned, promoting students regardless of their mastery of the content might place low-performing students in an increasingly difficult position at higher grades. If the practice is widespread, it might compromise performance in the school or school system.

However, reviews of research encompassing different disciplines, countries and time periods have mainly found negative effects of grade repetition on academic achievement (Jimerson, 2001). Because grade repetition represents a visible marker of underperformance, it can stigmatise students. Grade repeaters often also show more negative behaviour and attitudes towards school (Finn, 1989; Gottfredson, Fink, & Graham, 1994) and are more likely to drop out of school (Jacob & Lefgren, 2004; Manacorda, 2012). In addition, any positive short-term effects of grade repetition appear to decline over time (Allen, Chen, Willson, & Hughes, 2009).

Student achievement in Palestine

The most straightforward way to summarise student performance and compare countries' relative standing is through the mean performance of students in each country and domain assessed by PISA. PISA scores do not have a substantive meaning as they are not physical units, such as metres or grams. Instead, they are set in relation to the variation in results observed across all test participants. There is theoretically no minimum or maximum score in PISA; rather, the results are scaled to fit approximately normal distributions, with means for OECD countries around 500 score points and standard deviations around 100 score points. To help users interpret what students' scores mean in substantive terms, PISA scales are divided into proficiency levels. For each proficiency level, descriptions illustrate the kinds of knowledge and skills needed to complete those tasks successfully.

Level 2 is the baseline level of performance for each of the three domains. This level is also regarded as the minimum level of proficiency in reading and mathematics expected at the end of lower secondary school, as measured for Education SDG monitoring against Target 4.1. In all three PISA core domains, the baseline level is the level at which students can tackle tasks that require, at least, a minimal ability and disposition to think autonomously. Table 2.1, Table 2.2 and Table 2.3 shows description of the levels for mathematics, reading and science.

Table 2.1. Description of the levels of mathematics proficiency levels in PISA 2022.

Level	Characteristics of tasks
6	**Lower score limit 669** At Level 6, students can work through abstract problems and demonstrate creativity and flexible thinking to develop solutions. For example, they can recognise when a procedure that is not specified in a task can be applied in a non-standard context or when demonstrating a deeper understanding of a mathematical concept is necessary as part of a justification. They can link different information sources and representations, including effectively using simulations or spreadsheets as part of their solution. Students at this level are capable of critical thinking and have a mastery of symbolic and formal mathematical operations and relationships that they use to clearly communicate their reasoning. They can reflect on the appropriateness of their actions with respect to their solution and the original situation.
5	**Lower score limit 607** At Level 5, students can develop and work with models for complex situations, identifying or imposing constraints, and specifying assumptions. They can apply systematic, well-planned problem-solving strategies for dealing with more challenging tasks, such as deciding how to develop an experiment, designing an optimal procedure, or working with more complex visualisations that are not given in the task. Students demonstrate an increased ability to solve problems whose solutions often require incorporating mathematical knowledge that is not explicitly stated in the task. Students at this level reflect on their work and consider mathematical results with respect to the real-world context.
4	**Lower score limit 545** At Level 4, students can work effectively with explicit models for complex concrete situations, sometimes involving two variables, as well as demonstrate an ability to work with undefined models that they derive using a more sophisticated computational-thinking approach. Students at this level begin to engage with aspects of critical thinking, such as evaluating the reasonableness of a result by making qualitative judgements when computations are not possible from the given information. They can select and integrate different representations of information, including symbolic or graphical, linking them directly to aspects of real-world situations. At this level, students can also construct and communicate explanations and arguments based on their interpretations, reasoning, and methodology.

3	**Lower score limit 482** At Level 3, students can devise solution strategies, including strategies that require sequential decision-making or flexibility in understanding of familiar concepts. At this level, students begin using computational-thinking skills to develop their solution strategy. They are able to solve tasks that require performing several different but routine calculations that are not all clearly defined in the problem statement. They can use spatial visualisation as part of a solution strategy or determine how to use a simulation to gather data appropriate for the task. Students at this level can interpret and use representations based on different information sources and reason directly from them, including conditional decision-making using a two-way table. They typically show some ability to handle percentages, fractions, and decimal numbers, and to work with proportional relationships.
2	**Lower score limit 420** At Level 2, students can recognise situations where they need to design simple strategies to solve problems, including running straightforward simulations involving one variable as part of their solution strategy. They can extract relevant information from one or more sources that use slightly more complex modes of representation, such as two-way tables, charts, or two-dimensional representations of three-dimensional objects. Students at this level demonstrate a basic understanding of functional relationships and can solve problems involving simple ratios. They are capable of making literal interpretations of results.
1	**Lower score limit 358** At Level 1(1a), students can answer questions involving simple contexts where all information needed is present, and the questions are clearly defined. Information may be presented in a variety of simple formats and students may need to work with two sources simultaneously to extract relevant information. They are able to carry out simple, routine procedures according to direct instructions in explicit situations, which may sometimes require multiple iterations of a routine procedure to solve a problem. They can perform actions that are obvious or that require very minimal synthesis of information, but in all instances the actions follow clearly from the given stimuli. Students at this level can employ basic algorithms, formulae, procedures, or conventions to solve problems that most often involve whole numbers. At Level 1b, students can respond to questions involving easy to understand contexts where all information needed is clearly given in a simple representation (i.e., tabular or graphic) and, as necessary, recognize when some information is extraneous and can be ignored with respect to the specific question being asked. They are able to perform simple calculations with whole numbers, which follow from clearly prescribed instructions, defined in short, syntactically simple text.
Below 1	**Lower score limit 233** students can respond to questions involving easy to understand contexts where all information needed is clearly given in a simple representation (i.e., tabular or graphic) and, as necessary, recognize when some information is extraneous and can be ignored with respect to the specific question being asked. They are able to perform simple calculations with whole numbers, which follow from clearly prescribed instructions, defined in short, syntactically simple text. students can respond to questions involving easy to understand contexts where all relevant information is clearly given in a simple, familiar format (for example, a small table or picture) and defined in a very short, syntactically simple text. They are able to follow a clear instruction describing a single step or operation.

Table 2.2. Description of the levels of reading proficiency levels in PISA 2022.

Level	Characteristics of tasks
6	**Lower score limit 698** Readers at Level 6 can comprehend lengthy and abstract texts in which the information of interest is deeply embedded and only indirectly related to the task. They can compare, contrast and integrate information representing multiple and potentially conflicting perspectives, using multiple criteria and generating inferences across distant pieces of information to determine how the information may be used. Readers at Level 6 can reflect deeply on the text's source in relation to its content, using criteria external to the text. They can compare and contrast information across texts, identifying and resolving inter-textual discrepancies and conflicts through inferences about the sources of information, their explicit or vested interests, and other cues as to the validity of the information. Tasks at Level 6 typically require the reader to set up elaborate plans, combining multiple criteria and generating inferences to relate the task and the text(s). Materials at this level include one or several complex and abstract text(s), involving multiple and possibly discrepant perspectives. Target information may take the form of details that are deeply embedded within or across texts and potentially obscured by competing information.
5	**Lower score limit 626** Readers at Level 5 can comprehend lengthy texts, inferring which information in the text is relevant even though the information of interest may be easily overlooked. They can perform causal or other forms of reasoning based on a deep understanding of extended pieces of text. They can also answer indirect questions by inferring the relationship between the question and one or several pieces of information distributed within or across multiple texts and sources. Reflective tasks require the production or critical evaluation of hypotheses, drawing on specific information. Readers can establish distinctions between content and purpose, and between fact and opinion as applied to complex or abstract statements. They can assess neutrality and bias based on explicit or implicit cues pertaining to both the content and/or source of the information. They can also draw conclusions regarding the reliability of the claims or conclusions offered in a piece of text. For all aspects of reading, tasks at Level 5 typically involve dealing with concepts that are abstract or counterintuitive, and going through several steps until the goal is reached. In addition, tasks at this level may require the reader to handle several long texts, switching back and forth across texts in order to compare and contrast information.

4	**Lower score limit 553** At Level 4, readers can comprehend extended passages in single or multiple-text settings. They interpret the meaning of nuances of language in a section of text by taking into account the text as a whole. In other interpretative tasks, students demonstrate understanding and application of ad hoc categories. They can compare perspectives and draw inferences based on multiple sources. Readers can search, locate and integrate several pieces of embedded information in the presence of plausible distractors. They can generate inferences based on the task statement in order to assess the relevance of target information. They can handle tasks that require them to memorise prior task context. In addition, students at this level can evaluate the relationship between specific statements and a person's overall stance or conclusion about a topic. They can reflect on the strategies that authors use to convey their points, based on salient features of texts (e.g., titles and illustrations). They can compare, and contrast claims explicitly made in several texts and assess the reliability of a source based on salient criteria. Texts at Level 4 are often long or complex, and their content or form may not be standard. Many of the tasks are situated in multiple-text settings. The texts and the tasks contain indirect or implicit cues.
3	**Lower score limit 480** Readers at Level 3 can represent the literal meaning of single or multiple texts in the absence of explicit content or organisational clues. Readers can integrate content and generate both basic and more advanced inferences. They can also integrate several parts of a piece of text in order to identify the main idea, understand a relationship or construe the meaning of a word or phrase when the required information is featured on a single page. They can search for information based on indirect prompts and locate target information that is not in a prominent position and/or is in the presence of distractors. In some cases, readers at this level recognise the relationship between several pieces of information based on multiple criteria. Level 3 readers can reflect on a piece of text or a small set of texts and compare and contrast several authors' viewpoints based on explicit information. Reflective tasks at this level may require the reader to perform comparisons, generate explanations or evaluate a feature of the text. Some reflective tasks require readers to demonstrate a detailed understanding of a piece of text dealing with a familiar topic, whereas others require a basic understanding of less-familiar content. Tasks at Level 3 require the reader to take many features into account when comparing, contrasting or categorising information. The required information is often not prominent or there may be a considerable amount of competing information. Texts typical of this level may include other obstacles, such as ideas that are contrary to expectation or negatively worded.
2	**Lower score limit 407** Readers at Level 2 can identify the main idea in a piece of text of moderate length. They can understand relationships or construe meaning within a limited part of the text when the information is not prominent by producing basic inferences, and/or when the text(s) include some distracting information. They can select and access a page in a set based on explicit though sometimes complex prompts, and locate one or more pieces of information based on multiple, partly implicit criteria. Readers at Level 2 can, when explicitly cued, reflect on the overall purpose, or on the purpose of specific details, in texts of moderate length. They can reflect on simple visual or typographical features. They can compare claims and evaluate the reasons supporting them based on short, explicit statements. Tasks at Level 2 may involve comparisons or contrasts based on a single feature in the text. Typical reflective tasks at this level require readers to make a comparison or several connections between the text and outside knowledge by drawing on personal experience and attitudes.

Level	
1	**Lower score limit 335** Readers at Level 1 (level 1 a) can understand the literal meaning of sentences or short passages. Readers at this level can also recognise the main theme or the author's purpose in a piece of text about a familiar topic and make a simple connection between several adjacent pieces of information, or between the given information and their own prior knowledge. They can select a relevant page from a small set based on simple prompts and locate one or more independent pieces of information within short texts. Level 1a readers can reflect on the overall purpose and on the relative importance of information (e.g. the main idea vs. non-essential detail) in simple texts containing explicit cues. Most tasks at this level contain explicit cues regarding what needs to be done, how to do it, and where in the text(s) readers should focus their attention.
Below 1	**Lower score limit 189** Readers can evaluate the literal meaning of simple sentences. They can also interpret the literal meaning of texts by making simple connections between adjacent pieces of information in the question and/or the text. Readers can scan for and locate a single piece of prominently placed, explicitly stated information in a single sentence, a short text, or a simple list. They can access a relevant page from a small set based on simple prompts when explicit cues are present. Tasks explicitly direct readers to consider relevant factors in the task and in the text. Texts at this level are short and typically provide support to the reader, such as through repetition of information, pictures or familiar symbols. There is minimal competing information. Readers can understand and affirm the meaning of short, syntactically simple sentences on a literal level, and read for a clear and simple purpose within a limited amount of time. Tasks involve simple vocabulary and syntactic structures.

Table 2.3. Description of the levels of science proficiency in PISA 2022.

Level	Characteristics of tasks
6	**Lower score limit 708** At Level 6, students can draw on a range of interrelated scientific ideas and concepts from the physical, life, and earth and space sciences and use content, procedural and epistemic knowledge in order to offer explanatory hypotheses of novel scientific phenomena, events and processes or to make predictions. In interpreting data and evidence, they are able to discriminate between relevant and irrelevant information and can draw on knowledge external to the normal school curriculum. They can distinguish between arguments that are based on scientific evidence and theory and those based on other considerations. Level 6 students can evaluate competing designs of complex experiments, field studies or simulations and justify their choices.
5	**Lower score limit 633** At Level 5, students can use abstract scientific ideas or concepts to explain unfamiliar and more complex phenomena, events and processes involving multiple causal links. They are able to apply more sophisticated epistemic knowledge to evaluate alternative experimental designs and justify their choices and use theoretical knowledge to interpret information or make predictions. Level 5 students can evaluate ways of exploring a given question scientifically and identify limitations in interpretations of data sets, including sources and the effects of uncertainty in scientific data.

4	**Lower score limit 559** At Level 4, students can use more complex or more abstract content knowledge, which is either provided or recalled, to construct explanations of more complex or less familiar events and processes. They can conduct experiments involving two or more independent variables in a constrained context. They are able to justify an experimental design by drawing on elements of procedural and epistemic knowledge. Level 4 students can interpret data drawn from a moderately complex data set or less familiar context, draw appropriate conclusions that go beyond the data and provide justifications for their choices.
3	**Lower score limit 484** At Level 3, students can draw upon moderately complex content knowledge to identify or construct explanations of familiar phenomena. In less familiar or more complex situations, they can construct explanations with relevant cueing or support. They can draw on elements of procedural or epistemic knowledge to carry out a simple experiment in a constrained context. Level 3 students are able to distinguish between scientific and non-scientific issues and identify the evidence supporting a scientific claim.
2	**Lower score limit 410** At Level 2, students are able to draw on everyday content knowledge and basic procedural knowledge to identify an appropriate scientific explanation, interpret data and identify the question being addressed in a simple experimental design. They can use basic or everyday scientific knowledge to identify a valid conclusion from a simple data set. Level 2 students demonstrate basic epistemic knowledge by being able to identify questions that can be investigated scientifically.
1	**Lower score limit 335** At Level 1(1a), students are able to use basic or everyday content and procedural knowledge to recognise or identify explanations of simple scientific phenomena. With support, they can undertake structured scientific enquiries with no more than two variables. They are able to identify simple causal or correlational relationships and interpret graphical and visual data that require a low level of cognitive demand. Level 1a students can select the best scientific explanation for given data in familiar personal, local and global contexts.
below 1	**Lower score limit 261** students can use basic or everyday scientific knowledge to recognise aspects of familiar or simple phenomena. They are able to identify simple patterns in data, recognise basic scientific terms and follow explicit instructions to carry out a scientific procedure.

Perfomance based on profficiency levels in mathematics

Figure 2.3 shows the percentages of 15-year-old students at each proficiency level in mathematics in Palestine, the OECD, and selected comparison countries. In Palestine, 80% of students performed below Level 2 on PISA mathematics, compared with 31% on average across OECD countries. Jordan and Morocco had similar percentages of students performing below Level 2 with Palestine. Nearly no students in Palestine performed at the highest proficiency levels (Levels 5 and 6) in mathematics, which was also the case in Jordan and Morocco. Across the OECD countries, 9% of students performed at these levels, on average.

Figure 2.3. Percentages of 15-year-old students at each proficiency level in mathematics in Palestine, the OECD, and selected comparison countries.
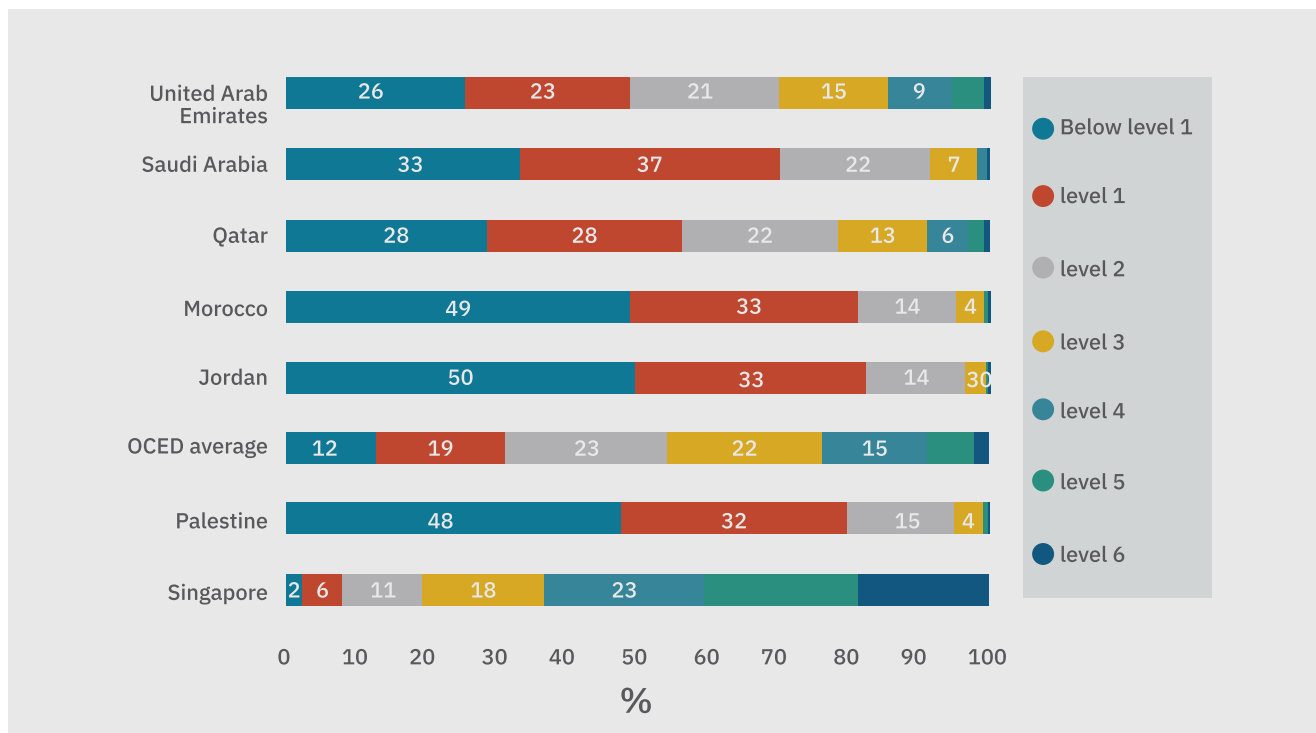
Performance based on proficiency levels in reading

Figure 2.4 shows the percentages of 15-year-old students at each proficiency level in reading in Palestine, the OECD, and elected comparison countries. In Palestine, 77% of students performed below Level 2 on PISA reading, compared with 26% on average across OECD countries. Jordan and Morocco students had slightly different percentages of students performing below Level 2 with Palestine (80%, 81% accordingly). Nearly no students in Palestine performed at the highest proficiency levels (Levels 5 and 6) in reading, which was also the case in Jordan, Morocco and Saudi Arabia. Across the OECD countries, 7% of students performed at these levels, on average.

Figure 2.4. Percentages of 15-year-old students at each proficiency level in reading in Palestine, the OECD, and selected comparison countries.
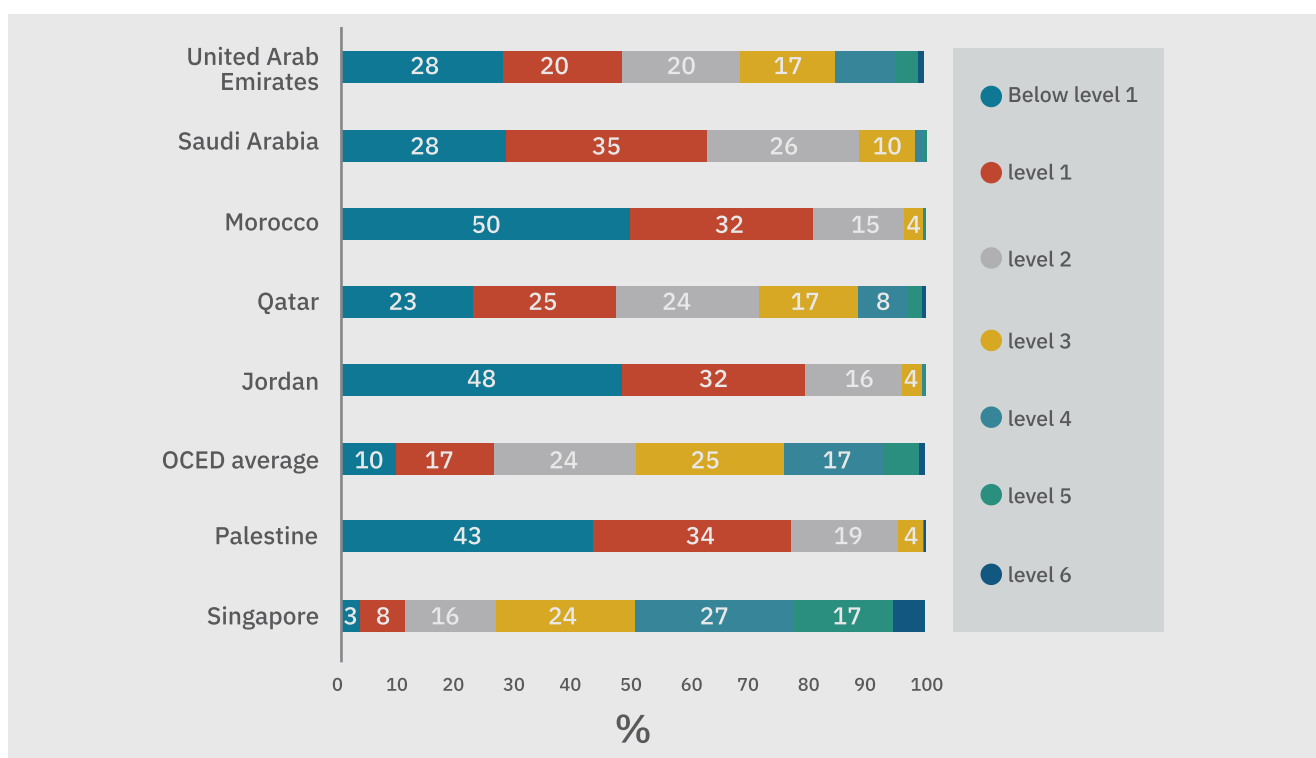
Performance based on proficiency levels in science

Figure 2.5 shows the percentages of 15-year-old students at each proficiency level in science in Palestine, the OECD, and selected comparison countries. In Palestine, 72% of students performed below Level 2 on PISA science, compared with 25% on average across OECD countries. Jordan and Morocco students had approximately close percentages of students performing below Level 2 with Palestine (69%, 76% accordingly). Nearly no students in Palestine performed at the highest proficiency levels (Levels 5 and 6) in science, which was also the case in Jordan, Morocco, and Saudi Arabia. Across the OECD countries, 7% of students performed at these levels, on average.

Figure 2.5. Percentages of 15-year-old students at each proficiency level in science in Palestine, the OECD, and selected comparison countries.
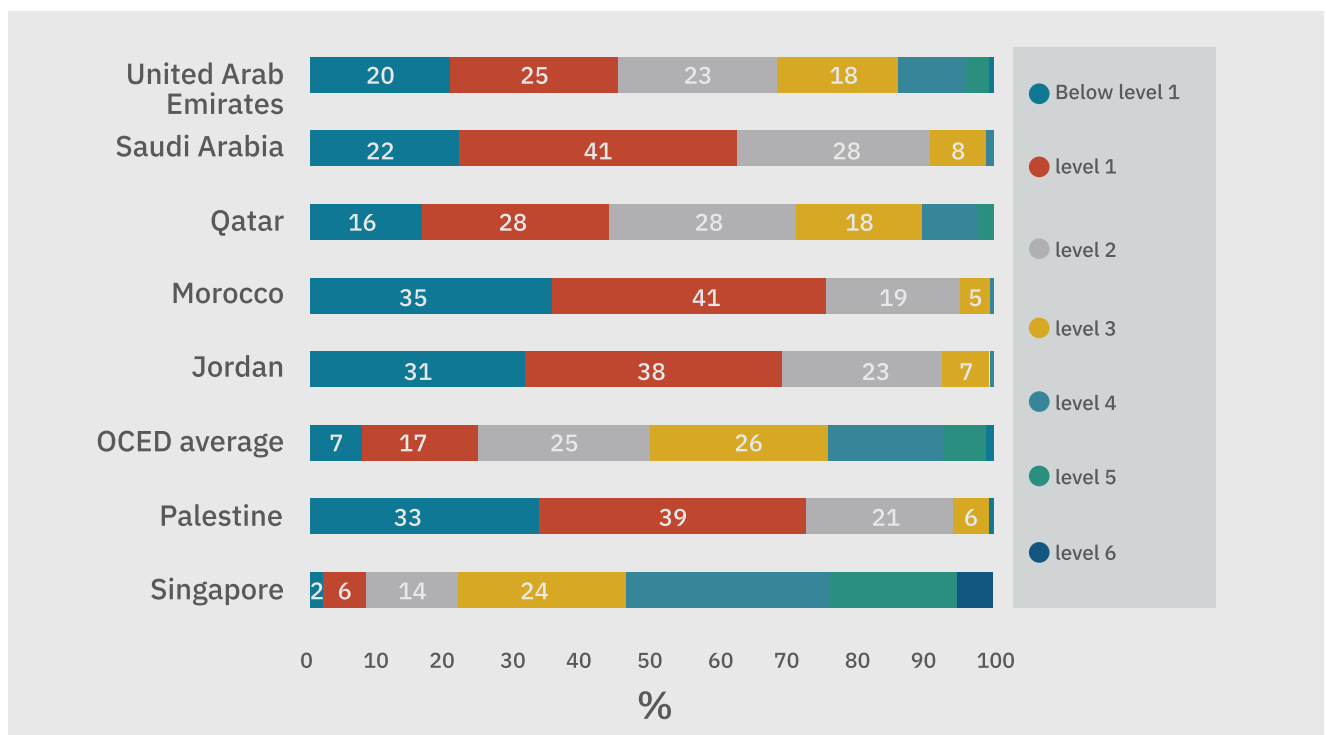
By observing the proportion of students below and above the baseline levels of proficiency and the proportion who reached the highest levels of proficiency, it possible to gauge the average achievement level (indicated by Palestine's mean scores), but also the capacity of the Palestine education system to nurture excellence and to ensure minimum standards.

Performance in mathematics, reading, and science

Figures 2.6, 2.7 & 2.8 show the mean performance of Palestine's students across the three domains, in comparison to the OECD average and Singapore, as well as their relative standing among Arabic countries that participated in PISA 2022. Figure 2.6. shows the mean performance of 15-year-old students in mathematics in Palestine, the OECD, and selected comparison countries. The mean performance of the Palestinian students in mathematics is 366 score points. The difference in the mean performance in mathematics between the OECD countries and Palestine is 106 score points (approximately one standard deviation). Jordan and Morocco's mean performance in mathematics is almost similar to the Palestinian student performance (the difference favoring Palestinian students is 5 points, 1-point difference accordingly). The Saudi Arabian students exhibited a 23-point advantage compared to their Palestinian counterparts. The disparity in mathematics achievement between the United Arab Emirates and Qatar, on one hand, and Palestine, on the other hand, significantly favors the formers by a higher margin of 65 points for the Emirates and 48 points for Qatar.

Figure 2.6. Mean performance in mathematics in Palestine, the OECD, and selected comparison countries.

Singapore	575	
Palestine	366	
OCED average	472	
Jordan	361	
Morocco	365	
Qatar	414	
Saudi Arabia	389	
United Arab Emirates	431	
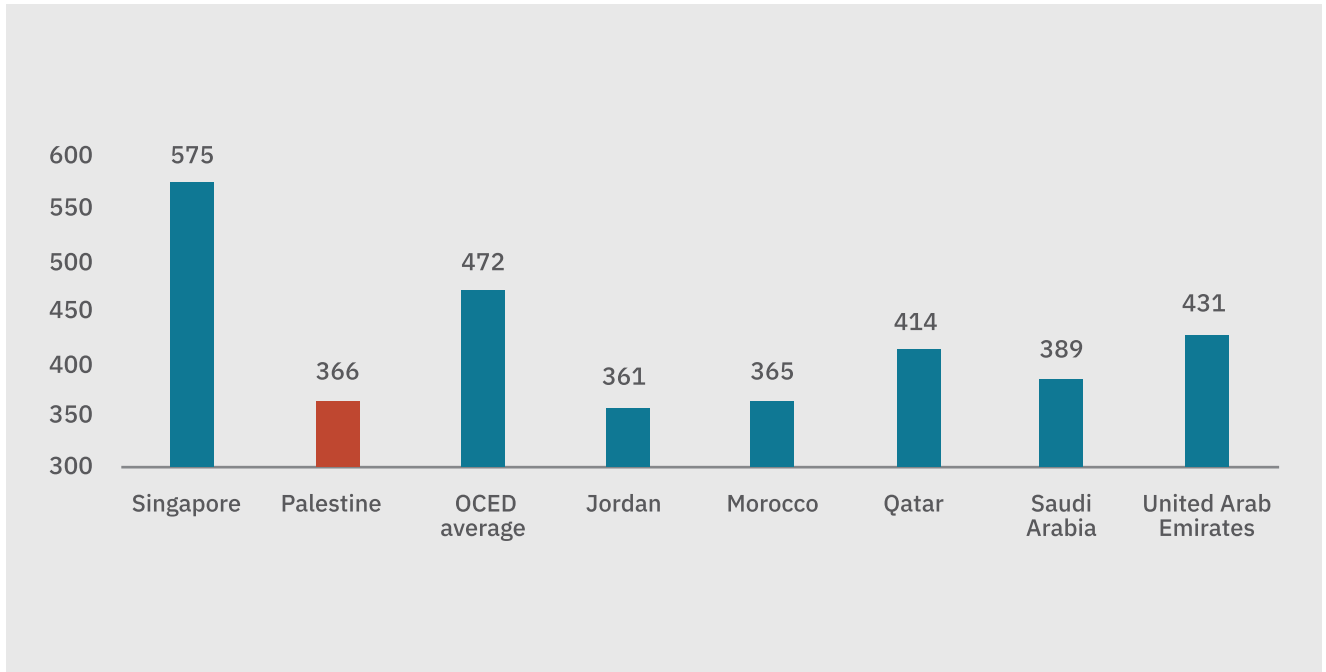
Figure 2.7. shows the mean performance of 15-year-old students in reading in Palestine, the OECD, and selected comparison countries. The mean performance of the Palestinian students in reading is 349 score points. The gap in the mean performance in reading between the OECD countries and Palestine is huge (127 score points). Palestine students achieved 10 points higher than Moroccan students and 7 points higher than Jordanian students. Qatar, United Arab Emirates, and Saudi Arabia achieved higher than Palestine in reading with differences amount (70, 68, 34 accordingly).

Figure 2.7. Mean performance in reading in Palestine, the OECD, and selected comparison countries.

Singapore	543	
Palestine	349	
OCED average	476	
Jordan	342	
Morocco	339	
Qatar	419	
Saudi Arabia	383	
United Arab Emirates	417	
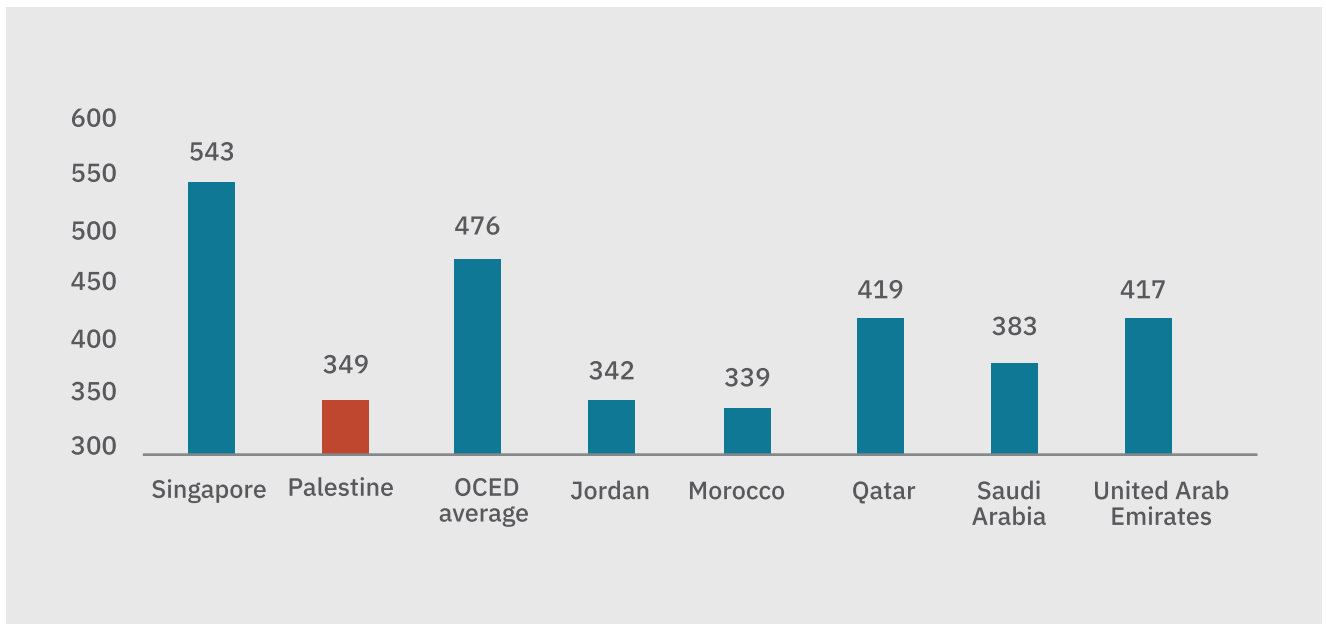
Fiqure.2.8 shows the mean performance of 15-year-old students in science in Palestine, the OECD, and selected comparison countries. The mean performance of the Palestinian students in science is 369 score points. The gap in the mean performance in science between the OECD countries and Palestine is significantly big (116 score points). Jordanian students achieved 6 points higher than Palestinian, while the last achieved 4 points more Moroccan students. Qatar, United Arab Emirates, and Saudi Arabia achieved higher than Palestine in reading with differences amount (63,63 & 21 accordingly).

Figure 2.8. Mean performance in science in Palestine, the OECD, and selected comparison countries.
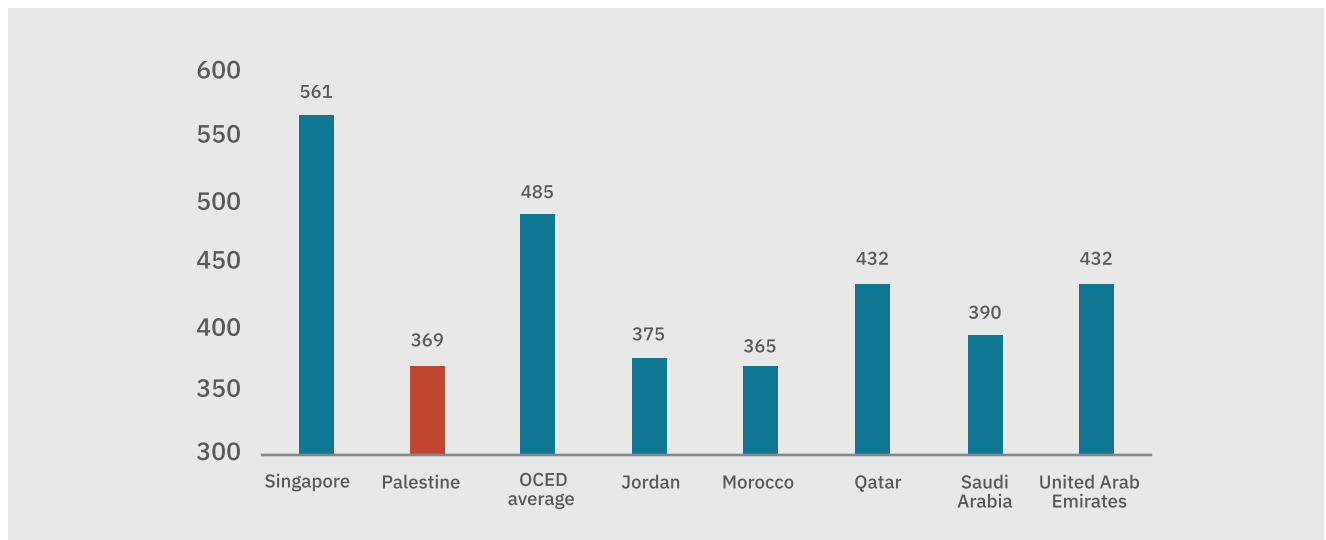
Three main observations emerge from these figures and from the comparisons of Palestine's mean performance with other countries in the three domains.

- **First,** Palestine's scores are below the OECD average in all three domains (mathematics: 366 vs 472, reading: 349 vs 476, science: 369 vs 485).
- **Second,** when comparing Palestine's performance to more comparable countries, i.e., Arabic countries, the United Arab Emirates, Qatar, and Saudi Arabia outperform Palestine in mathematics, reading, and science. Jordan underperforms Palestine by five score-points in mathematics and seven score-points in reading, but in science, the difference is reversed, with Jordan outperforming Palestine by six score-points. Morocco underperforms Palestine by one score-point in mathematics, 10 score-points in reading, and four score-points in science.
- **Third,** in common with most countries in the region, reading appears to be the weakest of the three PISA domains for Palestine.

One indicator for monitoring countries' progress towards achieving Target 4.1 of SDG Goal 4 is the proportion of 15-year-olds who have achieved at least minimum proficiency levels in reading and mathematics. The baseline level of proficiency, Level 2, can be used to monitor countries' achievement of this target.
In Palestine, only 20% (See Figure 2.8) of students attained at least minimum proficiency levels (proficiency level 2) in mathematics, significantly less than on average across OECD countries (OECD average: 69%). At a minimum, these students can interpret and recognise, without direct instructions, how a simple situation can be represented mathematically (e.g. comparing the total distance across two alternative routes or converting prices into a different currency).

In Reading: 23% of students in Palestine attained Level 2 or higher in reading (OECD average: 74%), as shown in Figure 2.9. At a minimum, these students can identify the main idea in a text of moderate length, find information based on explicit, though sometimes complex criteria, and can reflect on the purpose and form of texts when explicitly directed to do so.

Figure 2.11 shows that, 28% of students in Palestine attained Level 2 or higher in science (OECD average: 76%). At a minimum, these students can recognize the correct explanation for familiar scientific phenomena and can use such knowledge to identify, in simple cases, whether a conclusion is valid based on the data provided. Overall, most of the comparison countries had higher proportions of students performing at proficiency level 2 or above in the three domains compared to Palestine.

In general, it can be observed from Figure 2.9, Figure 2.10, and Figure 2.11 that a significant proportion of Palestinian students did not reach the baseline level of proficiency in mathematics (80%), reading (77%), and science (72%). Additionally, there were very few students who demonstrated exceptional performance in these subjects, specifically in mathematics, reading, and science at Level 5 or 6 in the PISA Test. This is in stark contrast to the OECD average, where the percentage of students achieving Level 5 or 6 in mathematics, reading, and science was significantly higher (Mathematics OECD average: 31%, Reading OECD Average: 26%, Science OECD average: 24%).

Figure 2.9. Percentages of 15-year-old students achieving at least minimum proficiency levels (Level 2) in mathematics in Palestine, the OECD, and selected comparison countries.
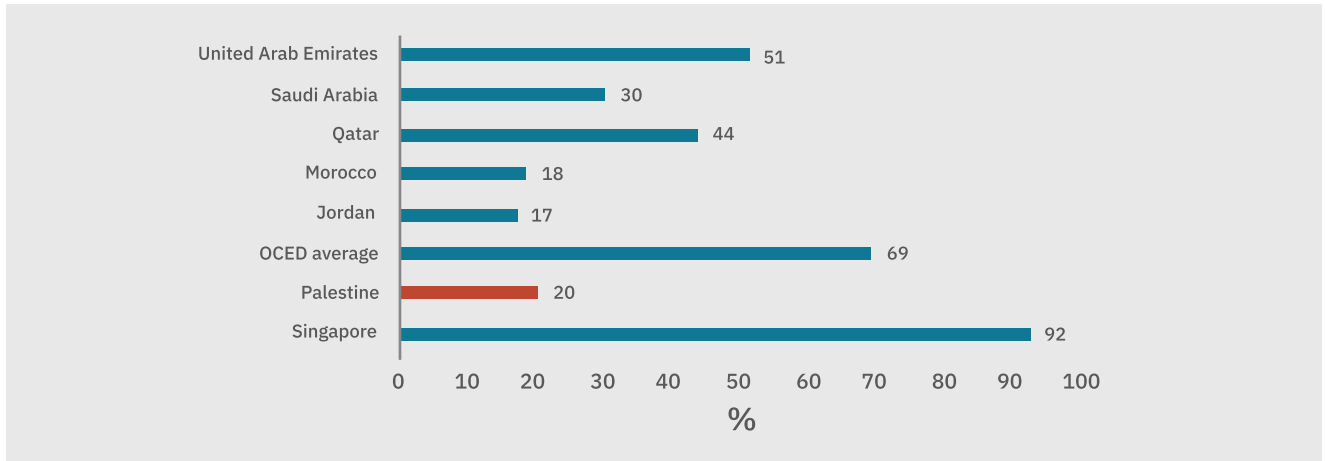
Figure 2.10. presents that Palestine has a high percentage of students performing below the baseline level of proficiency in reading (77%), and almost no students were top performers in reading, meaning that they attained Level 5 or 6 in the PISA reading test. In comparing with OECD average: (Reading OECD average: 26%).

Figure 2.10. Percentages of 15-year-old students achieving at least minimum proficiency levels (Level 2) in reading in Palestine, the OECD, and selected comparison countries.
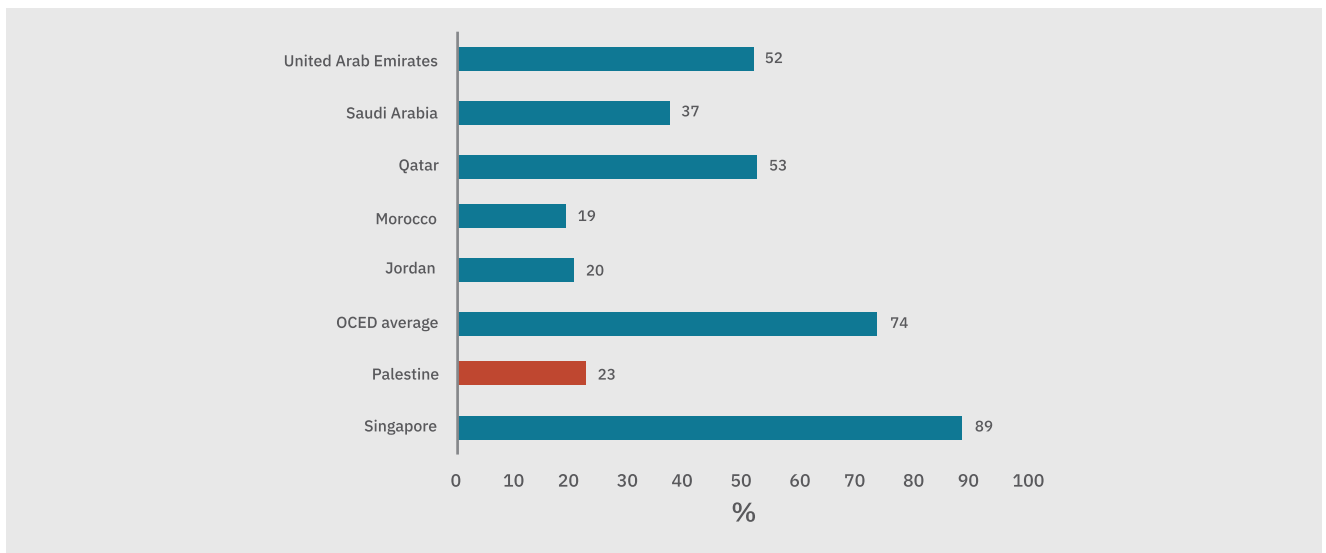
Figure 2.11 presents that Palestine has a high percentage of students performing below the baseline level of proficiency in science (72%), and almost no students were top performers in science, meaning that they attained Level 5 or 6 in the PISA science test. In comparing with OECD average: (Science OECD average: 24%).

Figure 2.11. Percentages of 15-year-old students achieving at least minimum proficiency levels (Level 2) in science in Palestine, the OECD, and selected comparison countries.
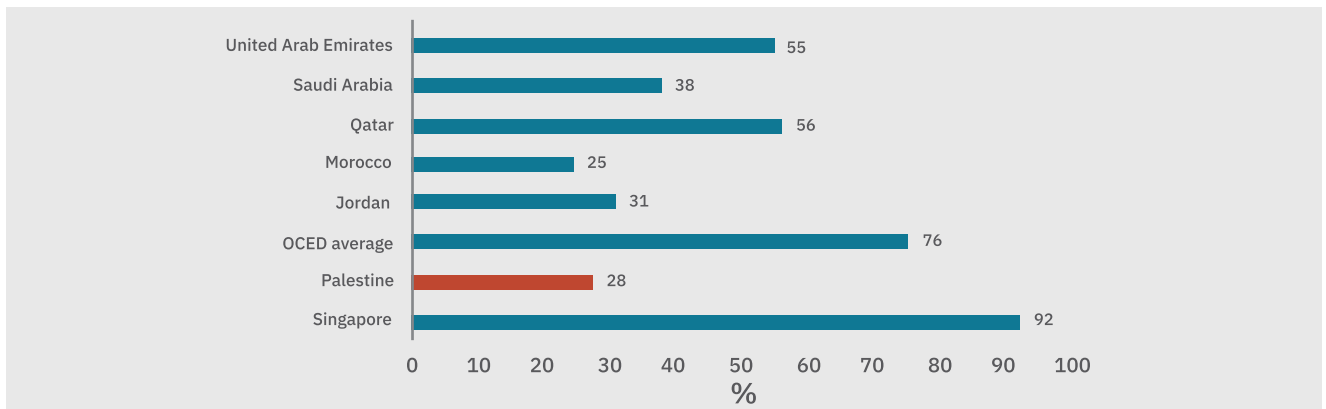
While the share of high performing students in Palestine is very small, it is important to note that 5% of 15-year-old students in Palestine demonstrated at or above Level 3 proficiency in mathematics (Fiqure2.3)– the typical level of proficiency among 15-year-old students in OECD countries. In Palestine, 4 % of students reached Level 3 in reading (Figure 2.4) and 6 % in science (Figure 2.5). These levels of knowledge and skills are important attributes for future citizens and workers and the challenges for Palestine are to increase the share of high performing students and, of course, to reduce the socio-economic disparities among low/top performers.

Gender differences in mathematics, reading, and science performance.

Figure 2.12 shows that, there is a gender gap in mathematics achievement in Palestine favoring girls' students with 16 score points. The pattern is similar in Jordan (15 points), Qatar (8 points) and the United Arab Emirates (7 points). The results presented that Figures is the opposite in mathematics in top performing countries, boys in Singapore outperformed girls (12 points) and at the level of the OECD average (9 points score).

Figure 2.12. Mean performance in mathematics by student gender in Palestine, the OECD, and selected comparison countries.
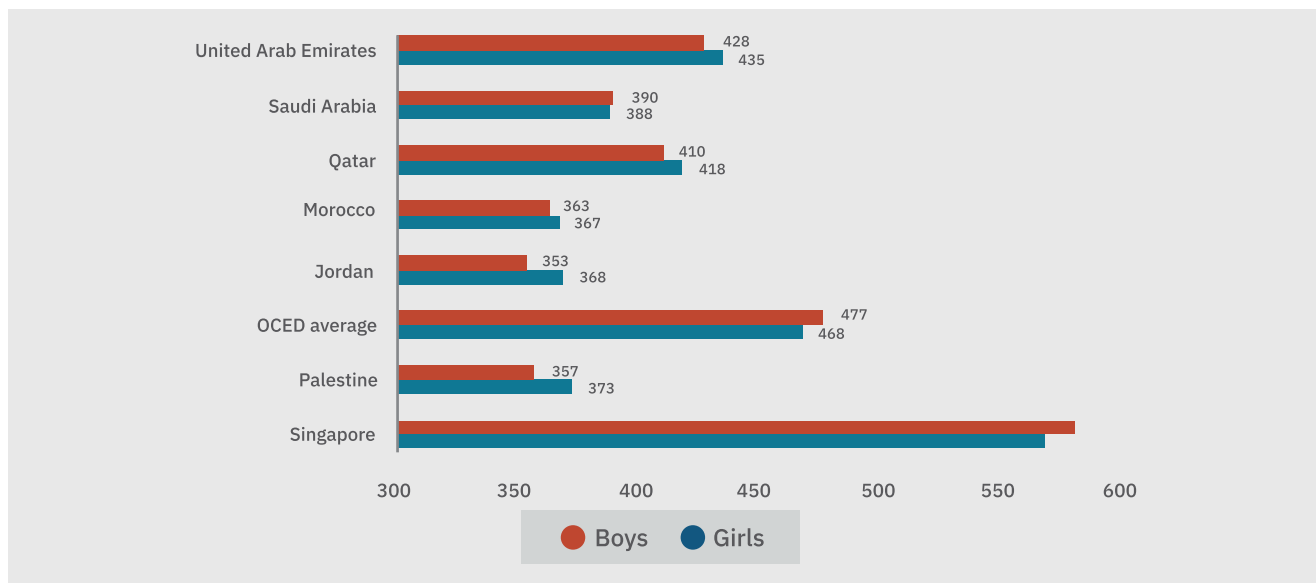
Figure 2.13 shows that, there is a gender gap in reading achievement in Palestine favouring girls' students with 49 score points. The pattern is similar in Jordan (46 points), Qatar (41 points) and the United Arab Emirates (44 points). Similar pattern also found in top performing country and on the OECD average with smaller gap (20, 24 points accordingly).

Figure 2.13. Mean performance in reading by student gender in Palestine, the OECD, and selected comparison   countries.
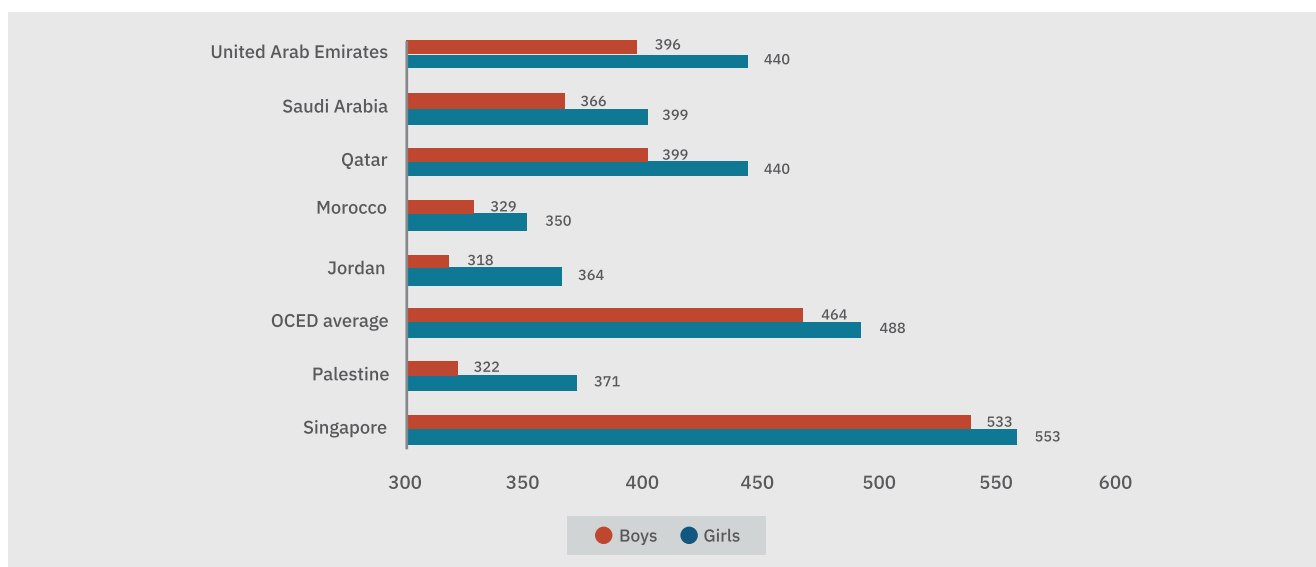
Similarly, Figure 2.14 shows that, there is a gender gap in science achievement in Palestine favouring girls' students with 30 score points. The pattern is similar in Jordan (32 points). There is no gap found at the level of the OECD average in the science performance.

Figure 2.14. Mean performance in science by student gender in Palestine, the OECD, and selected comparison countries.
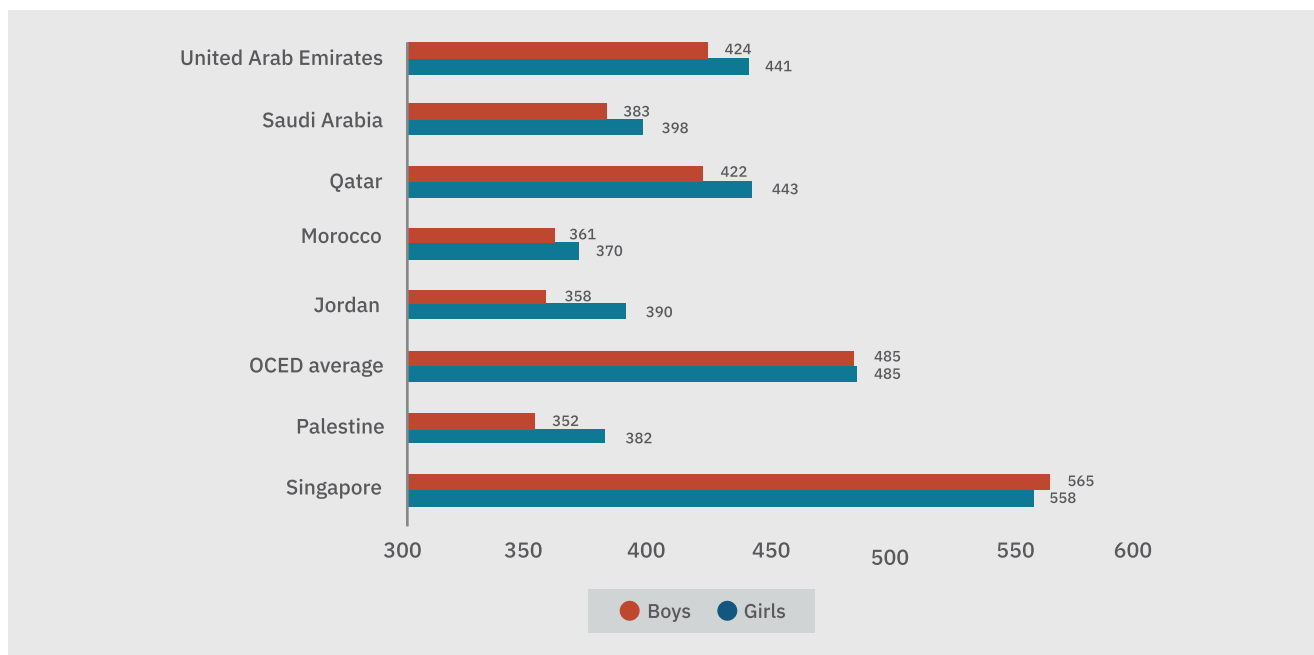
Means score achievement according to some National variables.

Education in Palestine is divided according to Geographical region into the West Bank and Gaza, with 63% of students in the sample in the West Bank and 37 % in Gaza (unweighted numbers). Table 2.4. shows that the West Bank students outperformed their peers in Gaza in the three main domains of the PISA 2022 test. The differences favouring the West Bank students are (14 points in Mathematics, 15 points in reading, 16 points in science).

Table 2.4. Mean performance in mathematics, reading, and science by school region.

Region	Mathematics	Reading	Science
The West Bank	372	356	376
Gaza	358	341	360

Schools in Palestine are divided in Palestine according to authorities into three types: public schools, Private schools, and UNRWA Schools. The UNRWA schools in Palestine offer education till the end of the 9th grade. Thus, the UNRWA was not represented in the PISA sample. The percentage of Public schools in the sample is 95% and the Private schools are 5% (unweighted numbers). Table 2.5 shows that the Private schools outperformed their peers in Public schools in mathematics (429 vs 362), reading (409 vs 345), and science (433 vs 365). These finding is agreed with all previous finding from national and international studies at the level of Palestine.

Table 2.5. Mean performance in mathematics, reading, and science by school supervising authority.

School Supervising Authority	Mathematics	Reading	Science
Public Schools	362	345	365
Private Schools	429	409	433

The Palestinian schools are categorized according to the school's gender into three types, boys' schools, girls' schools, and co-ed schools. boys' schools (40%) girls' schools (52%) and Co-ed schools (8%). Table 2.6 shows that boys' schools are the weakest compared to girls and Co-ed schools in mathematics, reading, and science. The gap between girls' and boys' schools was the highest in reading with 50 points score, the next is science with 30 points and the least is in mathematics and 10 points.

Table 2.6. Mean performance in mathematics, reading, and science by school gender.

School Gender	Mathematics	Reading	Science
Boys Schools	355	320	350
Girls School	371	370	380
Co-ed Schools	392	371	393

CHAPTER 3

THE WELL-BEING OF 15-YEAR-OLD STUDENTS IN PALESTINE

This chapter examines the psychological and social well-being of students in Palestine. These subjective dimensions of well-being are explored through an indicator of overall life satisfaction and through students' perceptions of the school environment as safe and supportive, including their experience of bullying. The chapter also examines the associations between students' well-being and the achievement and attainment outcomes that are discussed in Chapter 2, as well as between students' well-being and their expectations for the future.

Note:
- Numbers in all figures and tables in this chapter are rounded to the nearest integer.
- Source of all data in this chapter are from PISA 2022 database.

This chapter is concerned with the subjective well-being of 15-year-olds in Palestine: with their current psychological and social well-being at school, and with the relationship of these dimensions of well-being with their academic achievement and with the expectations they hold for their future.

A student-centered perspective on education recognizes the importance of monitoring not only the academic attainment and achievement of children, but also the psychological and social dimensions of their well-being. In the past, the lack of representative and reliable data, however, often limited the capacity of educators and policy makers to target their efforts in this area and to monitor the effectiveness of their action. More recently, during the COVID-19 pandemic, school closures and other restrictions may have impacted not just the learning trajectories of young people, but also their opportunities to socialize and imagine their future. However, measuring changes in students' well-being remains challenging.

It is important to invest in the future of children and adolescents, and therefore in their learning. It is at least equally important to pay attention to their present well-being and to promote their healthy development "here and now". At any stage of life, well-being is, in fact, a dynamic state: the assessment of well-being must be sensitive to both the current state and achievements ("functioning") and to the freedom they have ("capabilities") to pursue what they value in life (Sen, 1999).

PISA 2022 questionnaires asked 15-year-old students to provide overall (subjective) evaluations of life satisfaction, and to describe how they expected to fare in their next stages of life, as young adults. Because of its educational focus and policy orientation, PISA highlights those aspects of psychological and social well-being which are more closely related to adolescents' school experience and to how they perceive their school environment as safe and supportive. The PISA 2022 measures of well-being are described in detail in Box 3., Box 3. and Box 3.1..

By age 15, adolescents have spent a considerable amount of time in the classroom: following lessons, socializing with classmates, and interacting with teachers and other staff members. What happens in school is interconnected with students' mental health, with their happiness and satisfaction with different aspects of their life, including their aspirations for the future. At the same time, their well-being at age 15 and their aspirations for the future are the cumulative result of many other influences over their life-course: of their genetic disposition and early physical and cognitive development, of their past exposure to environments that promote their healthy development, and of their access to the required resources in their families, in their communities, and at school. While this chapter highlights some of the associations between well-being outcomes and contemporary school and education-related factors, it also acknowledges the importance of other factors in shaping the well-being of 15-year-olds and their aspirations.

Differently from Chapter 2, the chapter includes indicators for Palestine only and focuses on differences within Palestine (e.g. between boys and girls) and on the relationships between these outcomes and the achievement and attainment outcomes discussed in the previous chapter. The more limited cross-country comparisons are due to the subjective nature of the reporting scales and to the resulting uncertainty in the validity of comparisons (Box 3.).

Levels of life satisfaction among 15-year-old students

Life satisfaction among students in Palestine

Students were asked to rate their satisfaction with life using a 0-10 scale, and their responses were coded into four categories, ranging from not satisfied with life (scores 0-4) to very satisfied (scores 9-10). In Palestine, 19% of 15-year-old students reported not being satisfied with the life they are living and approximately (44%) 15-year-old students reported being very satisfied with their lives (Figure 3.1).

Figure 3.1. Life satisfaction among 15-year-old students in Palestine.
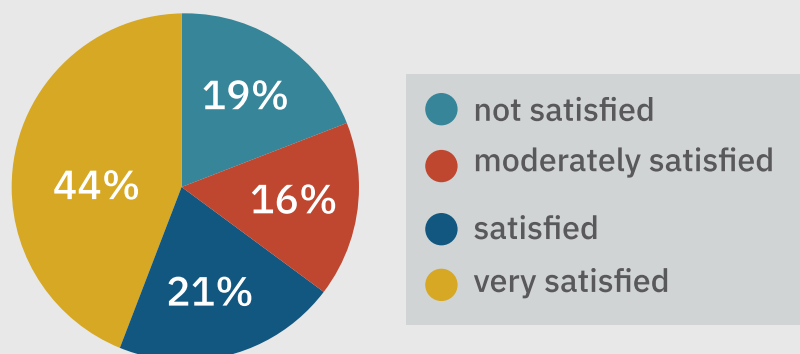
Gender differences in life satisfaction

Figure 3.2 shows that 47 % of boys' students are very satisfied with life against 42 % of girls' students. From other side, 19 % of girls are not satisfied with life against 21% of boys' students in Palestine. Generally, PISA 2022 shows non-significant differences between boys' and girls' psychological well-being. Among adults, similarly, gender does not seem to play a major role in shaping people's evaluation of their own lives in most countries (OECD, 2013).

Figure 3.2. Differences in self-rated life satisfaction by student gender.
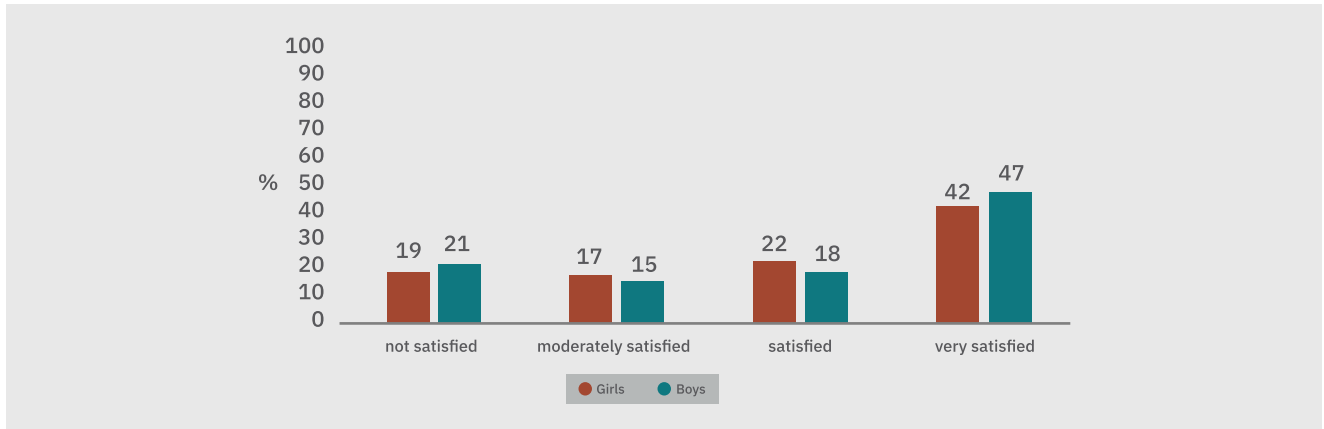
Do students perceive their school environments as safe and supportive?

School is central to the daily life of many youths in Palestine. Academically successful students often perceive their peers and teachers as supportive; they view schooling as essential to their future well-being, and this attitude is then reflected in their participation in academic pursuits. For some students, however, school is associated with negative emotions, such as feeling physically or psychologically unsafe, feeling threatened by other students, intimidated by their teachers, or feeling lonely and out of place.

Box 3.3. PISA 2022 measures of well-being: Safe and supportive school environments

Four indicators in PISA 2022 measure the extent to which school environments are perceived as safe and supportive for students' well-being.

The index of feeling safe is a general measure of students' feelings of safety at and around school. It is constructed from the responses, reported on a four-point agreement scale ("strongly disagree", "disagree", "agree", "strongly agree"), about the extent to which students feel safe on their way to school, on their way home from school, in classrooms at school, and at other places at school, such as in hallways and at the cafeteria. While the overall index values can help identify vulnerable groups, the proportion of students who disagree with individual questions from which the overall index is built can help understand the situations in which vulnerable students are most likely to feel unsafe.

Two other sets of questions address the quality of relationships with peers at school.

First, PISA asked students about their experiences with bullying-related behaviours at school. It distinguished four types of bullying in particular: physical, relational, verbal and extortion bullying. In detail, PISA 2022 asked students how often ("never or almost never", "a few times a year", "a few times a month", "once a week or more") during the 12 months prior to the PISA test they had had the following experiences in school (the question indicated that "Some experiences can also happen in social media"): "Other students left me out of things on purpose" (relational bullying); "Other students made fun of me" (verbal bullying); "I was threatened by other students" (verbal bullying); "Other students took away or destroyed things that belong to me" (extortion bullying); "I got hit or pushed around by other students" (physical bullying); "Other students spread nasty rumours about me" (relational bullying); "I was in a physical fight on school property" (physical bullying); "I stayed home from school because I felt unsafe" (relational bullying); "I gave money to someone at school because they threatened me" (extortion bullying). These statements were combined into a single index, the index of exposure to bullying, such that the average value of the index is 0 and the standard deviation is 1 across OECD countries. Positive values in this index indicate that the student is more exposed to bullying at school than the average student in OECD countries; negative values

in this index indicate that the student is less exposed to bullying at school than the average student in OECD countries. Students were classified as being "frequently bullied" if they were amongst the 10% of students with the highest values in the index of exposure to bullying across all countries and economies with available data (a value greater than 1.51 in the index of exposure to bullying). This cut-off was selected because most of the students at or above this level were frequently exposed (at least a few times a month) to the three forms of bullying measured by the index.

Second, PISA measured students sense of belonging at school by asking students whether they agree ("strongly disagree", "disagree", "agree", "strongly agree") with the following statements about their school: "I feel like an outsider (or left out of things) at school"; "I make friends easily at school"; "I feel like I belong at school"; "I feel awkward and out of place in my school"; "Other students seem to like me"; and "I feel lonely at school". These statements were combined to create the index of sense of belonging whose average is 0 and standard deviation is 1 across OECD countries. Positive values on this scale mean that the student has a stronger sense of belonging at school than the average student in OECD countries. A value above 1 on this index typically corresponds to students who agree or strongly agree with all positive indicators of sense of belonging and disagree or strongly disagree with all negative indicators of sense of belonging. Values above -0.5 typically correspond to students who agree (or strongly agree) with a majority of the positive indicators of sense of belonging and disagree (or strongly disagree) with a majority of the negative indicators of sense of belonging. Values below -2 indicate the lowest levels of sense of belonging, reached by students who disagree (or strongly disagree) with all positive indicators of sense of belonging, and agree (or strongly disagree) with all negative indicators of sense of belonging.

Finally, PISA investigated the quality of student-teacher relationships by asking students whether they agree ("strongly disagree", "disagree", "agree", "strongly agree") with the following statements about their teachers: "The teachers at my school are respectful towards me"; "If I walked into my classes upset, my teachers would be concerned about me"; "If I came back to visit my school three years from now, my teachers would be excited to see me"; "I feel intimidated by the teachers at my school"; "When my teachers ask how I am doing, they are really interested in my answer"; "The teachers at my school are friendly towards me"; "The teachers at my school are interested in students' well-being"; "The teachers at my school are mean towards me". These statements were combined to create the index of quality of student-teacher relationships whose average is 0 and standard deviation is 1 across OECD countries. Positive values on this scale mean that the student perceives his or her teachers as more supportive than the average student in OECD countries.

Feelings of safety

Most students in Palestine reported feeling safe at and around school. In detail, Figure 3.3 shows that 89%, 89 %, 89 %, and 79 % of students agreed or strongly agreed that they feel safe on their way to school, on their way home from school, in their classrooms at school, and in other places at school, such as in hallways and at the cafeteria accordingly. The small differences between these percentages indicate that the immediate school neighborhood and classrooms are perceived as slightly more orderly and safer than other places at school.

Figure 3.3. Percentages of 15-year-old students feeling safe at or around school in Palestine.
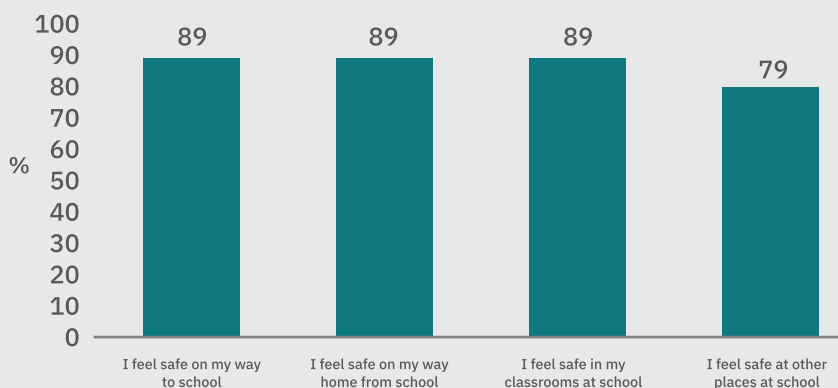
Figure 3.4 presents a summary of the differences in how safe different groups of students feel at or around schools in Palestine. On average, girls' students, and students attending public schools reported feeling less safe compared to boys, and students attending private schools (Figure 3.4 & Figure 3.5).

Figure 3.4. Differences in feelings of safety at or around school in Palestine by student gender.
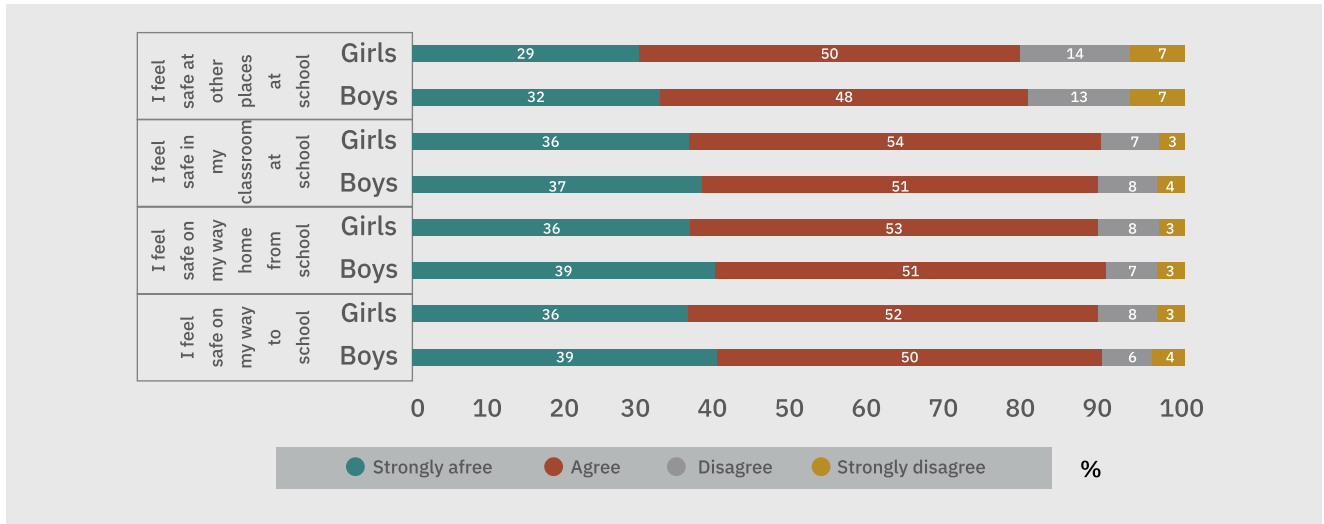
Figure 3.5. Differences in feelings of safety at or around school in Palestine by school supervising authority.
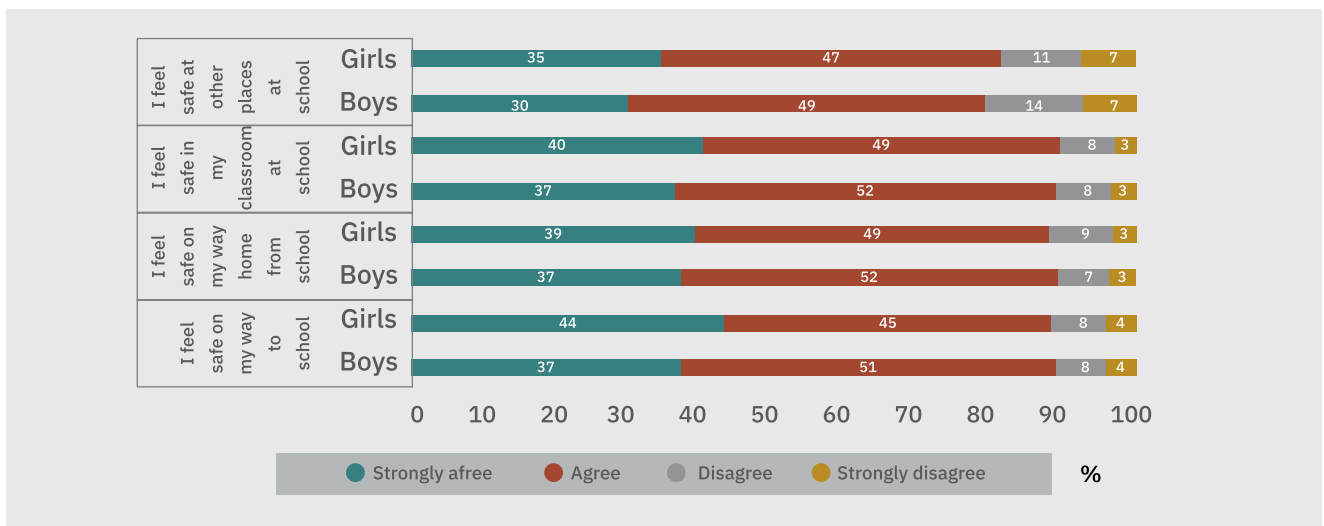
Bullying

Bullying at school can affect any student in any country (Nansel et al., 2004). Being a victim (or experiencing), this violent behavior can have severe physical and emotional long-term consequences for students, which is why teachers, parents, policymakers, and the media are increasingly drawing attention to bullying and trying to find ways to prevent it (Phillips, 2007). Bullying is a specific type of aggressive behavior that involves unwanted, negative actions in which someone intentionally and repeatedly harms and discomforts another person who has difficulty defending themselves (Olweus, 1993). It is characterized by a systematic abuse of power and an unequal power relationship between the bully and the victim (Woods & Wolke, 2004). Bullying can be physical (hitting, punching, or kicking) and can involve extortion (forcing the victim to give away its possessions); it can also be purely verbal (name-calling and mocking) and relational (spreading gossip and engaging in other forms of public humiliation, shaming, and inducing social exclusion) (Woods & Wolke, 2004). With widespread use of information and communication technologies (ICT), cyberbullying has become another type of harassment that takes place through digital devices and tools (Hinduja & Patchin, 2010; Smith et al., 2008).

In 2022, PISA asked students about their experiences as victims of bullying at school and measures four distinct types of bullying: physical, relational, verbal, and extortion (see Box 3.). a few times a year and a month, and once a week or more.

Figure 3.6 shows that bullying occurs in Palestine and the comparison countries to varying degrees. In Palestine, 30 % of students reported that other students made fun of them at least a few times a year, a month or a week. Additionally, 14 % of students were reported that gave money to someone at school because they threatened them a few times a year and a month, and once a week or more.

Figure 3.6. Students' exposure to bullying in Palestine (%).
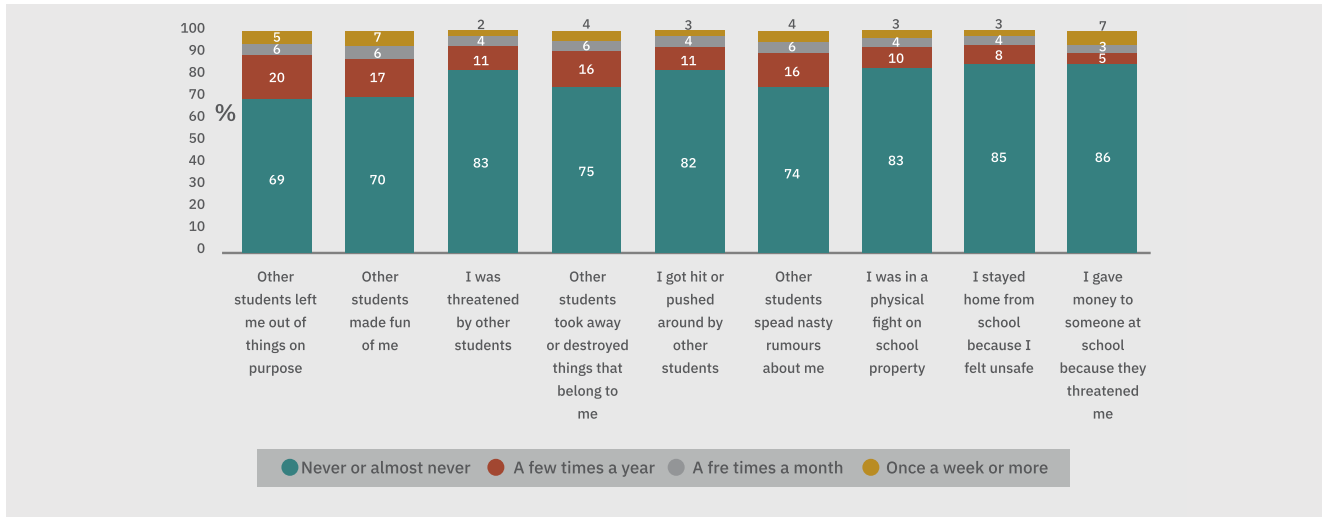
The international literature suggests that boys tend to be more often involved in bullying than girls (Camodeca et al., 2002; Haynie et al., 2001; Veenstra et al., 2005) and more physically violent (Rivers & Smith, 1994), while girls tend to engage in more relational aggression (Crick & Grotpeter, 1995). Figure 3.7 shows that 18% of boys reported that they were threatened at least "a few times a year" by other students against 17% that of girls. On the other hand, the figure shows that 31% of girls reported that other students made fun of them while only 29% of the boys reported that. Bullying is a group activity that takes place in the larger peer and school community (Hong & Espelage, 2012; Salmivalli et al., 1996). It is therefore particularly interesting to explore differences in the prevalence of bullying not just across students, but also across schools.

Figure 3.7. presents that no discernible disparities between girls and boys in type of bullying encountered. However, minor distinctions do emerge in certain aspects. To elucidate, it is worth noting that 29% boys reported that other student made fun of them, whereas the corresponding figure for girls stands at 31%.

Figure 3.7. Differences in exposure to bullying among students and schools in Palestine by student gender.
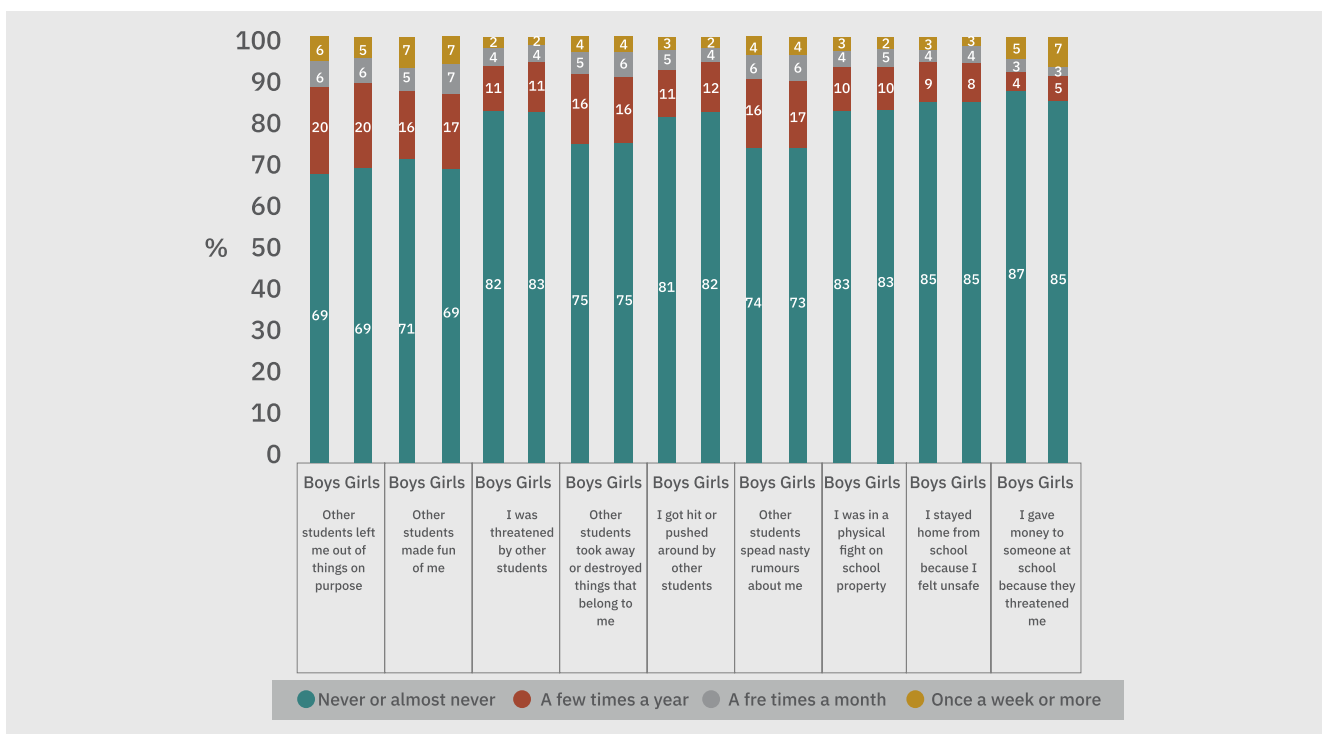
Sense of belonging at school

A sense of belonging is defined as feeling accepted and liked by the rest of the group, feeling connected to others and feeling like a member of a community (Baumeister & Leary, 1995; Maslow, 1943). Human beings in general – and teenagers in particular – desire strong social ties and value acceptance, care, and support from others. In school, a sense of belonging gives students' feelings of security, identity, and community, which, in turn, support academic, psychological, and social development.

In Palestine, a large majority of students in 2022 (78 %) felt that they belong at school, in the opposite about (20%) of students reported feeling lonely at school. On average, students reported a strong sense of belonging at school and positive relationships with their peers across all six statements that were included in the PISA 2022 questionnaire to measure these aspects (Figure 3.8). It shows the percentages of students who agreed or strongly agreed with the statements below. Although, 78 % of Palestinian students feel like they belong to school, 28 % of sample feel like outsiders or left out of things at schools which requires more consideration.

Figure 3.8. Sense of belonging at school among students in Palestine (based on student reports).
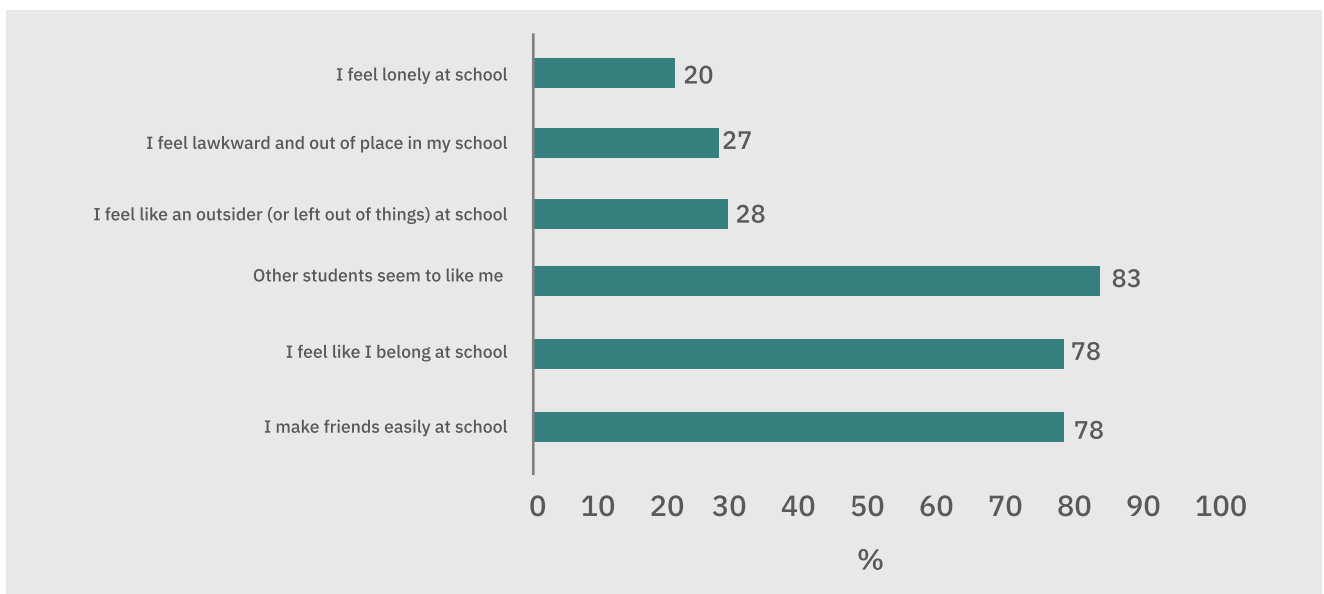
Quality of student-teacher relationships

Interactions between students and their teachers play a crucial role in students' learning and their feelings towards school. Federici and Skaalvik (2014) emphasized the importance of students feeling cared for by their teachers to enhance engagement and academic performance. Teachers play a crucial role in supporting students by providing encouragement, assistance, setting goals and rules, treating them fairly, and allowing them to make choices (Klem & Connell, 2004; Wang & Holcombe, 2010). Furthermore, research suggests that emotional support from teachers positively correlates with various behavioral outcomes in students, including increased engagement, academic enjoyment, self-efficacy, effort, and perseverance (Federici & Skaalvik, 2014; Lee, 2012; Ruzek et al., 2016; Sakiz, Pape, & Hoy, 2012). Moreover, teacher support is associated with higher intrinsic motivation and lower anxiety levels among students (Pitzer & Skinner, 2017; Ricard & Pelletier, 2016; Sakiz, Pape, & Hoy, 2012; Yu & Singh, 2018).In Palestine, a large majority of students (70 %) agreed or strongly agreed that teachers at their schools are interested in student well-being, while 19 % of students reported feeling intimidated by the teachers at their school. On average, students reported relatively supportive relationships with their teachers across seven of the eight statements that were included in the PISA 2022 questionnaire to measure these aspects (Fiqure.3.9).

Figure 3.9. Quality of student-teacher relationships in Palestine based on students' reports.

Bars (%):
- The teacher at my school are mean towards me: 16
- I feel intimidated by the teachers at my school: 19
- The teachers at my school are interested in student's well-being: 79
- The teachers at my school are friendly towards me: 73
- When my teachers ask how I am doing, they are really interested in my answer: 76
- If i came back to visit my school 3 years from now, my teachers would be excited to see me: 66
- If I wlked into my classes upset, my teachers would be concerned about me: 47
- The teachers at my school are respecful towards me: 83

How safe and supportive environments relate to life satisfaction

Bullying is a major risk factor for adolescents' mental and physical health, in both the short and long term (Wolke & Lereya, 2015). Being bullied increases the risk of suffering from depression, anxiety, low self-esteem, loneliness, and sadness among adolescents (Kochel, Ladd, & Rudolph, 2012; Livingston et al., 2019; Rigby & Cox, 1996).

PISA 2022 data shows that in Palestine, frequently bullied students were more likely to feel not satisfied with their lives than students who were characterised as not frequently bullied. In contrast, students who reported a strong sense of belonging at school (top 25% in the index) also reported significantly higher life satisfaction compared to students who reported a weak sense of belonging at school (bottom 25%). (Figure 3.10).

Figure 3.10. Average life satisfaction in Palestine by exposure to bullying and by national quarters of the index of sense of belonging at school based on students' reports.

Legend:
— Life satisfaction by exposure to bullying   — Life satisfaction by sense of belonging at school
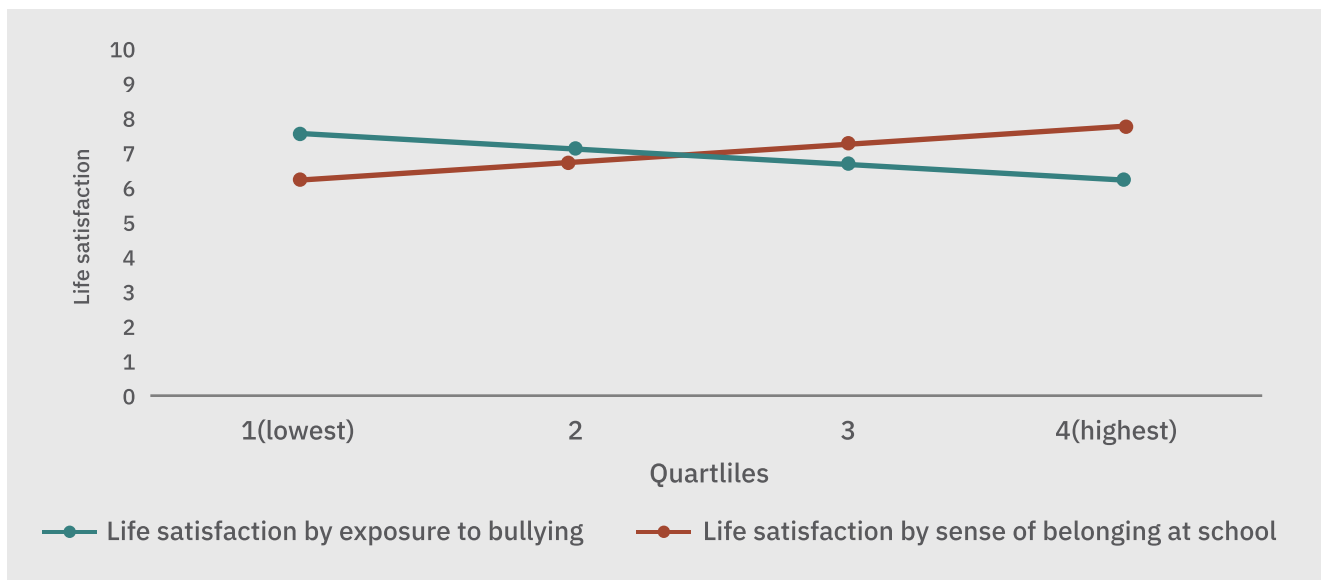
Student well-being and academic achievement

The aspects of well-being analyzed in this chapter constitute valued outcomes in their own right; differences in well-being across students or over time should not be downplayed if similar differences are not found for academic achievement. Students' self-rated life-satisfaction, in Palestine as well as in most countries that participated in PISA 2022, is only weakly related with educational achievement (r = .06). Stronger associations exist between academic achievement and students' social and psychological security. For example, PISA 2022 data reveal that greater exposure to bullying was associated with lower performance in mathematics (Figure 3.11). The association of bullying with mathematics performance however varied depending on the type of bullying considered. For example, students who reported that other students threatened them frequently scored 45 points lower in mathematics than students who reported that they were threatened by other students occasional. Additionally, students whose peers made fun of them frequently scored 33 points less in mathematics than students whose peers made fun of them occasionally. A negative association is found between student performance in mathematics and the exposure to any of bullying behaviours.

Figure 3.11. Students' exposure to bullying and mathematics performance.
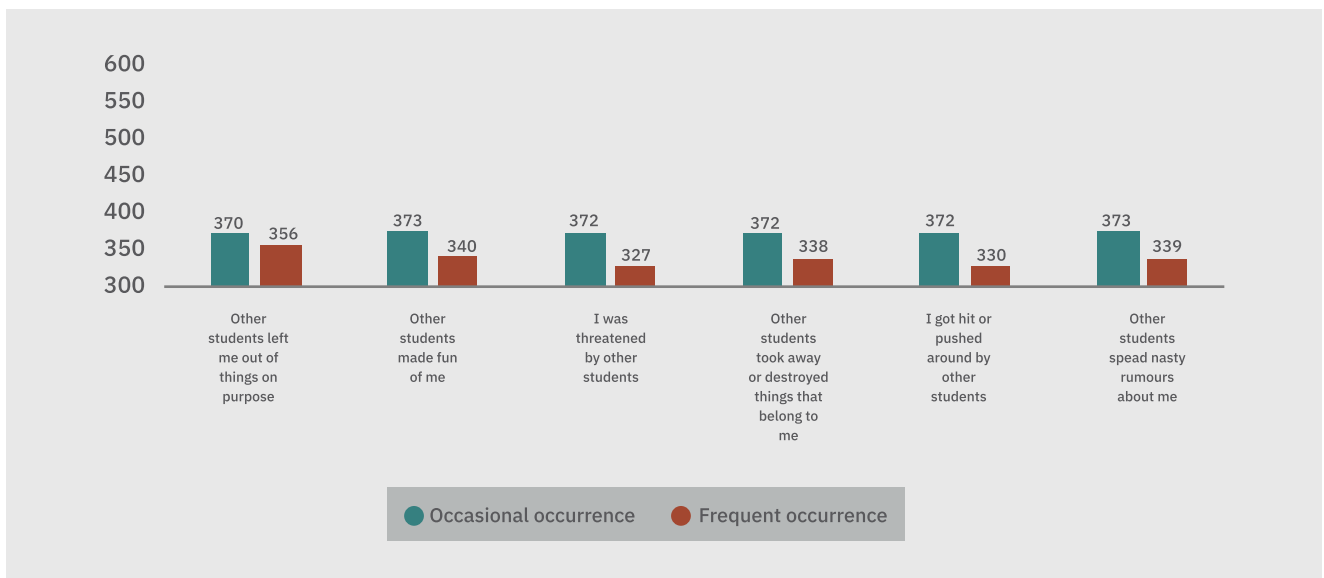
Frequent occurrence: students who reported that they bullied at least a few times a month, **Occasional**

Occurrence: students who reported that they bullied a few times a year or less frequently.

In Palestine, 15-year-old students who reported a stronger sense of belonging at school scored higher in mathematics. The data illustrates a comparison between the top 25% of students based on the school belonging index and the least 25% of students.

The top 25% of students achieved 36 score points more than the least 25% of students on mathematics (Figure 3.12).

Figure 3.12. Students' mathematics performance, by national quarters of the of the index of quality of student-teacher relationships.
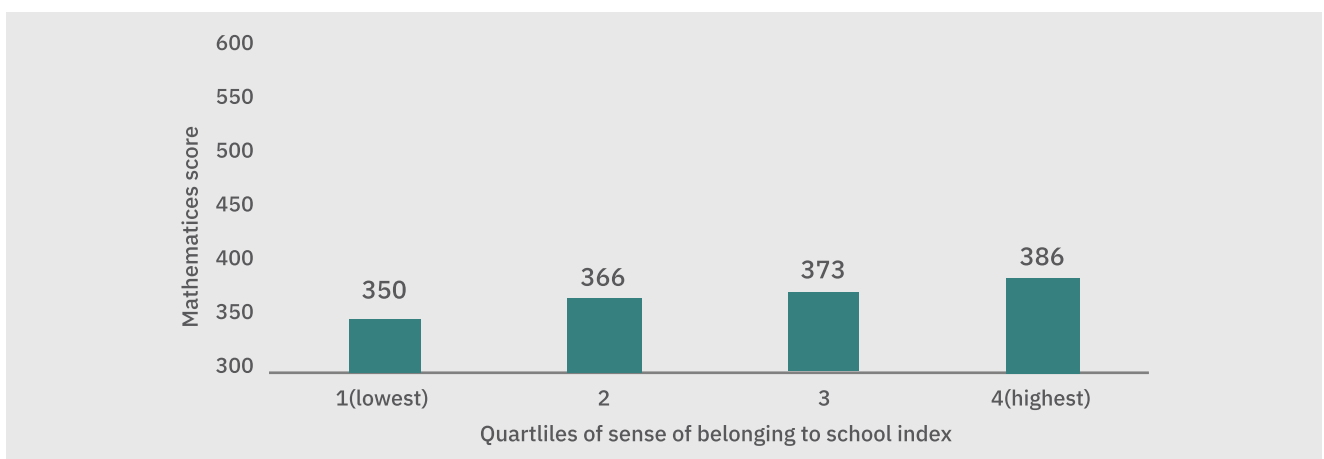
Students' expectations for the future in Palestine

Adolescence is a time when youth begin to think seriously about their future, when their aspirations become more closely aligned with their interests, their abilities and the opportunities available to them, and when their vision of themselves can be influenced by the peers and adults around them (Beal & Crockett, 2010). Students' expectations for their future influence what they choose to study and the activities they pursue, which, in turn, determine subsequent accomplishments (Khattab, 2015; Nurmi, 2004). Students' expectations can be self-fulfilling prophecies, as the effort students invest to meet their expectations often pay off (OECD, 2012). For example, when comparing students of similar socio-economic backgrounds and academic achievement, students who expect to graduate from university are more likely to complete this degree than their peers who do not have such high expectations (Beal & Crockett, 2010). Conversely, students who expect to drop out of school without qualifications are more likely to do so (Perna, 2000; Morgan S. L., 2005).

> **Box 3.1. PISA 2022 measures of students' expectations for the future**
>
> PISA 2022 asked students to report about their expectations for social mobility; about the educational qualifications they expect earn; and about their occupational expectations. In addition, a set of questions asked students about their outlook on their future career and their perception of school as useful in preparing them for it.
>
> Expectations for social mobility are derived from two questions – one about the current situation of the family on a "social ladder", and one about where students expect themselves to be when they are 30 years. The instructions indicate that the response scale, which ranges from 1 to 10, represents "how society in Palestine is set up: At the top of the scale (value 10) are the people who are the best off. They earn the most money, receive the best education, and have the most respected jobs. At the bottom of the scale (value 1) are the people who are the worst off. They earn the least money, receive no education, and have no jobs or the least respected jobs." Students are classified as having expectations for upward social mobility if they report a higher value on the second question (about themselves, in the future) than on the first (about their current family situation; and as having expectations for downward social mobility if they report a lower value on the second question than on the first.
>
> Expectations about educational qualifications are based on the question "Which of the following qualifications do you expect to complete?": the highest ISCED level for which student answer "yes" (rather than "no", or "I don't know") is used for analyses in this chapter.
> Finally, occupational expectations are based on the question "What kind of job do you expect to have when you are about 30 years old?". The open response typed in by students was coded into an occupational category based on the International Standard Classification of Occupations (ISCO).
>
> Occupational expectations are not analysed in detail in this report.

Expectations for social mobility

Students who took the PISA test in 2022 were asked to describe their expected socio-economic status, around the age of 30, by placing themselves on a scale from 1 (representing people who are the worst off in society) to 10 (representing the people who are the best off). Their projected future could be directly compared with similar responses about how they perceived their current family situation, to derive an indicator of expected social mobility. These comparisons may indicate how hopeful and confident about the future 15-year-olds are. By construction, the questions were not about absolute living standards and well-being, but rather about the relative standing of individuals within a society.

Figure 3.13 illustrates that a significant majority, amounting to 76%, of the 15-year-old students in Palestine possess the expectation of encountering social mobility during their early adulthood. This suggests that they envision their future societal standing at the age of 30 to be different from the present circumstances of their family when they were 15. To be more precise, approximately 61% of the students anticipate an upward shift in their social position, while a smaller portion of 15% foresees a downward shift in their social standing.

Figure 3.13. Percentage of students expecting downward, upward, or no social. mobility
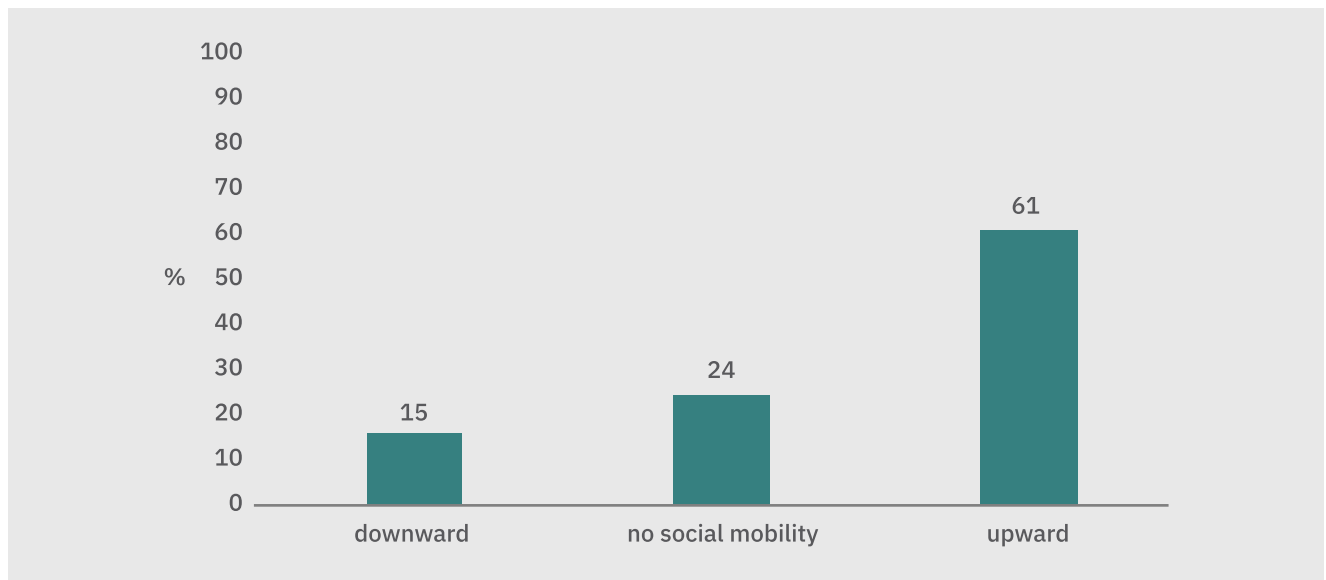
Education expectations

A 15-year-old's expectation to participate in higher education is not a guarantee that the student will, in fact, pursue further education. Expectations of further education are based on students' evaluation of the costs and benefits of investments in further education (Morgan S. , 1998) and on students' self-assessment of their capacities to realise their aspirations. Adolescents frequently question their own opinions about their future, and often change their aspirations and expectations. Students' expectations are shaped by the influence of people such peers, family members and teachers. Students adjust their expectations based on past academic achievement; they readjust them according to the degree of selectivity of universities and to the direct financial and opportunity costs of participating in higher education. Students and their families constantly evaluate the returns associated with different choices, considering the rigidity of the education system, which may restrict access to some education opportunities to only those students who have followed a particular path through the system. For these reasons, the expectations of 15-year-old students vary so considerably both within and across countries (Sewell, Hauser, Springer, & Hauser, 2003; Mateju, Smith, & Basl, 2007; Buchmann & Park, 2009; OECD, 2012).

PISA 2022 questioned students regarding their anticipated educational achievements. It was found that a significant 72% of Palestinian students, aged 15, expressed their desire to pursue a university degree, whether it be at the bachelor's level or beyond. Conversely, only 8% of students expect to conclude their education at the upper secondary level. (Figure 3.14).

Figure 3.14. Students' expectations for completing further education.
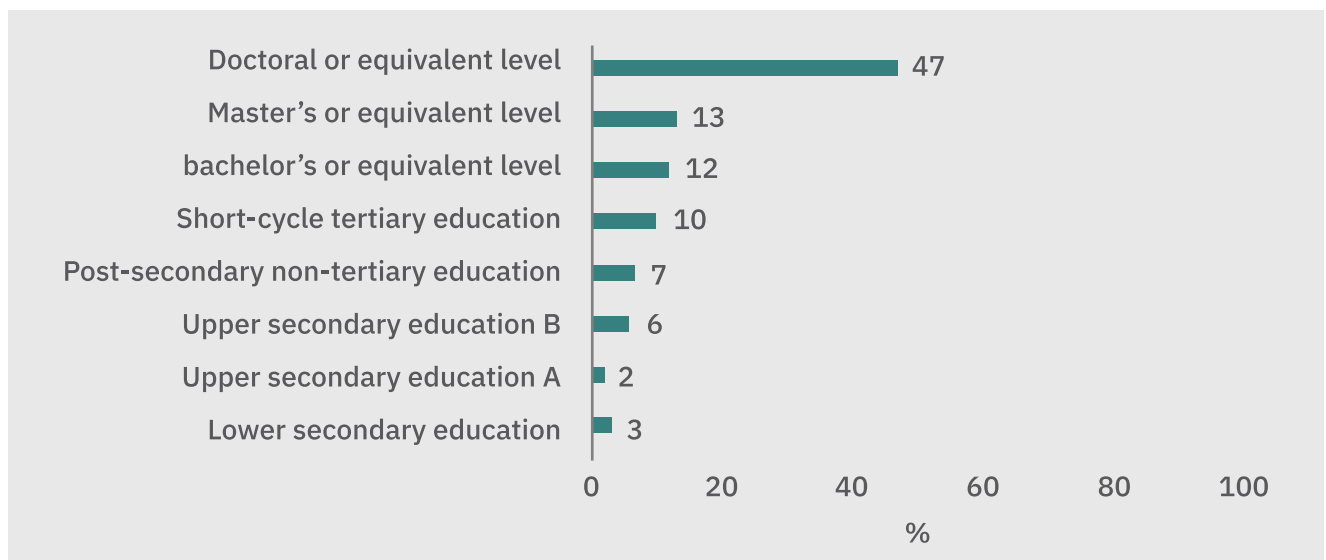
It is difficult to accurately predict the number of university graduates a country needs to sustain innovation, growth and sociocultural development. Tertiary graduation rates illustrate a country's capacity to provide the workforce with advanced and specialized knowledge and skills. Earning a university degree is often a pathway to higher salaries and better employment prospects. On average across OECD countries, the employment rate in 2020 was 58% for adults who had not attained upper secondary education, while it was 84% for tertiary-educated adults (OECD, 2021). But attaining university education also requires economic investments, and the postponing of social transitions and the entry into the labor market. For some students, the opportunity costs of pursuing a university degree and the difficulties they must overcome to earn a degree may outweigh the benefits they will derive from enrolling in university.

Expectations of higher education and student performance

Figure 3.15 demonstrates the presence of a positive correlation between the academic performance of students in mathematics, reading, and science and their aspiration to pursue a more advanced level of education. For example, Palestinian students who anticipate obtaining a bachelor's degree or its equivalent outperformed their peers who anticipate completing post-secondary or non-tertiary education by 25 points in mathematics. This pattern is similarly observed in the domains of reading and science.

Figure 3.15. Students' expectations for completing further education, by academic achievement.
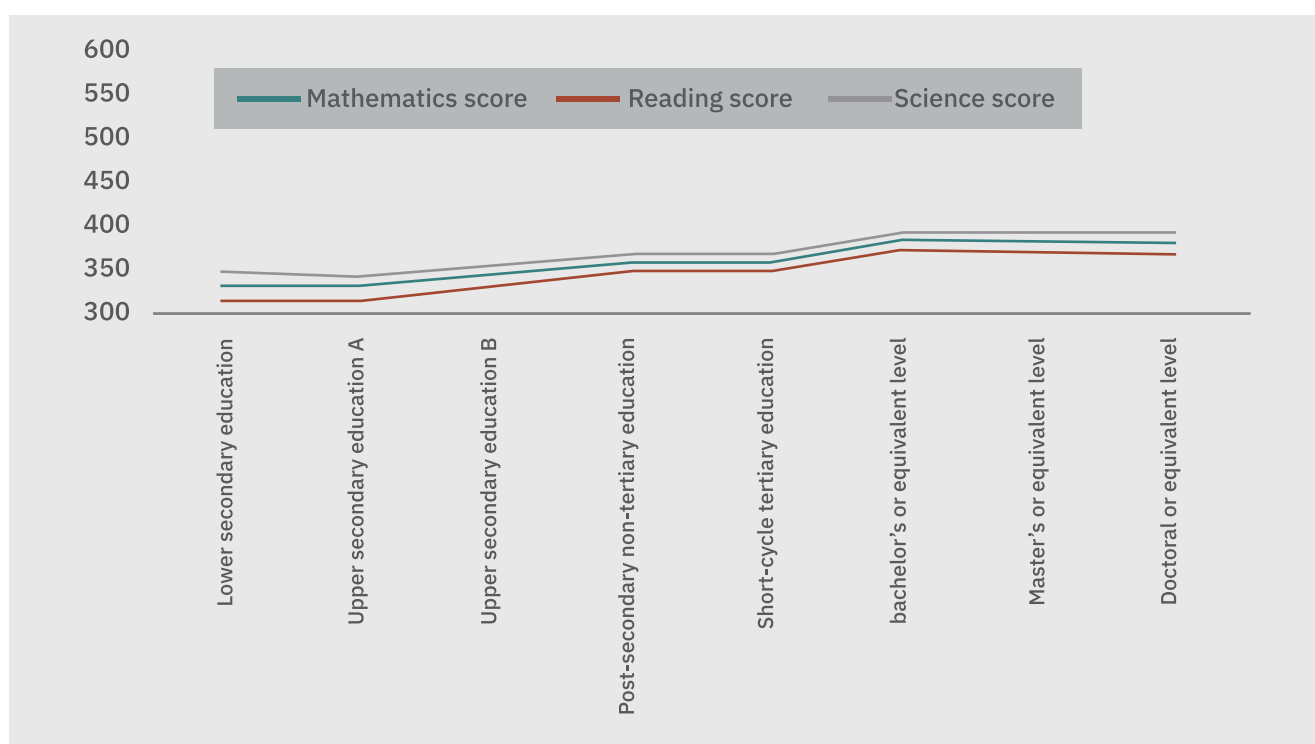
CHAPTER 4
LEARNING DURING SCHOOL CLOSURE

This Chapter Examines Students Learning Experiences During School Building closure due to the global spread of COVID-19. The chapter first describes the length of school closure reported by students. This is followed by the descriptions on students' reports on their learning experiences and feeling during school building closure. The final section of the chapter examines how the length of school closure and learning experiences during school closure are related to education outcomes.

The global spread of COVID-19 has led to unprecedented interruptions and changes to schooling around the world since 2020. In many parts of the world, schools were closed, and learning shifted to remote environments rather than happening in-person, at least during the peak of outbreaks. PISA 2022 integrated a Global Crises Module (GCM) and asked students and school principals to respond to questions on ways in which learning took place for students during school closures (Bertling, Rojas, Alegre, & Faherty, 2020). This chapter examines these responses, focusing especially on students' and on their experiences, according to their socio-economic background, school performance and well-being.

Length of school closure

In PISA 2022, students were asked whether their school building closed to students for more than a week in the previous three years due to COVID-19[4] . Students indicated the duration of the school closure by selecting from the following response options: "No"; "Yes, up to 1 month"; "Yes, more than 1 month and up to 3 months"; "Yes, more than 3 months and up to 6 months"; "Yes, more than 6 months and up to 12 months"; "Yes, more than 12 months".

As shown Figure 4.1., approximately 84% of students reported that their school were closed for some time because of COVID-19 in Palestine but also across the OECD countries, on average. Almost 35% of students reported that their schools were closed because of COVID-19 for more than 6 months in Palestine, while about (37%) of students reported so on average across OECD countries.

Figure 4.1. School closures due to COVID-19 in Palestine and the OECD.
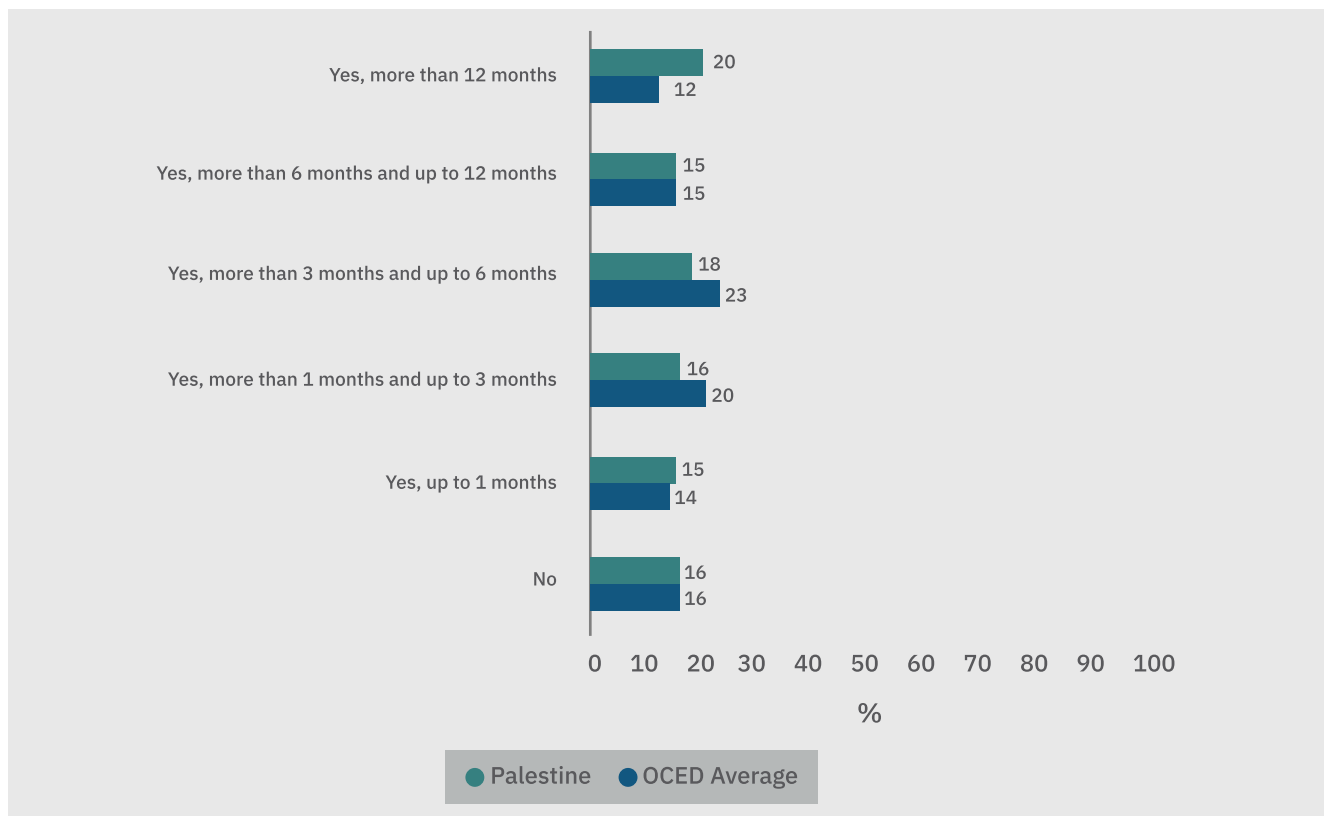
4 In this question, students were asked:
• Not to count the time that students' schools were scheduled to be closed for school holiday or vacations.
• To count the time across all schools they attended if they changed schools during the previous three years; and
• To count all closing times if students' schools had to close and reopen multiple times.

"School closure" in this chapter refers to the period of school building closed responded by students.

Learning and learning support during school closures.

In the situation where most students experienced school closure, how their learning be sustained?

Students were asked how often someone from their school completed an activity to sustain their learning. Students indicated the frequency with which someone from their school completed a list of eight activities, such as sending them learning materials to study on their own and checking in with them to ensure that they were completing their assignments, by selecting from four response options: "Never"; "A few times"; "About once or twice a week"; and "Every day or almost every day".

Table 4.1 shows that in Palestine, asking students to submit completed school assignments, offering virtual classes on video communication programs, and sending students assignments were the most frequent actions students' schools took to sustain learning. On average, approximately 30% of students responded that these actions happened every day or almost every day.

On average across OECD countries, the three most frequent actions schools took to sustain learning were: offering virtual classes on video communication programs, uploading materials on a learning management system, sending students assignments, on average, at least 45% of students responded that these actions happened every day or almost every day. In contrast, only around 13% of students indicated that teachers were checking in with them to ask how they were feeling at the same frequency. Around 38% of all students reported that their teachers never checked in with them to ask how they were feeling during the entire time of school closures and around 27% of students, on average, responded that their teachers never gave them helpful tips how to study on their own or checked in with them to ensure they were completing assignments.

Table 4.1. School actions to sustain learning during COVID-19 closures in Palestine and the OECD.

Indicators (School Actions)	Never (%)		A few times (%)		About once or twice a week (%)		Every day or almost every day (%)	
	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.
Send you learning materials to study on your own.	24	17	32	28	23	23	22	33
Send you assignments.	16	8	26	23	28	24	30	45
Uploaded materials on a learning management system or school learning platform.	23	13	29	19	26	21	22	46
Checked in with you to ensure you were completing your assignments.	18	21	30	30	28	26	25	24
Offered live virtual classes on video communication programs.	17	13	25	18	27	19	31	51
Asked you to submit completed school assignments.	14	10	23	22	30	28	33	40
Gave you helpful tips about how to study on your own.	16	27	29	33	29	23	26	17
Checked in with you to ask how you were feeling.	23	38	28	31	26	17	23	13

Digital devices and learning resources

Students were asked about the type of digital device that they used most often for schoolwork (e.g. "My own laptop, desktop computer, or tablet"; "My own smartphone") during the time when the school building was closed due to COVID-19. Students answered the question by selecting the response option that most closely described the type of digital device that they used.

Figure 4.2 shows that in Palestine, the three most frequently used devices were students' own smartphone (around 55%), followed by students' own laptop, desktop computer, or tablet (around 15%) and a digital device that was also used by other family members (around 13%). Only a minority of students indicated using a school-provided device and around 11% of all students responded they did not have any digital device available for their schoolwork.

Across OECD countries, the two most frequently used devices on average were students' own laptop, desktop, or tablet (around 55%), followed by students' own smartphone (around 29%). Only a minority of students indicated using a shared or school-provided device and only around 2% of all students responded they did not have any digital device available for their schoolwork.

Figure 4.2. Type of digital device used for schoolwork during COVID-19 closures in Palestine and the OECD
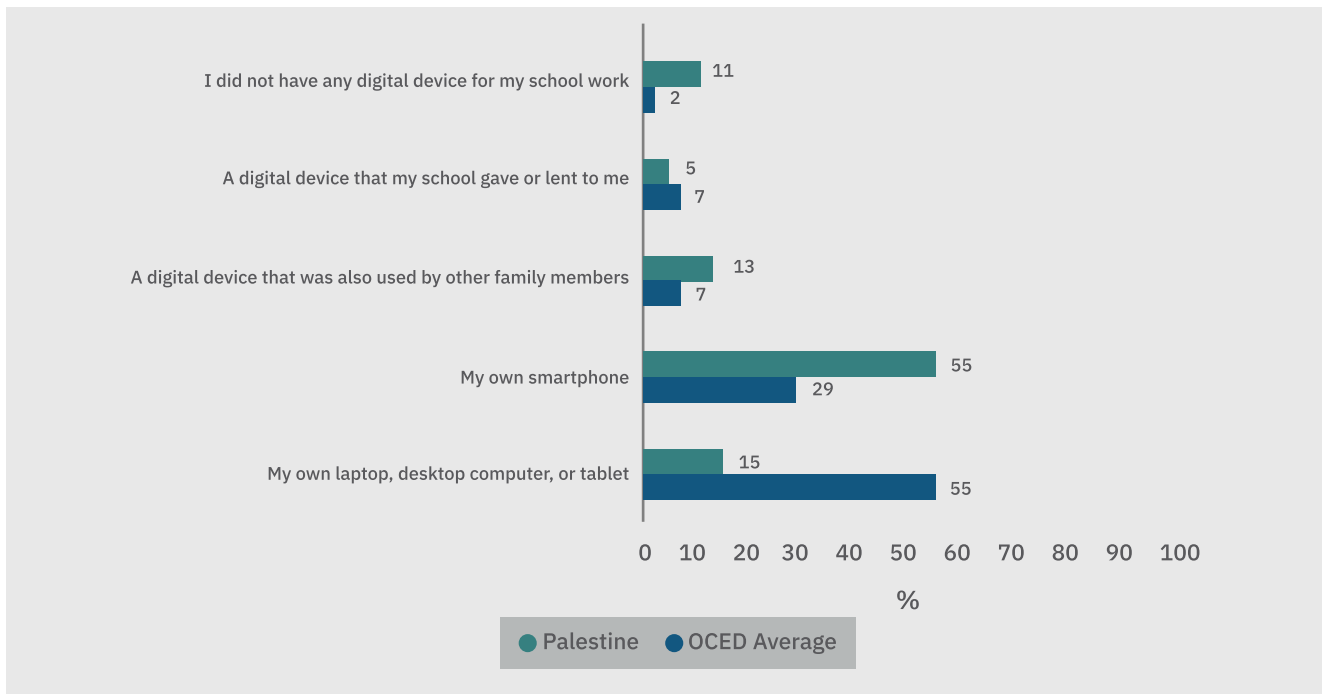
Students were asked to report how often they used specific learning resources (e.g. "Paper textbooks, workbooks, or worksheets"; "Online textbooks, workbooks, or worksheets") while the school building was closed due to COVID-19. Students indicated the frequency that they used each learning resource by selecting from four response options ("Never"; "A few times"; "About once or twice a week"; "Every day or almost every day").

Table 4.2 shows that in Palestine, real-time lessons by a teacher from the students' school on a video communication program (e.g. Zoom) was the most frequently used learning resource; around 27% of students reported that they used this learning resources every day or almost every day while school was closed. Recorded lessons from third-party sources and lessons broadcast over radio or television were less frequently used.

Across OECD countries, on average, real-time lessons by a teacher from the students' school on a video communication program (e.g. Zoom) was the most frequently used learning, resource with some large variation across countries/economies. Recorded lessons from third-party sources and lessons broadcast over radio or television were less frequently used, on average.

Table 4.2. Type of learning resources used during COVID-19 closures in Palestine and the OECD.

Learning Resource	Never (%)		A few times (%)		About once ot twice a week (%)		Every day or almost every day (%)	
	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.
Paper textbooks, workbooks, or worksheets.	22	19	34	33	25	23	19	26
Digital textbooks, workbooks, or worksheets.	20	17	33	30	26	25	21	27
Real-time lessons by a teacher my school on a video communication program(e.g. Zoom).	18	12	28	19	27	19	27	51
Real-time lessons by a private tutor on a video communication program(e.g. Zoom).	22	37	28	19	28	17	22	28
Learning material my teachers sent via (SMS or (whatsapp).	20	38	30	23	29	21	21	18
Recorded lessons or other digital material provided by teachers from my school.	18	27	30	29	30	25	22	18
Recorded lessons or other digital material from other resource(e.g. Khan Academy).	28	39	27	26	26	20	19	14
Lessons broadcast over radio or television.	36	66	27	17	21	10	16	7

Problems with self-learning

Students were asked to report how often they had specific problems with completing schoolwork (e.g. "Problems with Internet access"; "Problems with finding a quiet place to study"; "Problems with motivating myself to do schoolwork") while the school building was closed due to COVID-19. Students indicated the frequency that they encountered each problem by selecting from four response options: "Never"; "A few times"; "About once or twice a week"; "Every day or almost every day". The eight statements shown in Table 0. were combined to create the index of problems with self-directed learning (with an average of 0 and a standard deviation of 1 across OECD countries). Positive values on this scale mean that the student reported more problems than the average student in OECD countries.

Table 4.3 shows that in Palestine, 67% of students experienced problems with internet access at least few times, and 67% reported problems with understanding their school assignments at least few times , while 56% of students didn't experience any problems with access to school supplies. About 14% of students reported that they had experienced problems with finding someonewho could help them with their schoolwork every day or almost every day, and about 14% of students reported that they had experienced problems with motivating themselveselves to do schoolwork everyday or almost every day.

On average across OECD countries very few students experienced problems with access to school supplies, while 80% of students answered experiencing problems with Internet access at least a few times, and 67% reported problems with understanding school assignments or problems with motivating themselves to do schoolwork at least a few times. On average, 25% of students reported that they had problems motivating themselves to do schoolwork every day or almost every day.

Table 4.3. Problems with self-learning during COVID-19 closures in Palestine and the OECD.

Problems	Never (%)		A few times (%)		About once or twice a week (%)		Every day or almost every day(%)	
	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.
Access to a digital device access when I needed.	34	47	38	36	18	13	10	5
Internet access.	23	33	42	45	22	16	13	6
Access to school supplies (e.g. Paper, pencil)	42	65	31	23	20	9	8	3
Finding a quiet place to study.	29	52	38	29	22	12	12	7
Finding time to study because I had household responsibilities.	32	55	35	27	22	13	10	5
Motivating myself to do schoolwork	27	20	36	32	23	23	14	25
Understanding my school assignments.	23	24	40	42	25	23	13	11
Finding someone who could help me with my schoolwork.	31	44	33	32	22	15	14	9

Family support

Students were asked to report how often someone in their family provided specific kinds of learning support (e.g. "Help me create a learning schedule"; "Help me access learning materials online") while the school building was closed due to COVID-19. Students indicated the frequency that someone in their family provided each specific kind of learning support by selecting from four response options: "Never"; "A few times"; "About once or twice a week"; "Every day or almost every day".

Table 4.4 shows some variation into how frequently students in Palestine received different types of support from family members. On average, the most frequent type of support students reported was "Check whether you were completing your school assignments" and "Help you find additional learning resources" (21 % of students said this happened "every day or almost every day") and the least frequent type of support was "Help you create a learning schedule" and "Help you with your schoolwork" (24% of students said this "never" happened).

Table 4.4 shows considerable amount of variation how frequently students across all countries/economies received support from family members. On average across OECD countries, the most frequent type of support students reported was "Ask you what you were learning" (22% of students said this happened "every day or almost every day") and the least frequent type of support was "Help you create a learning schedule" (46% of students said this "never" happened).

Table 4.4. Family support for self-learning in Palestine and the OECD.

Types of learning support	Never (%)		A few times (%)		About once ot twice a week (%)		Every day or almost every day (%)	
	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.
Help you with your schoolwork	24	23	40	42	24	24	13	12
Ask you what you were learning	17	15	36	36	27	28	20	22
Help you create a learning schedule	24	46	37	29	25	16	14	10
Help you access learning materials online	19	34	35	34	29	20	17	13
Check whether you were completing your school assignments	15	23	33	33	30	24	21	20
Explain new content to you	19	37	34	33	29	19	18	10
Help you find additional learning resources	20	36	33	33	26	19	21	11
Teach you additional topics not part of your school assignments	19	41	32	31	28	17	20	10

Student feelings about learning at home

Students were asked to rate their agreement with statements about how they felt about learning at home (e.g. "I felt lonely."; "I enjoyed learning by myself.") While the school building was closed due to COVID-19. Students indicated their agreement with each statement by selecting from four response options ("Strongly disagree"; "Disagree"; "Agree"; "Strongly agree"). The ten statements shown in Table 4.5 were combined to create the index of feelings about learning at home whose average is 0 and standard deviation is 1 across OECD countries. Positive values on this scale mean that the student reported more positive feeling than the average student in OECD countries.

In Palestine, (55%) of students agreed or strongly agreed that their teachers were available when they needed them, they improved their skills using digital devices during times of school building closures (66%), their teachers were well-prepared to deliver instruction remotely (66%), they felt well prepared to learn on their own (57%) and enjoyed learning by themselves (47%). At the same time, many students reported that they missed sports and other physical activities organised by their schools (58%). Only around (55%) of students agreed or strongly agreed that they were motivated to learn and around (49%) of students agreed that they fell behind in their schoolwork and around (55%) felt anxious. (38%) of students agreed that they felt lonely during the times of school building closures. Table 0.Table 4.5 shows that, on average across OECD

countries, most students agreed or strongly agreed that their teachers were available when they needed them (67%), they improved their skills using digital devices during times of school building closures (63%), their teachers were well-prepared to deliver instruction remotely (51%), they felt well prepared to learn on their own (55%), and enjoyed learning by themselves (55%). At the same time, many students reported that they missed sports and other physical activities organised by their schools (57%). Only around (38%) of students agreed or strongly agreed that they were motivated to learn and around (48%) of students agreed that they fell behind in their schoolwork and around (45%) felt anxious Thirty-eight percent agreed that they felt lonely during the times of school building closures.

Table 4.5. Feeling about learning during school closure in Palestine and the OECD.

Indicator	Strongly Disagree (%)		Disagree (%)		Agree (%)		Strongly Agree (%)	
	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.
I felt lonely	27	28	35	34	27	27	11	11
I enjoyed learning by myself	21	16	32	30	35	41	12	14
My teachers were available when I needed them	14	11	31	22	45	55	10	12
I felt anxious about schoolwork	13	18	31	35	44	33	11	12
I was motivated to learn	15	22	30	39	42	31	13	7
I fell behind in my schoolwork	15	17	36	36	39	35	10	13
I improved my skills in using digital devices for learning purposes	11	12	23	25	50	50	16	13
My teachers were well-prepared to provide instruction remotely	11	16	23	33	49	42	17	9
I was well prepared to learn on my own	14	13	29	32	43	44	14	11
I missed sports and other physical activities organised by my school	15	18	27	25	42	36	16	21

Students' self-evaluation of learning during school closure in Palestine and OECD

Students were asked how much they believed they learnt each week while the school building was closed compared to a typical week when they attend school in person. Students selected from three response options: "I learnt less when my school building was closed"; "I learnt about as much when my school building was closed"; or "I learnt more when my school building was closed".

In Palestine, around (56%) of students felt that they learnt less when their school building was closed compared to the time pre-COVID, (28%) of students felt that they learnt about the same as before, and (17%) felt that they learnt more during times of school building closures.

Figure 4.3 shows that, on average across OECD countries, 65% of students felt that they learnt less when their school building was closed compared to the time pre-COVID, 26% of students felt that they learnt about the same as before, and 9% felt that they learnt more during times of school building closures.

Figure 4.3. Subjective impression of learning during school closure in Palestine and the OECD.
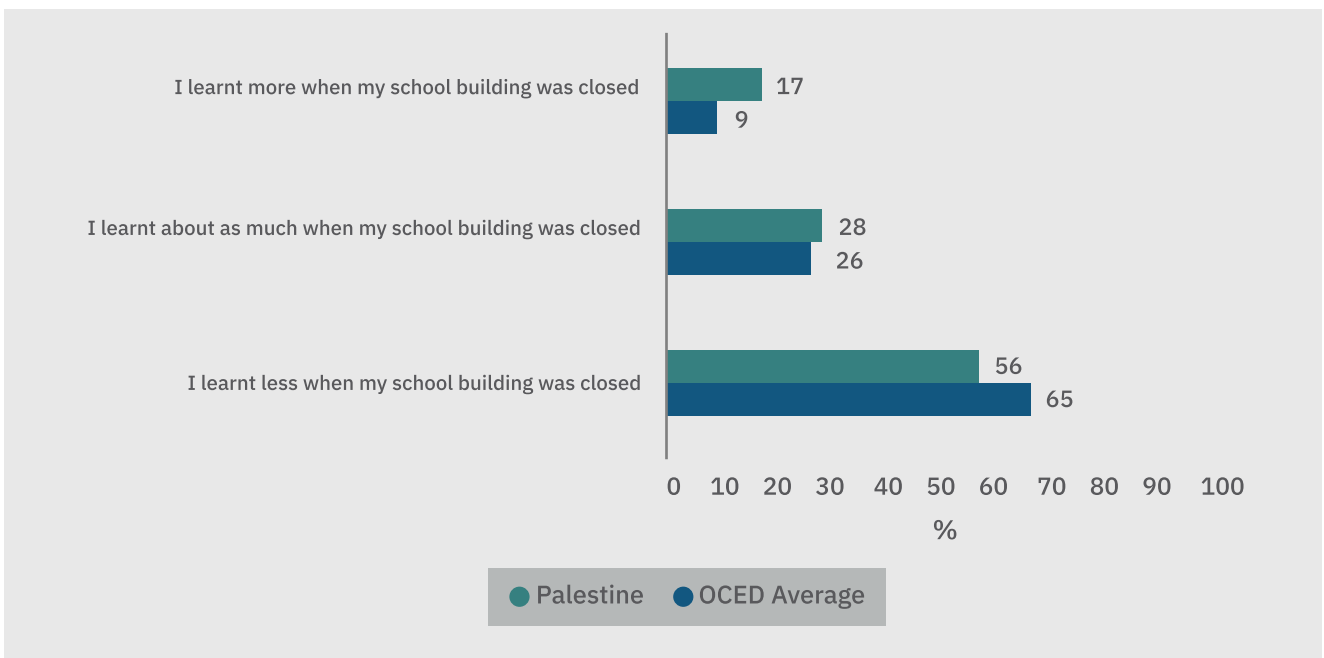
Students were asked to rate their confidence about completing tasks related to self-directed learning (e.g. "Finding learning resources online on my own"; "Planning when to do schoolwork on my own") if their school building closed again in the future. Students rated their confidence by selecting from four response options ("Not at all confident"; "Not very confident"; "Confident"; "Very confident").

In Palestine, on average across OECD countries, most students felt confident or very confident about doing each activity: over (60%) of students felt most confident or very confident about completing schoolwork independently, assessing their progress with learning, felt most confident or very confident about motivating themselves to do schoolwork, and focusing on schoolwork without reminders. Around a quarter of students reported that they were not very confident or not at all confident that they could use a learning management system or school learning platform or finding learning resources online on their own or using a video communication program.

Figure 4.6 shows that, on average across OECD countries, most students felt confident or very confident about doing each activity: over (70%) of students felt most confident or very confident about using a learning management system or video communications program, while a small yet substantive proportion of around (10%) reported that they were not at all confident they could perform these skills.

Table 4.6. Students' confidence in self-directed learning in Palestine and the OECD.

Indicators	Not at all confident (%)		Not very Confident (%)		Confident (%)		Very Confident (%)	
	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.	Palestine	OECD Avg.
Using a learning management system or school learning platform.	25	11	29	15	32	44	14	30
Using a video communication program (e.g Zoom)	19	8	28	15	38	45	15	33
Finding learning resources online on my own.	15	8	26	19	44	49	15	24
Planning when to do school work on my own.	14	9	27	22	44	48	15	21
Motivating myself to do schoolwork	11	13	24	29	49	43	16	15
Focusing on schoolwork without reminders.	10	10	27	27	47	45	16	18
Completing schoolwork independently.	10	8	23	20	48	50	18	21
Assessing my progress with learning.	11	9	22	25	47	48	19	18

How learning during school closure varies in Palestine

This section examines how the results shown in the previous sections vary across different sub-groups of students and schools in Palestine, focusing on student gender, region (Westbank, Gaza Strip), and supervising authority (public, private).

Variation by student gender

Students' experiences with learning during school closure differ according to their gender. Table 4.7 shows that girls' students reported statistically significantly more school actions to sustain learning compared to boys.

Table 4.7. School actions to sustain learning during school closure in Palestine by student gender.

Indicators (School Actions)	Never (%)		A few times (%)		About once or twice a week (%)		Every day or almost every day (%)	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Send you learning materials to study on your own.	24	21	29	25	24	29	22	25
Send you assignments.	15	18	28	29	28	31	29	22
Uploaded materials on a learning management system or school learning platform.	11	17	21	27	29	32	39	24
Checked in with you to ensure you were completing your assignments.	15	19	22	31	25	30	37	20
Offered live virtual classes on video communication programs.	16	21	29	31	27	31	29	17
Asked you to submit completed school assignments.	24	22	27	32	25	29	25	18
Gave you helpful tips about how to study on your own.	13	21	25	29	27	30	36	20
Checked in with you to ask how you were feeling.	21	29	32	31	22	24	25	16

Figure 4.4 provides insights into the ownership and availability of digital devices among girls and boys students for schoolwork purposes. The data reveals that a higher percentage of girls' students (59%) reported using their own smartphones compared to boys' students (49%). Additionally, a small proportion of students, both girls and boys, reported owning their own laptops, desktop computers, or tablets. Moreover, a significant number of students (13% to 14%) relied on digital devices that were shared with other family members. However, there were notable gender differences in terms of school-provided devices, with a higher percentage of boys' students (9%) reporting receiving devices from their schools compared to girls' students (3%). Furthermore, a minority of students, both girls and boys, reported not having any digital device for their schoolwork. These findings underscore the need to address the digital divide and ensure equal access to digital devices for all students, irrespective of gender, to facilitate their educational endeavors effectively.

Figure 4.4. Type of digital device used for schoolwork during school closure in Palestine by student gender.
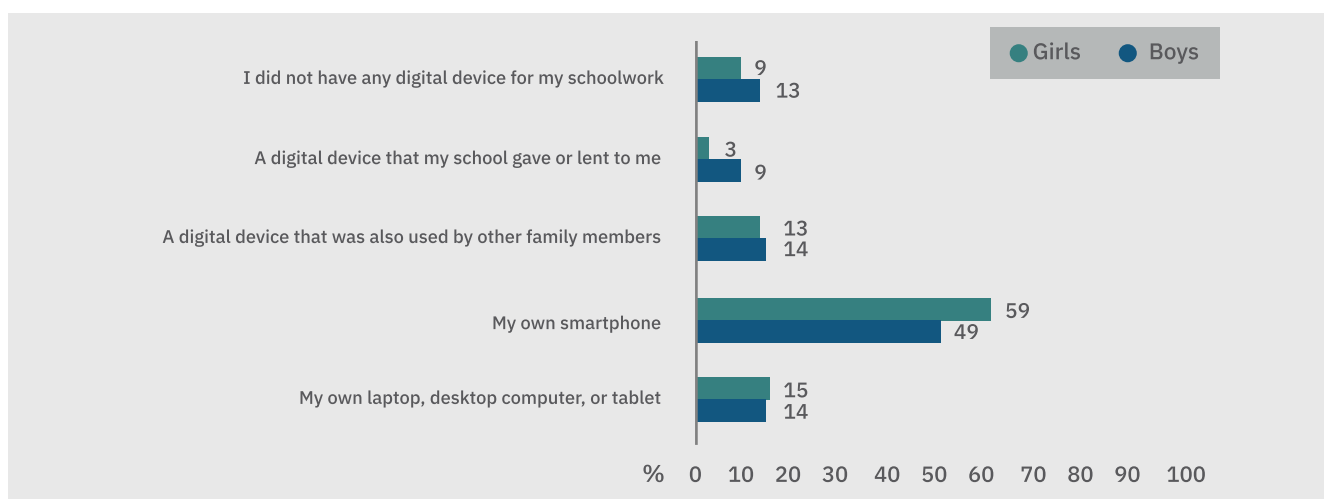
Table 4.8 provides valuable information about the types of learning resources used by girls and boys' students in Palestine during school closures. The data reveals that paper textbooks, workbooks, or worksheets were utilized by a significant portion of students, with 20% of girl and 25% of boys reporting never using them. Digital textbooks, workbooks, or worksheets were also frequently employed, with similar usage patterns observed between genders. Real-time lessons conducted by school teachers on video communication platforms were accessed by a substantial percentage of students, with higher daily or near-daily participation reported by girl compared to boys. Additionally, private tutoring sessions on video communication platforms were attended by a significant number of students, indicating the supplementary support sought during remote learning. Various digital resources, such as learning materials sent via SMS or WhatsApp and recorded lessons provided by teachers, were widely utilized. Notably, access to recorded lessons or digital material from external sources was more prevalent among boys. Furthermore, radio or television broadcasts of lessons were accessed by a considerable number of students, particularly girl. These findings shed light on the diverse learning resources employed by students in Palestine and emphasize the importance of providing equitable access to digital tools and online educational content during periods of school closures.

Table 4.8. Type of learning resources used during school closure in Palestine by student gender.

Learning Resource	Never (%)		A few times (%)		About once ot twice a week (%)		Every day or almost every day (%)	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Paper textbooks, workbooks, or worksheets.	20	25	35	32	25	26	20	18
Digital textbooks, workbooks, or worksheets.	19	22	34	33	25	27	23	17
Real-time lessons by a teacher my school on a video communication program(e.g. Zoom)	18	18	26	32	25	30	31	19
Real-time lessons by a private tutor on a video communication program(e.g. Zoom)	25	18	27	31	26	31	23	20
Learning material my teachers sent via (SMS or (whatsapp)	21	19	29	32	27	32	23	18
Recorded lessons or other digital material provided by teachers from my school.	19	17	30	29	28	34	23	20
Recorded lessons or other digital material from other resource(e.g. Khan Academy)	32	22	27	28	23	30	18	20
Lessons broadcast over radio or television.	42	25	26	29	18	26	14	21

Table 4.9 presents the challenges encountered by girls' and boys' students in Palestine during self-learning. The data reveals that both genders faced similar difficulties across various aspects of remote education. Access to a digital device when needed was a common problem, with 33% of boys and 35% of girl reporting this issue. Internet access was also a significant challenge, with 25% of boys and 21% of girls indicating difficulties in this area. Access to school supplies posed a greater obstacle for girls, with 48% reporting challenges compared to 30% of boys. Finding a quiet place to study and managing household responsibilities were common concerns for both genders. Motivating oneself to do schoolwork and understanding assignments

were areas where girls faced slightly greater difficulties. Finding someone to help with schoolwork was also a shared challenge. These findings underscore the need for addressing barriers to remote learning, such as improving access to technology and internet connectivity, providing necessary learning materials, and offering support mechanisms to ensure an inclusive and equitable learning experience for all students in Palestine.

Table 4.9. Problems with self-learning during school closure in Palestine by student gender.

Problems with	Never (%)		A few times (%)		About once or twice a week (%)		Every day or almost every day (%)	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Access to a digital device access when I needed.	33	35	34	41	22	15	11	8
Internet access.	25	21	39	44	22	22	13	12
Access to school supplies (e.g. Paper, pencil)	30	48	34	29	26	17	10	6
Finding a quiet place to study.	25	31	39	37	25	20	12	11
Finding time to study because I had household responsibilities.	25	36	36	35	27	19	11	9
Motivating myself to do schoolwork.	24	28	34	37	27	21	16	14
Understanding my school assignments.	23	22	34	43	28	24	15	11
Finding someone who could help me with my schoolwork.	26	34	28	35	26	19	18	11

The results from Table 4.10 highlight the level of family support for self-learning among boys and girls in Palestine. It is evident that both genders received varying degrees of assistance from their families in different aspects of their education. Girls tended to receive more help with schoolwork, as 42% reported receiving it a few times and 22% received it about once or twice a week, compared to 36% and 26% respectively for boys. Similarly, girls were more likely to be asked about their learning (37% a few times, 25% about once or twice a week) compared to boys (34% and 28% respectively). However, boys received slightly more support in teaching additional topics, with 23% reporting receiving it every day or almost every day, compared to 19% for girls. These findings underscore the importance of family involvement in supporting students' self-learning efforts and highlight areas where targeted support can be provided to ensure equitable educational opportunities for all students in Palestine.

Table 4.10. Family support for self-learning during school gender in Palestine by student gender.

Types of learning support	Never (%)		A few times (%)		About once ot twice a week (%)		Every day or almost every day (%)	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Help you with your schoolwork	24	23	42	36	22	26	12	15
Ask you what you were learning	15	21	37	34	25	28	22	17
Help you create a learning schedule	27	19	36	38	23	28	14	14
Help you access learning materials online	20	18	36	34	26	34	19	14
Check whether you were completing your school assignments	16	14	32	35	28	35	24	17
Explain new content to you	21	16	35	32	26	34	18	18
Help you find additional learning resources	21	18	35	32	24	30	21	21
Teach you additional topics not part of your school assignments	21	17	34	29	27	31	19	23

Table 4.11 provides insights into the feelings about learning during school closure among boys and girls students in Palestine. The results indicate that both genders had varied experiences and emotions related to their education. While a higher percentage of girls students reported feeling lonely compared to their boys counterparts (25% strongly disagreed, 36% disagreed), boys students also indicated a sense of loneliness (32% strongly disagreed, 33% disagreed). Both genders expressed enjoyment in learning by themselves, with girls slightly higher in agreement (35% agreed, 11% strongly agreed) compared to boys (28% agreed, 15% strongly agreed). Regarding the availability of teachers, a higher percentage of girls agreed that their teachers were accessible when needed (48% agreed, 10% strongly agreed) compared to boys (38% agreed, 11% strongly agreed). Similar patterns were observed in terms of feeling anxious about schoolwork, motivation to learn, falling behind in schoolwork, and preparedness for remote instruction. However, boys reported a

slightly higher improvement in digital device skills for learning purposes (25% agreed, 17% strongly agreed) compared to girls students (22% agreed, 15% strongly agreed). Both genders expressed missing sports and physical activities organized by their schools. These findings emphasize the importance of considering students' emotional well-being and providing adequate support and resources during school closure to ensure a positive learning experience for all students in Palestine.

Table 4.11. Feeling about learning during school closure in Palestine by student gender.

Indicator	Strongly Disagree (%)		Disagree (%)		Agree (%)		Strongly Agree (%)	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
I felt lonely	25	32	36	33	30	24	10	11
I enjoyed learning by myself	20	22	35	28	35	35	11	15
My teachers were available when I needed them	12	18	30	33	48	38	10	11
I felt anxious about schoolwork	12	17	29	34	48	38	11	11
I was motivated to learn	15	14	30	31	43	40	11	15
I fell behind in my schoolwork	13	19	37	33	40	38	10	11
I improved my skills in using digital devices for learning purposes	10	15	22	25	53	44	15	17
My teachers were well-prepared to provide instruction remotely	9	14	23	24	52	44	16	18
I was well prepared to learn on my own	12	16	31	27	44	41	13	17
I missed sports and other physical activities organised by my school	14	17	29	23	43	40	14	20

Figure 4.5 illustrates the subjective impression of learning during school closure among boys and girls in Palestine. The data shows the percentage distribution of responses for each gender regarding their learning experience when their school buildings were closed.

Among boys, 48% expressed that they learned less during the closure, while 31% indicated that they learned about the same amount. A smaller percentage of boys, 21%, reported that they learned more during the school building closure.

For girls' students, a higher proportion of 60% stated that they learned less, while 26% reported learning about the same amount. Only 14% of girls' students mentioned that they learned more during the closure. These findings suggest that both boys' and girls' students perceived a decrease in their learning opportunities during the period when their school buildings were closed. However, a higher percentage of girls' students reported learning less compared to their boys' counterparts. This highlights the potential impact of school closures on the educational experiences of girls' students in Palestine.

Understanding the subjective impressions of students regarding their learning during school closures can help identify areas for improvement and inform strategies to mitigate the learning loss experienced by students, particularly among girls' students, during such disruptions.

Figure 4.5. Subjective impression of learning during school closure in Palestine by student gender.
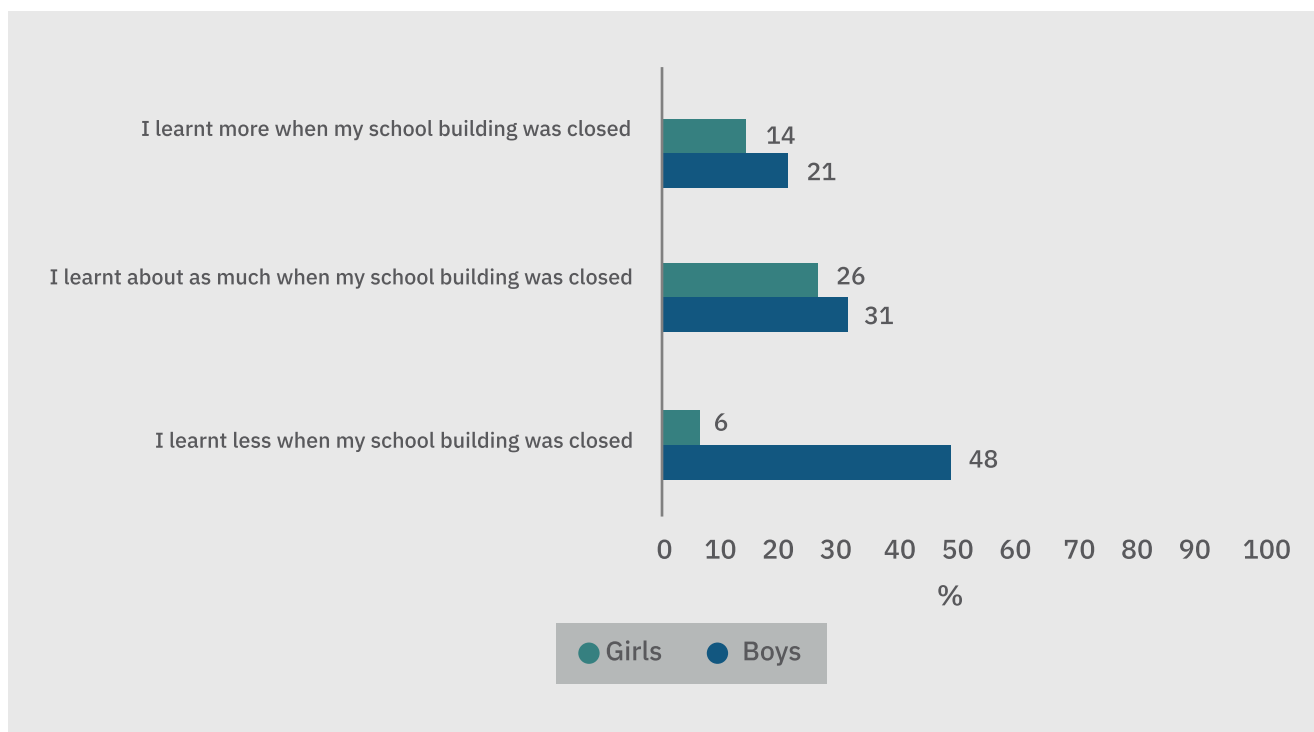
Table 4.12 presents the results of a study examining students' confidence in self-directed learning in Palestine, disaggregated by gender. The findings from the table indicate that, overall, boys' students exhibited slightly higher levels of confidence compared to their girls' counterparts across most indicators. In terms of using a learning management system or school learning platform, both girls' and boys' students reported moderate levels of confidence, with the majority expressing confidence or very confidence (35% girls, 28% boys). Similarly, when it came to using video communication programs, the majority of students, regardless of gender, felt confident in their ability (40% girls, 36% boys). However, girls' students generally displayed lower confidence levels compared to boys in finding learning resources online, planning schoolwork, motivating themselves, focusing on school work without reminders, completing school work independently, and assessing their progress with learning. These findings, as depicted in Table 4.12, highlight the need for targeted support and interventions to enhance self-directed learning skills, particularly among girls' students, in order to promote greater confidence and autonomy in their educational journeys.

Table 4.12. Students' confidence in self-directed learning during school closure in Palestine by student gender.

Indicators	Not at all confident (%)		Not very Confident (%)		Confident (%)		Very Confident (%)	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Using a learning management system or school learning platform	23	28	30	29	35	28	13	16
Using a video communication program (e.g Zoom)	18	21	27	30	40	36	16	13
Finding learning resources online on my own	14	17	25	28	46	40	15	15
Planning when to do school work on my own	13	15	27	29	45	41	15	15
Motivating myself to do schoolwork	10	13	22	28	52	43	16	16
Focusing on schoolwork without reminders	10	12	27	27	49	44	15	17
Completing schoolwork independently	9	12	22	26	51	42	17	20
Assessing my progress with learning	10	14	24	20	49	45	18	21

Variation by region

Table 4.13 presents the school actions taken to sustain learning during school closures in Palestine, categorized by region. The data reveals the percentage distribution of responses for various indicators. In the West Bank region, 26% of students reported never receiving learning materials, while 29% received them a few times, 23% received them about once or twice a week, and 23% received them every day or almost every day. Similarly, in the Gaza Strip region, 22% of students never received learning materials, 34% received them a few times, 22% received them about once or twice a week, and 22% received them every day or almost every day. Regarding assignments, 17% of students in the West Bank never received assignments, while 27% received them a few times, 28% received them about once or twice a week, and 28% received them every day or almost every day. In the Gaza Strip, 16% never received assignments, 25% received them a few times, 28% received them about once or twice a week, and 32% received them every day or almost every day. These findings highlight the variations in school actions to support remote learning across regions in Palestine, emphasizing the need for further analysis and targeted interventions to ensure equitable access to educational resources and support during school closures.

Table. 4.13. School actions to sustain learning during school closure by region in Palestine.

Indicators (School Actions)	Never (%)		A few times (%)		About once or twice a week (%)		Every day or almost every day (%)	
	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip
Send you learning materials to study on your own.	26	22	29	34	23	22	23	22
Send you assignments.	17	16	27	25	28	28	28	32
Uploaded materials on a learning management system or school learning platform.	24	21	29	28	26	26	20	25
Checked in with you to ensure you were completing your assignments.	19	16	32	27	27	29	23	27
Offered live virtual classes on video communication programs.	17	17	24	27	22	32	38	24
Asked you to submit completed school assignments.	14	13	23	23	29	32	35	32
Gave you helpful tips about how to study on your own.	18	14	31	26	27	31	24	29
Checked in with you to ask how you were feeling.	27	19	30	25	22	30	21	26

Figure 4.6 presents the results of a study on the type of digital devices used for schoolwork in Palestine, categorized by region (Gaza Strip and West Bank). The findings indicate that the majority of students in both regions rely on their own smartphones for schoolwork, with 50% in the Gaza Strip and 60% in the West Bank reporting this usage. The use of personal laptops, desktop computers, or tablets is less prevalent, with only 10% of students in the Gaza Strip and 19% in the West Bank indicating ownership of such devices. A significant proportion of students (17% in the Gaza Strip and 10% in the West Bank) reported using digital devices that were also shared by other family members. Additionally, a small percentage of students (6% in the Gaza Strip and 5% in the West Bank) reported using digital devices provided or lent to them by their schools. However, a concerning finding is that a notable proportion of students reported not having any digital device for their schoolwork, with 16% in the Gaza Strip and 6% in the West Bank facing this challenge. These results underline the importance of addressing disparities in digital device access and the need for strategies to ensure equitable access to online education resources for all students in Palestine.

Figure 4.6. Type of digital device used for schoolwork during school closure in Palestine by region.
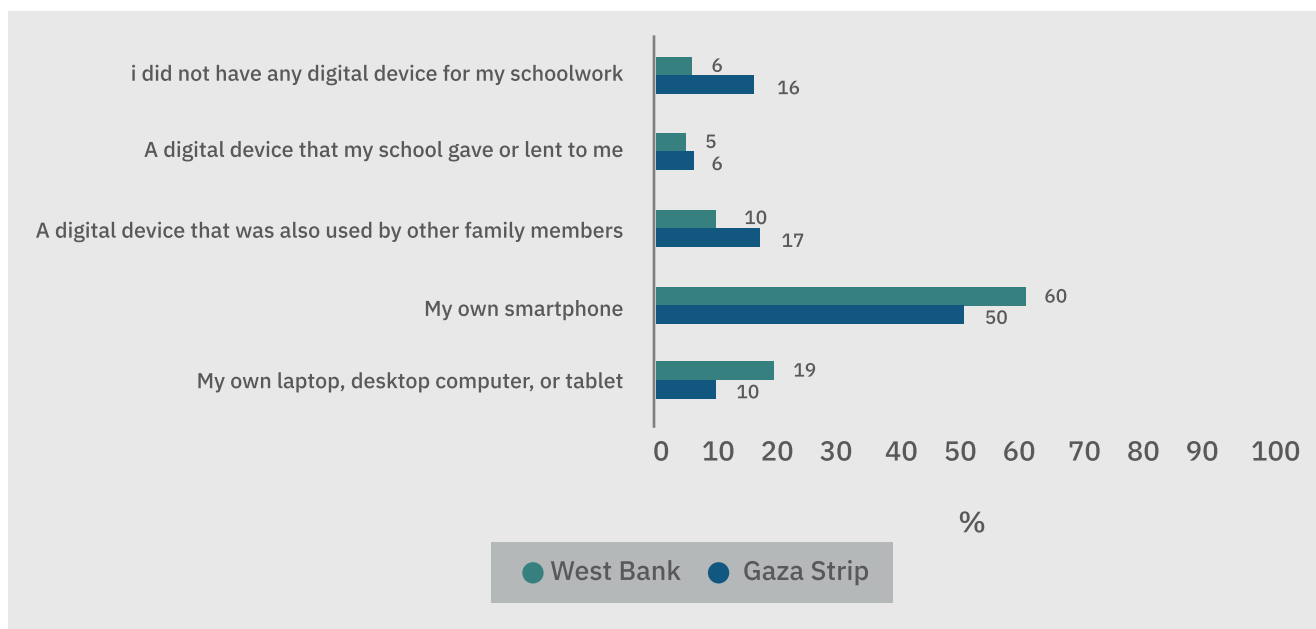
Table 4.14 presents the usage patterns of different learning resources during school closures in Palestine, categorized by region (West Bank and Gaza Strip). The findings reveal that paper resources, such as textbooks, workbooks, or worksheets, were widely utilized by students in both regions, with similar percentages across different usage frequencies. Digital resources, including digital textbooks, workbooks, or worksheets, were also commonly used, with slightly higher usage frequencies in the Gaza Strip. Real-time lessons conducted by school teachers through video communication platforms saw significant participation, particularly in the Gaza Strip. Private tutor lessons through video communication platforms were also popular among students, with substantial engagement in both regions. Learning material sent by teachers via SMS or WhatsApp was received by a considerable number of students, with higher frequencies reported in the Gaza Strip. Recorded lessons or digital materials provided by teachers from their schools were utilized by the majority of students, showing consistent patterns in both regions. Additionally, recorded lessons or digital materials from external resources, such as Khan Academy or Coursera, were employed by a notable proportion of students, particularly in the West Bank. Lessons broadcast over radio or television had varying levels of engagement, with relatively higher attendance rates reported in the West Bank. These findings highlight the diverse range of learning resources used by students during school closures, emphasizing the importance of both traditional and digital resources in facilitating remote learning in Palestine.

Table 4.14. Type of learning resources used during school closure in Palestine by region.

Learning Resource	Never (%)		A few times (%)		About once ot twice a week (%)		Every day or almost every day (%)	
	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip
Paper textbooks, workbooks, or worksheets.	22	21	34	34	25	26	20	19
Digital textbooks, workbooks, or worksheets	22	18	32	35	24	27	21	20
Real-time lessons by a teacher my school on a video communication program(e.g. Zoom,Skype)	15	21	27	30	24	30	33	20
Real-time lessons by a private tutor on a video communication program(e.g. Zoom,Skype)	23	22	28	29	25	30	24	20
Learning material my teachers sent via (SMS or (whatsapp)	24	17	29	30	27	30	20	23
Recorded lessons or other digital material provided by teachers from my school.	20	16	29	30	29	32	22	22
Recorded lessons or other digital material from other resource(e.g. Khan Academy)	32	25	26	29	25	27	17	20
Lessons broadcast over radio or television	42	29	26	28	18	24	14	19

Table 4.15 presents the results of a survey conducted in Palestine, examining the challenges faced by students in self-learning during school closures, categorized by region (West Bank and Gaza Strip). The findings illustrate that students encountered various obstacles in their self-learning journey. In terms of access to a digital device, a significant proportion of students in both regions reported difficulties, with slightly higher percentages in the West Bank. Internet access was also a common challenge, affecting a substantial number of students in both regions. Limited access to school supplies was more prevalent in the West Bank compared to the Gaza Strip. Finding a quiet place to study and managing time amidst household responsibilities were recurring challenges, with similar patterns observed in both regions. Motivation to engage in schoolwork was reported as a hurdle by a considerable percentage of students, while understanding school assignments posed difficulties for a significant proportion, particularly in the Gaza Strip. Finding someone to assist with schoolwork was a challenge faced by students in both regions, with slightly higher percentages in the West Bank. These findings shed light on the barriers that students encountered during self-learning and emphasize the need for targeted interventions to address these challenges, ensuring equitable access to resources and support for effective remote learning experiences in Palestine.

Table 4.15. Problem with self-learning during school closure in Palestine by region.

Problem	Never (%)		A few times (%)		About once or twice a week (%)		Every day or almost every day (%)	
	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip
Access to a digital device access when I needed.	37	31	40	36	16	20	7	12
Internet access.	23	22	44	41	21	23	12	13
Access to school supplies (e.g. Paper, pencil)	48	35	29	32	18	22	5	10
Finding a quiet place to study.	30	28	39	37	21	23	11	13
Finding time to study because I had household responsibilities.	36	28	34	36	21	23	8	12
Motivating myself to do schoolwork.	27	26	37	34	22	25	14	15
Understanding my school assignments.	23	22	41	38	25	25	10	15
Finding someone who could help me with my schoolwork.	35	27	33	32	20	24	12	16

Table 4.16 presents the levels of family support for self-learning in Palestine, categorized by region (West Bank and Gaza Strip). The percentages represent the distribution of responses for each type of learning support.

The results indicate that students in both regions received varying levels of family support for self-learning. In terms of assistance with schoolwork, 25% of students in the West Bank and 22% in the Gaza Strip reported never receiving help, while 40% in the West Bank and 39% in the Gaza Strip received this support a few times. Regarding being asked about their learning progress, 16% of students in the West Bank and 36% in the Gaza Strip reported never being asked, while 27% in the West Bank and 20% in the Gaza Strip were asked about once or twice a week.

When it comes to creating a learning schedule, 28% of students in the West Bank and 36% in the Gaza Strip reported never receiving help, while 24% in the West Bank and 12% in the Gaza Strip received this support about once or twice a week. In terms of accessing learning materials online, 20% of students in the West Bank and 18% in the Gaza Strip reported never receiving help, while 36% in the West Bank and 34% in the Gaza Strip received this support.

Regarding checking the completion of school assignments, 17% of students in the West Bank and 14% in the Gaza Strip reported never having their assignments checked, while 33% in the West Bank and 33% in the Gaza Strip had them checked about once or twice a week. Moreover, 20% of students in the West Bank and 22% in the Gaza Strip reported having their assignments checked every day or almost every day.

In terms of explaining new content, 20% of students in the West Bank and 19% in the Gaza Strip reported never receiving explanations, while 36% in the West Bank and 32% in the Gaza Strip received this support. Additionally, 21% of students in the West Bank and 19% in the Gaza Strip reported never receiving help in finding additional learning resources, while 34% in the West Bank and 32% in the Gaza Strip received this support.

Finally, when it comes to teaching additional topics not part of school assignments, 21% of students in the West Bank and 18% in the Gaza Strip reported never receiving such teachings, while 34% in the West Bank and 30% in the Gaza Strip received this support. These findings highlight the varying levels of family support for self-learning in Palestine and provide insights into the types of assistance students received in both regions.

Table 4.16. Family support for self-learning during school closure in Palestine by student region.

Types of learning support	Never (%)		A few times (%)		About once ot twice a week (%)		Every day or almost every day (%)	
	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip
Help you with your schoolwork	25	22	40	39	23	24	11	15
Ask you what you were learning	16	36	27	20	18	36	26	20
Help you create a learning schedule	28	36	24	12	21	37	27	16
Help you access learning materials online	20	18	36	34	28	30	16	18
Check whether you were completing your school assignments	17	14	33	33	30	30	20	22
Explain new content to you	20	19	36	32	27	30	17	19
Help you find additional learning resources	21	19	34	32	26	27	19	23
Teach you additional topics not part of your school assignments	21	18	34	30	26	31	19	21

Table 4.17 presents the results of the survey on the feelings about learning during school closure in Palestine, categorized by region (West Bank and Gaza Strip). The findings reveal that students in both regions had varying experiences and emotions during this period. A significant percentage of students reported feeling lonely, with 29% in the West Bank and 25% in the Gaza Strip strongly disagreed with this sentiment. However, a substantial number of students enjoyed learning by themselves, where 32% in the West Bank and 38% in the Gaza Strip agreed. The availability of teachers when needed was generally perceived positively, with 43% in the West Bank and 47% in the Gaza Strip agreeing that their teachers were accessible. On the other hand, feelings of anxiety about schoolwork were prevalent, as 43% in West Bank, 45% in Gaza Strips agreed with

this statement. Motivation to learn varied, with 34% in the West Bank and 44% in the Gaza Strip expressing agreement. Furthermore, a considerable proportion of students reported falling behind in their schoolwork, with 39% in the West Bank and 38% in the Gaza Strip agreeing. The survey also highlighted the importance of digital skills, as a majority of students agreed that they improved in using digital devices for learning purposes. Additionally, students recognized the preparedness of their teachers for remote instruction, and a significant number felt well-prepared to learn on their own. Lastly, many students expressed missing sports and other physical activities organized by their schools. Overall, the findings shed light on the diverse range of emotions and experiences students encountered during the school closure, emphasizing the need for comprehensive support systems and strategies to address the challenges associated with remote learning.

Table 4.17. Feeling about learning during school closure in Palestine by region

Indicator	Strongly Disagree (%)		Disagree (%)		Agree (%)		Strongly Agree (%)	
	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip
I felt lonely	29	25	36	34	26	29	9	12
I enjoyed learning by myself	22	19	34	30	32	38	12	12
My teachers were available when I needed them	15	13	32	30	43	47	10	11
I felt anxious about schoolwork	15	13	32	30	43	45	11	12
I was motivated to learn	17	12	33	28	34	44	10	16
I fell behind in my schoolwork	15	15	36	36	39	38	9	11
I improved my skills in using digital devices for learning purposes	12	11	24	22	50	49	14	18
My teachers were well-prepared to provide instruction remotely	12	9	24	23	49	49	15	19
I was well prepared to learn on my own	15	13	31	27	41	44	13	16
I missed sports and other physical activities organised by my school	18	12	29	24	39	45	14	19

Figure 4.7 illustrates the subjective impressions of learning during the school closure in Palestine, divided by region (Gaza Strip and West Bank). The responses indicate students' perceptions of the impact of the school building closure on their learning.

In the Gaza Strip, the majority of students (56%) felt that they learned less when their school building was closed. Similarly, in the West Bank, 55% of students shared this sentiment. A smaller percentage of students, 29% in the Gaza Strip and 27% in the West Bank, believed that they learned about as much as they would have if the school building had remained open. On the other hand, 16% of students in the Gaza Strip and 17% in the West Bank reported that they learned more during the school closure.

These findings indicate a general perception among students in both regions that the school building closure had a negative impact on their learning. The majority felt that they learned less, while a smaller proportion believed that their learning remained at a similar level. However, it is worth noting that a small percentage of students felt that they actually learned more during the school closure.

Figure 4.7. Subjective impression of learning during school closure in Palestine by region.
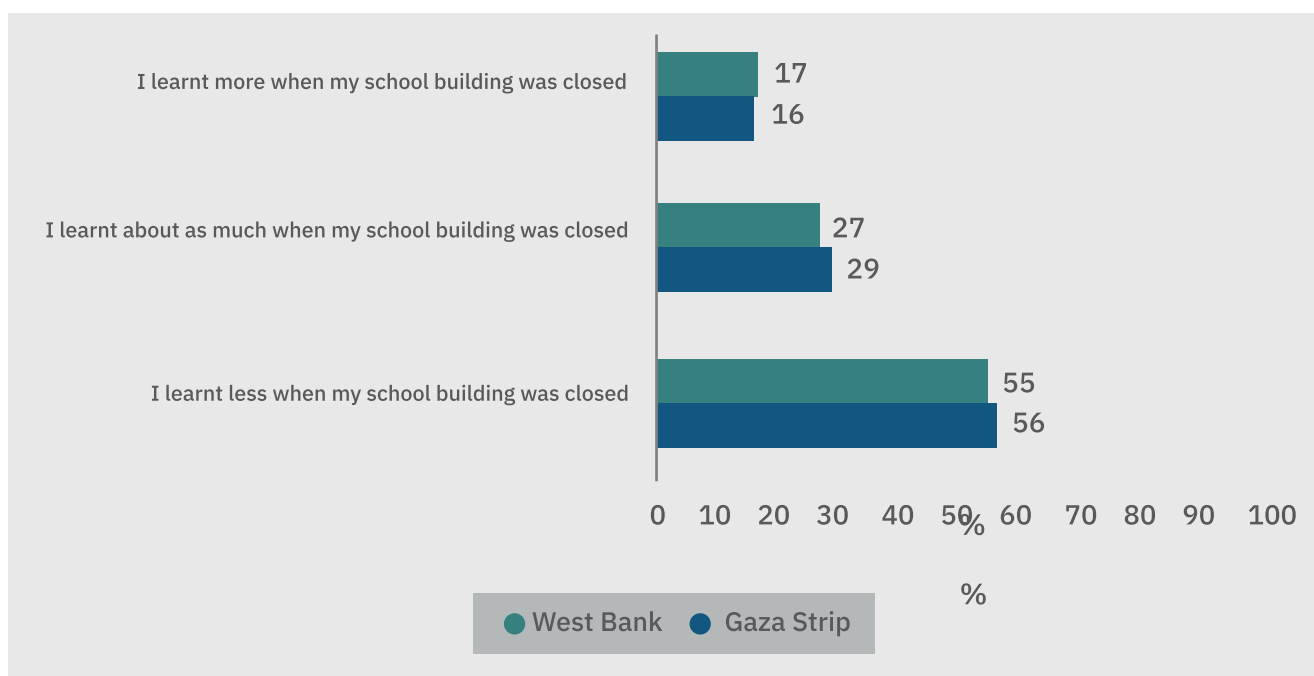
The results from Table 4.18 indicate the levels of confidence among students in self-directed learning in Palestine, categorized by region (West Bank and Gaza Strip). Across various indicators, students displayed varying degrees of confidence. When it came to using a learning management system or school learning platform, a significant proportion of students in both regions reported low confidence, with 23% in the West Bank and 26% in the Gaza Strip stating they were not at all confident. Similarly, students expressed relatively low confidence in using video communication programs, finding learning resources online independently, planning their schoolwork, and assessing their progress with learning. However, there were also notable percentages of students who felt confident or very confident in these areas. For instance, 33% in the West Bank and 32% in the Gaza Strip were confident in using a learning management system or school learning platform, and 17% in the West Bank and 13% in the Gaza Strip were very confident in using video communication programs. Overall, these findings highlight the importance of providing support and resources to enhance students' confidence and skills in self-directed learning, particularly in utilizing digital tools and managing their learning independently.

Table 4.18. Students' confidence in self-directed learning during school closure in Palestine by region.

Indicators	Not at all confident (%)		Not very Confident (%)		Confident (%)		Very Confident (%)	
	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip	West Bank	Gaza Strip
Using a learning management system or school learning platform	23	26	31	28	33	32	13	15
Using a video communication program (e.g Zoom, Skype, Google Meet, Microsoft Teams)	16	22	27	29	41	36	17	13
Finding learning resources online on my own	14	17	26	25	45	43	15	15
Planning when to do school work on my own	19	13	27	28	44	43	15	16
Motivating myself to do schoolwork	11	12	24	24	50	47	15	17
Focusing on schoolwork without reminders	10	11	29	25	47	47	15	17
Completing schoolwork independently	10	10	24	23	48	47	17	20
Assessing my progress with learning	11	11	23	22	48	47	18	20

Variation by supervising authority

The results from Table 4.19 provide insights into the school actions taken by supervising authorities in Palestine to sustain learning during the school closure, categorized by the type of school (public and private). The findings indicate that there were variations in the frequency of these actions between public and private schools. Private schools generally reported higher rates of sending learning materials, assigning tasks, offering live virtual classes, and asking for assignment submissions compared to public schools. Additionally, private schools seemed to provide more frequent check-ins with students to ensure completion of assignments and offer helpful tips for independent studying. These results suggest that private schools may have implemented more extensive measures to support students' learning during the school closure. However, further analysis and contextual understanding are necessary to fully comprehend the reasons behind these variations and their potential impact on student learning outcomes.

Table 4.19. School actions to sustain learning during school closure in Palestine by supervising authority.

Indicators (School Actions)	Never (%)		A few times (%)		About once or twice a week (%)		Every day or almost every day (%)	
	Public	Private	Public	Private	Public	Private	Public	Private
Send you learning materials to study on your own.	24	20	33	20	22	26	21	34
Send you assignments.	16	27	28	29	11	21	23	45
Uploaded materials on a learning management system or school learning platform.	24	15	29	24	26	25	21	37
Checked in with you to ensure you were completing your assignments.	18	10	30	29	28	28	24	33
Offered live virtual classes on video communication programs.	17	10	25	24	27	21	30	45
Asked you to submit completed school assignments.	14	10	23	19	30	26	33	46
Gave you helpful tips about how to study on your own.	16	17	28	32	30	19	26	32
Checked in with you to ask how you were feeling.	23	18	27	32	26	23	23	26

The results presented in Figure 4.8 illustrate the varying types of digital devices used by students in Palestine for schoolwork, categorized by the supervising authority (private and public schools). The data reveals disparities in device access between the two sectors. A considerable proportion of students in private schools (42%) reported using their own laptops, desktop computers, or tablets, whereas only 13% of students in public schools had access to such devices. On the other hand, a higher percentage of students in public schools (56%) utilized their own smartphones compared to those in private schools (48%). A small percentage of students in both sectors relied on shared devices within their families (5% in private schools, 14% in public schools) or devices provided by their schools (3% in private schools, 6% in public schools). However, a concerning finding is that a small fraction of students lacked any digital device for their schoolwork (2% in private schools, 11% in public schools). These findings highlight the existing digital divide and the need for concerted efforts to ensure equitable access to digital devices and bridge the technology gap for all students in Palestine, irrespective of their educational sector.

Figure 4.8. Type of digital devices used during school closure for schoolwork in Palestine by supervising authority.
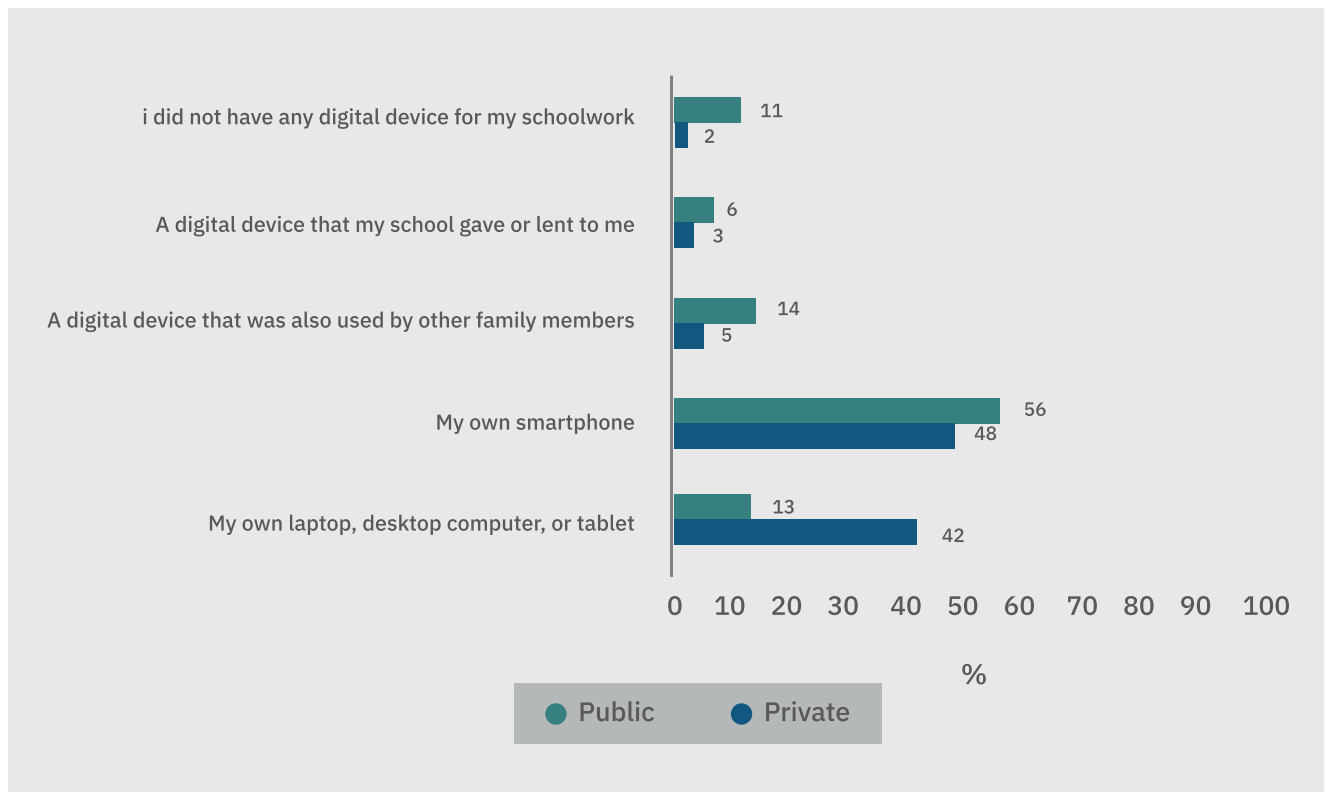
The results from Table 4.20 indicate the usage of different learning resources during the school closure in Palestine, categorized by the type of school (public and private). Public schools relied more on paper resources such as textbooks, workbooks, or worksheets, with 22% reporting never using them compared to 21% in private schools. Private schools, on the other hand, showed higher usage of digital resources like digital textbooks, workbooks, or worksheets, with 32% reporting using them every day or almost every day compared to 20% in public schools. Real-time lessons conducted by school teachers on video communication platforms were reported by 25% of students in public schools and 45% in private schools as happening every day or almost every day. Private schools also had higher usage of learning materials sent via SMS or WhatsApp and recorded lessons or digital materials from external resources. These findings suggest variations in the types of learning resources used between public and private schools during the school closure in Palestine.

Table 4.20. Type of learning resources used during school closure in Palestine by supervising authority.

Learning Resource	Never (%)		A few times (%)		About once ot twice a week (%)		Every day or almost every day (%)	
	Public	Private	Public	Private	Public	Private	Public	Private
Paper textbooks, workbooks, or worksheets.	22	21	34	30	26	19	19	30
Digital textbooks, workbooks, or worksheets	21	14	34	26	26	28	20	32
Real-time lessons by a teacher my school on a video communication program(e.g. Zoom,Skype,Google Meet,Microsoft Teams)	19	11	28	24	28	20	25	45
Real-time lessons by a private tutor on a video communication program(e.g. Zoom,Skype,Google Meet,Microsoft Teams)	22	23	28	27	28	19	21	31
Learning material my teachers sent via (SMS or (whatsapp)	20	23	30	31	29	24	21	22
Recorded lessons or other digital material provided by teachers from my school.	19	14	29	32	31	27	21	27
Recorded lessons or other digital material from other resource(e.g. Khan Academy ,Coursera)	28	29	27	34	26	20	19	17
Lessons broadcast over radio or television	35	49	27	25	22	15	17	11

The findings from Table 4.21 highlight the challenges faced by students in Palestine during self-learning, categorized by the type of school. Both public and private school students encountered difficulties in various areas. Access to digital devices and internet connectivity were reported as significant challenges, with a substantial percentage of students facing issues in both categories. Limited access to school supplies and finding a quiet study environment were also common obstacles. Furthermore, students expressed challenges related to managing household responsibilities, self-motivation, understanding assignments, and finding academic support. These findings underscore the need for comprehensive support systems to ensure equitable access to education during remote learning periods. Efforts should be made to address these challenges by providing necessary resources, fostering collaboration between schools and families, and implementing effective solutions to enhance self-learning experiences for all students in Palestine.

Table 4.21. Problems with self-learning in Palestine by supervising authority.

Problem	Never (%)		A few times (%)		About once or twice a week (%)		Every day or almost every day (%)	
	Public	Private	Public	Private	Public	Private	Public	Private
Access to a digital device access when I needed.	34	35	38	39	18	17	10	8
Internet access.	23	26	53	55	33	23	13	6
Access to school supplies (e.g. Paper, pencil)	41	53	31	25	20	17	8	4
Finding a quiet place to study.	29	31	38	39	22	21	12	9
Finding time to study because I had household responsibilities.	32	39	35	35	23	20	10	7
Motivating myself to do schoolwork.	26	34	36	33	24	20	14	13
Understanding my school assignments.	22	30	39	43	26	18	13	8
Finding someone who could help me with my schoolwork.	30	42	33	29	23	19	14	10

The data presented in Figure 4.22 provides insights into the level of family support for self-learning among students in Palestine, based on the supervising authority (public or private schools). The findings reveal both similarities and differences in the frequency of support across various types of learning assistance. Overall, a considerable portion of students reported receiving support from their families, but there were notable percentages who indicated never receiving assistance as well. For instance, a substantial number of students reported never receiving help with schoolwork, being asked about their learning, or assistance in creating a learning schedule. Similarly, a significant portion of students did not receive support in accessing learning materials online or checking the completion of school assignments. However, there were also encouraging findings, such as a relatively higher frequency of support in explaining new content, finding additional learning resources, and teaching additional topics. These findings emphasize the importance of promoting family involvement in supporting students' self-learning efforts, particularly in areas where assistance is less prevalent. By addressing the gaps and strengthening family support mechanisms, educators and policymakers can enhance the overall learning experience and outcomes for students in Palestine.

Figure 4.22. Family support for self-learning during school closure in Palestine by supervising authority.

Types of learning support	Never (%)		A few times (%)		About once ot twice a week (%)		Every day or almost every day (%)	
	Public	Private	Public	Private	Public	Private	Public	Private
Help you with your schoolwork	24	20	39	40	23	25	13	15
Ask you what you were learning	18	13	37	29	26	33	20	25
Help you create a learning schedule	24	30	37	33	25	21	14	16
Help you access learning materials online	19	22	35	34	29	22	17	21
Check whether you were completing your school assignments	15	14	33	30	30	37	21	20
Explain new content to you	19	18	34	32	29	31	18	19
Help you find additional learning resources	19	23	34	28	26	30	21	19
Teach you additional topics not part of your school assignments	19	21	32	30	28	27	20	22

In Table 4.23, which sheds light on the sentiments surrounding learning among students in Palestine during the period of school closures. The table is segmented by the supervising authority, distinguishing between public and private schools. The findings offer valuable insights into various indicators, including feelings of loneliness, enjoyment of self-learning, availability of teachers, anxiety about schoolwork, motivation to learn, falling behind in schoolwork, digital skills improvement, teacher preparedness for remote instruction, preparedness for self-learning, and the significance of physical activities. By analyzing these responses, we gain a comprehensive understanding of the diverse experiences and challenges faced by students during this unprecedented time. This information can guide policymakers and educators in crafting targeted interventions and support systems to ensure optimal learning outcomes and well-being for students in Palestine.

Table 4.23. Feeling about learning during school closure in Palestine by supervising authority.

Indicator	Strongly Disagree (%)		Disagree (%)		Agree (%)		Strongly Agree (%)	
	Public	Private	Public	Private	Public	Private	Public	Private
I felt lonely	27	37	35	30	28	24	11	9
I enjoyed learning by myself	20	24	33	25	35	38	12	13
My teachers were available when I needed them	14	10	32	22	44	56	10	12
I felt anxious about schoolwork	13	19	31	33	44	42	12	7
I was motivated to learn	15	20	31	29	42	39	13	12
I fell behind in my schoolwork	15	14	36	35	39	39	10	11
I improved my skills in using digital devices for learning purposes	11	11	24	18	50	47	15	24
My teachers were well-prepared to provide instruction remotely	11	11	24	19	49	51	17	20
I was well prepared to learn on my own	13	17	29	30	43	41	15	12
I missed sports and other physical activities organised by my school	14	24	27	26	42	38	16	12

The results presented in Figure 4.9 offer valuable insights into the subjective impressions of learning among students in Palestine during school closures, categorized by the supervising authority (private and public schools). The data reveals that a majority of students in both private (60%) and public (55%) schools felt that they learned less when their school building was closed. A smaller percentage of students in both sectors (25% in private schools, 28% in public schools) reported learning about as much during the closure. Interestingly, a minority of students in both private (15%) and public (17%) schools expressed that they actually learned more during the period of school closures. These findings highlight the diverse perceptions of students regarding the impact of school closures on their learning experiences. They underscore the need for targeted support and interventions to mitigate the potential negative effects of school closures on student learning outcomes, particularly for those who reported learning less. By addressing these challenges, educators and policymakers can strive to create effective strategies that promote continuous learning and well-being for students in Palestine during times of school closures.

Figure 4.9. Subjective impression of learning during school closure in Palestine by supervising authority.
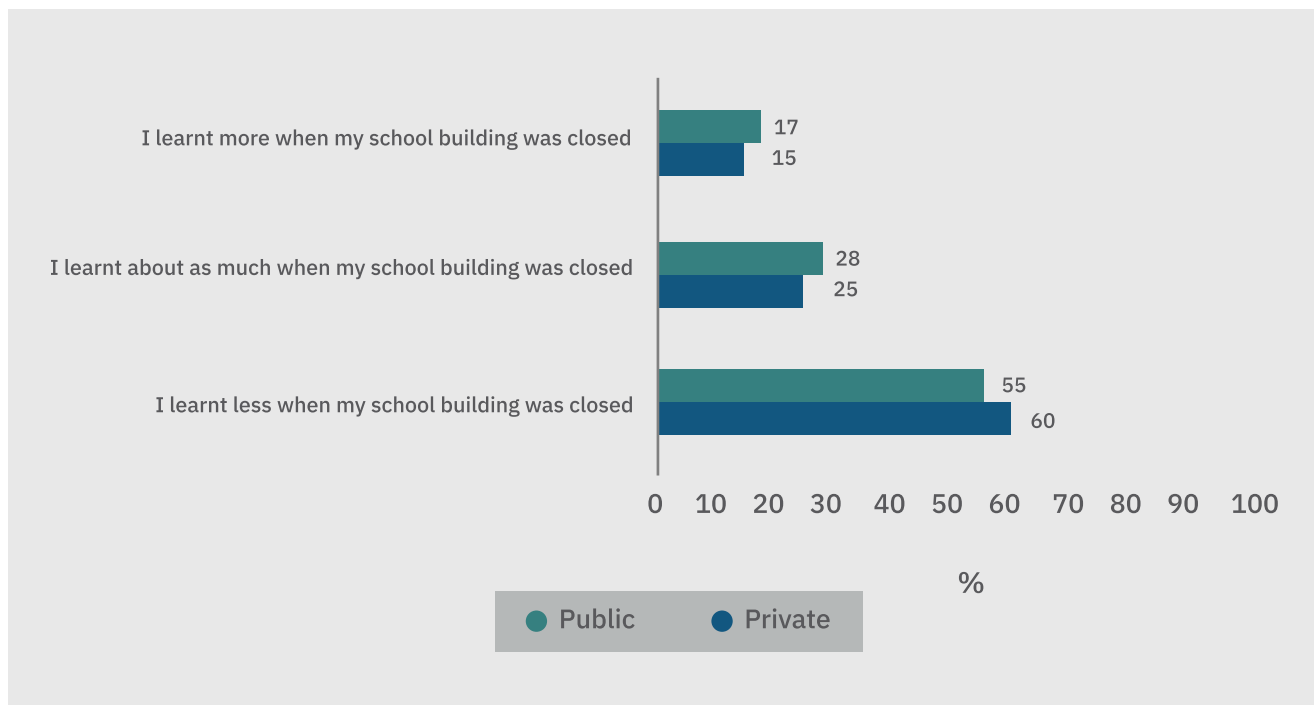
Table 4.24 presents the students' confidence in self-directed learning in Palestine, categorized by the supervising authority (public or private). The table displays the percentage distribution of responses indicating the level of confidence for various indicators of self-directed learning.

The results indicate that students in private schools generally expressed higher levels of confidence compared to students in public schools across all indicators. For example, when using a learning management system or school learning platform, 32% of students in public schools reported being confident, while 35% of students in private schools expressed confidence. Similarly, when using a video communication program, 38% of students in public schools felt confident, whereas 40% of students in private schools reported confidence. Moreover, the findings reveal that students in private schools exhibited higher levels of confidence in finding learning resources online, planning their schoolwork, motivating themselves, focusing on schoolwork without reminders, completing schoolwork independently, and assessing their progress with learning.

These results suggest that there may be differences in the resources, support, and teaching approaches provided by public and private schools, which could impact students' confidence in self-directed learning. Addressing these discrepancies and providing additional support to students in public schools may help enhance their confidence and proficiency in self-directed learning, ensuring a more equitable educational experience for all students in Palestine.

Table 4.24. Students' confidence in self-directed learning during school closure in Palestine by supervising authority.

Indicators	Not at all confident (%)		Not very Confident (%)		Confident (%)		Very Confident (%)	
	Public	Private	Public	Private	Public	Private	Public	Private
Using a learning management system or school learning platform.	25	17	30	25	32	35	13	23
Using a video communication program (e.g Zoom).	19	11	28	19	38	40	14	29
Finding learning resources online on my own.	16	9	26	21	44	48	15	22
Planning when to do school work on my own.	14	9	28	26	44	46	15	19
Motivating myself to do schoolwork.	12	7	24	29	49	44	16	20
Focusing on schoolwork without reminders.	11	4	27	29	47	47	15	21
Completing schoolwork independently.	10	10	24	21	48	50	18	19
Assessing my progress with learning.	11	10	23	19	47	53	19	18

How the length and learning during school closure are related to education outcomes

The last section of the chapter examines how the length of school closure and learning experiences during school closure are related to education outcomes. For education outcomes, student mathematics performance (see Chapter 2) is used as main indicators.

Relationship with mathematics performance

The results presented in the tables and the figures seen in this section show how the students' reports on their learning experiences during school closure are similar or different according to their performance level in the PISA 2022 mathematics assessment. The eight aspects of the students' learning experiences during school closure, which are described in the previous sections, are compared between students who attained at least the minimum proficiency level 2 of the PISA 2022 mathematics assessment (level 2-level 6) and students who did not reach the baseline level 2 (level 1 or below level 1). **Error! Reference source not found.** 4.10 presents the differences in the eight aspects of the students' learning experiences between the two group of students according to their performance level in mathematics. Figure 4.10 presents the subjective impression of learning during school closures in Palestine, categorized by students' proficiency levels in mathematics. The results indicate that the majority of students, regardless of proficiency levels, felt they learned less when their school buildings were closed. Among students below minimum proficiency levels, 52% reported learning less, while 30% felt they learned about as much, and 18% believed they learned more during the closure. Similarly, among students above minimum proficiency levels, 66% expressed learning less, 22% felt they learned about as much, and 11% believed they learned more during the closure. These findings highlight the negative impact of school closures on students' perceived learning outcomes, with a higher percentage of students above minimum proficiency levels reporting decreased learning. It is crucial to address the challenges of remote learning and implement effective strategies to ensure continued learning progress for all students, particularly those below minimum proficiency levels in mathematics, during periods of school closure.

Figure 4.10. Subjective impression of learning during school closure in Palestine according to their performance levels in mathematics.
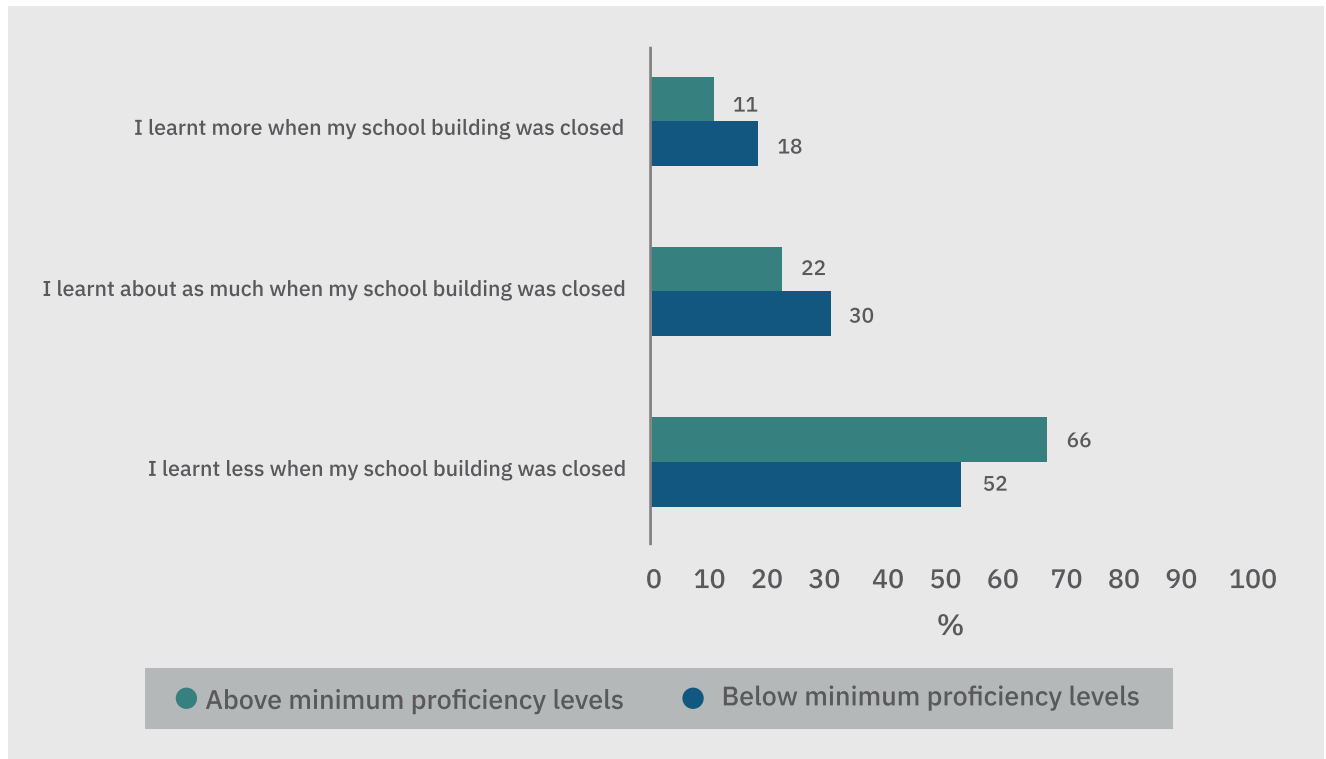
Table 4.25 presents the results of school actions taken to sustain learning during school closures, categorized by students' performance levels in mathematics. The findings reveal notable differences in the frequency of these actions between students below and above minimum proficiency levels. For students below minimum proficiency levels, 26% reported never receiving learning materials to study on their own, while 34% received them about once or twice a week. In contrast, 18% of students above minimum proficiency levels never received learning materials, and 24% received them about once or twice a week. Similarly, 18% of students below minimum proficiency levels reported never receiving assignments, while 28% received them about once or twice a week. Among students above minimum proficiency levels, 11% never received assignments, and 21% received them about once or twice a week. The pattern extends to other school actions such as uploading materials on learning platforms, checking in on assignment completion, offering live virtual classes, requesting assignment submissions, providing study tips, and checking in on students' well-being. These findings highlight the need for targeted support and increased implementation of school actions to bridge the learning gaps and ensure equitable educational opportunities for students below minimum proficiency levels in mathematics during school closures.

Table 4.25. School actions to sustain learning during school closure in Palestine according to performance levels in mathematics.

Indicators (School Actions)	Never (%)		A few times (%)		About once or twice a week (%)		Every day or almost every day (%)	
	Below[5]	Above[6]	Below	Above	Below	Above	Below	Above
Send you learning materials to study on your own.	26	18	34	24	21	27	19	31
Send you assignments.	18	11	28	21	27	30	27	38
Uploaded materials on a learning management system or school learning platform.	24	20	30	23	26	27	20	31
Checked in with you to ensure you were completing your assignments.	18	15	31	25	28	30	23	30
Offered live virtual classes on video communication programs.	18	13	27	20	28	23	26	45
Asked you to submit completed school assignments.	15	10	25	17	30	31	30	43
Gave you helpful tips about how to study on your own.	16	17	28	29	29	28	26	27
Checked in with you to ask how you were feeling.	22	26	27	30	27	24	24	20

Figure 4.11 presents an overview of the type of digital devices used for schoolwork based on students' performance levels in mathematics. The data reveals some interesting patterns. Students who utilize their own laptops, desktop computers, or tablets demonstrate a relatively higher level of proficiency, with 25% surpassing the minimum proficiency threshold. Similarly, when it comes to using their own smartphones, 60% of students perform above the minimum proficiency levels. However, it is worth noting that a significant portion of students using their own smartphones (54%) still struggle to meet the minimum proficiency levels. In contrast, students who share digital devices with their family members or rely on school-provided devices face more challenges, with only 10% and 2% respectively performing above the minimum proficiency levels. Furthermore, a considerable percentage of students (13%) who lack any digital device for their schoolwork are below the minimum proficiency levels, emphasizing the need for equitable access to technology. These findings underscore the importance of providing adequate resources and support to enhance digital proficiency among students, particularly for those who face barriers to accessing their own devices.

5 Below minimum proficiency level
6 Above minimum proficiency level

Figure 4.11. Type of digital device used for schoolwork during school closure in Palestine according to their performance levels in mathematics.
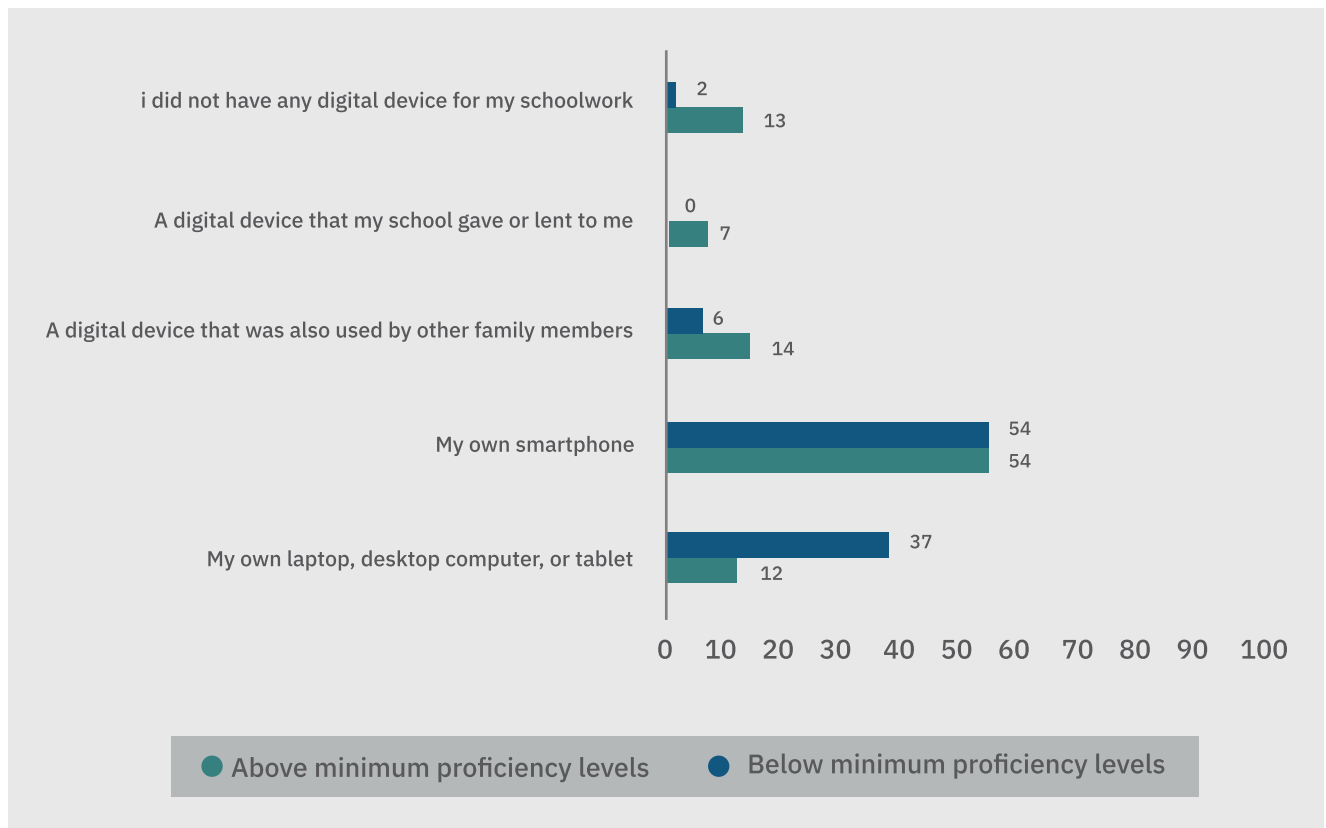
The results presented in Table 4.26 highlight the discrepancies in the utilization of learning resources during school closures, based on students' performance levels in mathematics. Students above minimum proficiency levels generally reported higher usage rates across various resources compared to those below minimum proficiency levels. Paper textbooks, workbooks, or worksheets were used less frequently by students above minimum proficiency levels, with 16% reporting never using them compared to 23% for students below minimum proficiency levels. Similarly, digital textbooks, workbooks, or worksheets were utilized more often by students above minimum proficiency levels, with 29% using them every day or almost every day compared to 18% for students below minimum proficiency levels. Real-time lessons by teachers from school on video communication platforms were attended more frequently by students above minimum proficiency levels, with 39% participating every day or almost every day compared to 23% for students below minimum proficiency levels. These findings underscore the need to ensure equal access and engagement with learning resources for all students, particularly those below minimum proficiency levels, to mitigate the impact of school closures on their educational progress in mathematics.

Table 4.26. Type of learning resources used during school closure in Palestine according to their performance levels in the mathematics.

Learning Resource	Never (%)		A few times (%)		About once ot twice a week (%)		Every day or almost every day (%)	
	Below	Above	Below	Above	Below	Above	Below	Above
Paper textbooks, workbooks, or worksheets.	23	16	35	31	25	26	17	26
Digital textbooks, workbooks, or worksheets.	22	16	35	28	25	27	18	29
Real-time lessons by a teacher my school on a video communication program(e.g. Zoom)	19	16	30	22	28	23	23	39
Real-time lessons by a private tutor on a video communication program(e.g. Zoom)	22	25	29	24	29	23	20	27
Learning material my teachers sent via (SMS or (whatsapp)	20	20	31	27	29	27	20	25
Recorded lessons or other digital material provided by teachers from my school.	18	17	31	26	30	33	21	24
Recorded lessons or other digital material from other resource(e.g. Khan Academy)	27	33	28	26	27	23	19	18
Lessons broadcast over radio or television.	32	47	28	24	22	17	18	11

The study examined the problems encountered during self-learning based on students' performance levels in mathematics, as presented in Table 4.27. The findings indicate varying frequencies of these problems between students below and above minimum proficiency levels. Access to a digital device when needed was reported as a problem by 33% of students below minimum proficiency levels and 39% of students above minimum proficiency levels. Similarly, internet access was a challenge for 23% of students below minimum proficiency levels and 23% of students above minimum proficiency levels. Access to school supplies was reported as a problem by 37% of students below minimum proficiency levels and 54% of students above minimum proficiency levels. Finding a quiet place to study was a difficulty for 27% of students below minimum proficiency levels and 34% of students above minimum proficiency levels. Students below minimum proficiency levels also faced challenges in finding time to study due to household responsibilities, with 29% encountering this problem compared to 41% of students above minimum proficiency levels. Motivating oneself to do schoolwork was reported as problematic by 26% of students below minimum proficiency levels and 30% of students above minimum proficiency levels. Understanding school assignments posed difficulties for 21% of students below minimum proficiency levels and 26% of students above minimum proficiency levels.

Finally, finding someone who could help with schoolwork was a problem for 28% of students below minimum proficiency levels and 41% of students above minimum proficiency levels. These findings underscore the importance of addressing these challenges to create an inclusive and supportive learning environment that caters to the needs of all students, regardless of their performance levels in mathematics.

Table 4.27. Problems with self-learning during school closure in Palestine according to their performance levels in mathematics.

Problem	Never (%)		A few times (%)		About once or twice a week (%)		Every day or almost every day (%)	
	Below	Above	Below	Above	Below	Above	Below	Above
Access to a digital device access when I needed.	33	39	38	40	19	15	10	7
Internet access.	23	23	41	47	22	21	14	9
Access to school supplies (e.g. Paper, pencil)	37	54	32	26	22	16	9	4
Finding a quiet place to study.	27	34	38	38	23	18	12	10
Finding time to study because I had household responsibilities	29	41	36	33	24	17	10	9
Problems with motivating myself to do schoolwork.	26	30	36	36	24	22	15	13
Understanding my school assignments.	21	26	38	44	26	22	14	8
Finding someone who could help me with my schoolwork.	28	41	33	33	24	16	15	11

The results presented in Table 4.28 demonstrate the variations in family support for self-learning based on students' performance levels in mathematics. Students above minimum proficiency levels generally reported receiving higher levels of support compared to those below minimum proficiency levels. For instance, when it comes to receiving help with schoolwork, 23% of students below minimum proficiency levels reported never receiving help, while the percentage decreased to 25% for students above minimum proficiency levels. Similarly, 19% of students below minimum proficiency levels reported never being asked about their learning, while it was 13% for students above minimum proficiency levels. Assistance with creating a learning schedule, accessing online learning materials, and checking completion of school assignments also showed higher rates among students above minimum proficiency levels. These findings highlight the importance of family involvement in supporting students' self-learning, particularly for students who are struggling academically. By providing consistent support in various aspects of learning, such as helping with assignments, explaining new content, and offering additional teaching, families can contribute to improving the educational outcomes of students across different performance levels in mathematics.

Table 4.28. Family support for self-learning during school closure in Palestine according to their performance levels in mathematics.

Types of learning support	Never (%)		A few times (%)		About once ot twice a week (%)		Every day or almost every day (%)	
	Below	Above	Below	Above	Below	Above	Below	Above
Help you with your schoolwork	23	25	39	40	24	23	14	11
Ask you what you were learning	19	13	37	33	26	29	18	25
Help you create a learning schedule	22	32	37	34	26	21	14	13
Help you access learning materials online	18	21	36	32	29	28	16	19
Check whether you were completing your school assignments	15	17	35	29	30	31	21	23
Explain new content to you	19	20	34	34	29	28	18	17
Help you find additional learning resources	19	23	34	31	26	27	21	19
Teach you additional topics not part of your school assignments	18	22	33	29	27	31	21	18

Table 4.29 investigated students' feelings about learning during school closure based on their performance levels in mathematics. The findings, presented in Table 4.29, highlight the differences in perceptions among students across various indicators. Regarding feelings of loneliness, a similar percentage of students below minimum proficiency levels (27%) and above minimum proficiency levels (28%) strongly disagreed that they felt lonely during school closure. Similarly, there was no significant difference in agreement levels for enjoying learning by oneself, with 34% of students below minimum proficiency levels and 36% of students above minimum proficiency levels indicating strong agreement. When it came to the availability of teachers, a higher percentage of students above minimum proficiency levels (54%) agreed that their teachers were available when needed, compared to students below minimum proficiency levels (42%). In terms of anxiety about schoolwork, students below minimum proficiency levels (48%) expressed slightly higher levels of agreement compared to students above minimum proficiency levels (43%). Motivation to learn exhibited a similar pattern, with 44% of students below minimum proficiency levels and 38% of students above minimum proficiency levels agreeing that they were motivated to learn. Falling behind in schoolwork was more prevalent among students above minimum proficiency levels (39%) compared to those below minimum proficiency levels (35%). Regarding the improvement of digital device skills for learning purposes, a higher percentage of students above minimum proficiency levels (54%) agreed, compared to students below minimum proficiency levels (48%). Furthermore, students above minimum proficiency levels (39%) were more likely to agree that their teachers were well-prepared for remote instruction compared to students below minimum proficiency levels (35%). The study also revealed that students below minimum proficiency levels (46%) felt slightly less prepared to learn on their own compared to students above minimum proficiency levels (41%). Finally, missing sports and other physical activities organized by the school was more prominent among students below minimum proficiency levels (42%) compared to those above minimum proficiency levels (41%). These findings underscore the importance of addressing the unique needs and challenges faced by students, regardless of their performance levels in mathematics, during school closures to ensure a positive and supportive learning environment.

Table 4.29. Feeling about learning during school closure in Palestine according to their performance levels in the mathematics.

Indicator	Strongly Disagree (%)		Disagree (%)		Agree (%)		Strongly Agree (%)	
	Below	Above	Below	Above	Below	Above	Below	Above
I felt lonely	27	28	34	36	27	28	11	9
I enjoyed learning by myself	21	19	32	34	34	36	13	11
My teachers were available when I needed them	15	10	32	26	42	54	11	10
I felt anxious about schoolwork	15	11	31	32	43	48	12	9
I was motivated to learn	14	17	29	34	44	38	13	11
I fell behind in my schoolwork	16	13	35	39	39	38	10	10
I improved my skills in using digital devices for learning purposes	12	9	24	20	48	54	15	17
My teachers were well-prepared to provide instruction remotely	16	13	35	39	39	38	10	10
I was well prepared to learn on my own	15	11	29	30	41	46	15	13
I missed sports and other physical activities organised by my school	15	16	26	29	42	41	17	13

Table 4.30 presents the results of students' confidence in self-directed learning based on their performance levels in mathematics. The results, presented in Table 4.30, indicate that students' confidence varies across different indicators. In terms of using a learning management system or school learning platform, a higher percentage of students above the minimum proficiency levels reported being confident (35%) compared to those below minimum proficiency levels (31%). Similarly, when using video communication programs, a larger proportion of students above the minimum proficiency levels expressed confidence (42%) compared to their counterparts below minimum proficiency levels (37%). When it came to finding learning resources online independently and planning school work, students above minimum proficiency levels demonstrated higher confidence levels (48% and 45%, respectively) compared to those below minimum proficiency levels (43% and 43%). Interestingly, motivating oneself to do schoolwork showed a similar pattern, with higher confidence reported by students above minimum proficiency levels (51%) compared to those below minimum proficiency levels (48%). Focusing on schoolwork without reminders, completing schoolwork independently, and assessing progress with learning also revealed higher confidence levels among students above minimum proficiency levels. These findings emphasize the importance of supporting students below minimum proficiency levels to enhance their confidence in self-directed learning and improve overall academic performance.

Table 4.30. Students' confidence in self-directed learning during school closure according to their performance levels in the mathematics.

Indicators	Not at all confident (%)		Not very Confident (%)		Confident (%)		Very Confident (%)	
	Below	Above	Below	Above	Below	Above	Below	Above
Using a learning management system or school learning platform.	27	19	29	29	31	35	13	18
Using a video communication program (e.g Zoom).	21	13	29	23	37	42	13	22
Finding learning resources online on my own.	17	10	27	23	43	48	14	19
Planning when to do school work on my own.	15	9	28	26	43	45	13	19
Motivating myself to do schoolwork.	12	9	25	22	48	51	16	17
Focusing on schoolwork without reminders.	12	6	27	28	46	49	15	17
Completing schoolwork independently.	11	7	24	21	47	50	17	22
Assessing my progress with learning.	12	9	23	20	46	51	19	20

CHAPTER 5

FOUNDATIONS FOR SUCCESS IN PALESTINE: PHYSICAL AND SOCIAL LEARNING ENVIRONMENT

This chapter examines various types of resources invested in education including financial, material, and human resources and key aspects of the learning environment in which 15-year-olds grow and learn Palestine and makes comparisons with other PISA participating countries and economies. The chapter describes how the presence of these foundations for educational success varies across schools in Palestine. The chapter concludes with the examination of the relationships between education resources, the learning environment and student performance

Resources invested in education

This section analyses the resources invested in education in Palestine. How much time, human, material, and instructional resources are invested in education in Palestine compared with other countries and economies? How are the resources allocated across schools? How do resources relate to student outcomes? Given the correlational nature of the analyses, it is impossible to draw causal inferences. However, the results of this section suggest avenues that policy makers in Palestine may explore to allocate resources more fairly and efficiently.

Human resources

Fully certified teachers

Teachers are an essential resource for learning; but not every teacher attribute is related to student outcomes in the same way. Previous studies have shown that teachers' knowledge of the subject they teach, and the quality of their instruction have a measurable impact on student performance. This relationship is stronger than the association between student performance and teachers' level of education, experience, qualifications, work status or salaries. The type and quality of the training teachers receive, and the requirements to enter and progress through the teaching profession, shape the quality of the teaching force. Attracting, developing, and retaining effective teachers are priorities for public policy.

PISA has been asking school principals how many of the teachers in their school were fully certified by an appropriate authority. The PISA 2018 results show that teacher certification is related to reading performance at the system level. In other words, education systems where more teachers were fully certified tended to perform higher scores in reading on average, even after accounting for per capita GDP, across OECD countries and across all countries. PISA 2022 results show that, on average across OECD countries, 83% of teachers working in schools attended by 15-year-olds were fully certified by the appropriate or local authority, in Palestine 5% of teachers were fully certified, from all teachers in Palestine the majority of teachers 93% had at least bachelor's degree, 13% had at least master degree and 1% had doctoral degree, on the other hand OECD Average teachers had mor qualification master degree or above (Table 5.1).

Table 5.1. Teachers Qualifications in Palestine & the OECD.

Educational Levels	Palestine (%)	OECD Average (%)
Bachelor's degree	93	78
Master's degree	13	44
Doctoral Degree	1	2

Teacher shortage

PISA 2022 asked school principals whether providing instruction at their school is hindered by a lack of teaching or support staff or by an inadequacy or poor qualifications of teaching or support staff. This information refers to both the availability and quantity of staff, and to the quality of available staff. All information was combined into a single standardised measure, the PISA index of shortage of education staff. Higher values in the index indicate more shortages of quality education staff in school. For interpretation purposes, it is important to keep in mind that the index measures the perception of school principals, rather than an objective measure of staff shortage. School principals in different countries may have different perceptions of what constitutes a shortage in teaching or support staff in their school.

The index of shortage of education staff in Palestine was 1.35 in Palestine, a value that indicates more shortages of education staff than in OECD countries (0.19), as perceived by school principals.

School principals were asked about lack of teaching staff in their schools, and their responses were in four categories (not at all, very little, to some extent, a lot). In Palestine, 35% of students attended schools for which the school principal reported that the school's capacity to provide instruction was hindered by a lack of teaching staff a lot while 13% for OECD countries, also 32% in Palestine and 34% in OECD Countries reported to some extent, a value that indicates more perceived lack of teaching staff (Figure 5.1).

Figure 5.1. Shortage of Teaching Staff in Palestine & the OECD.
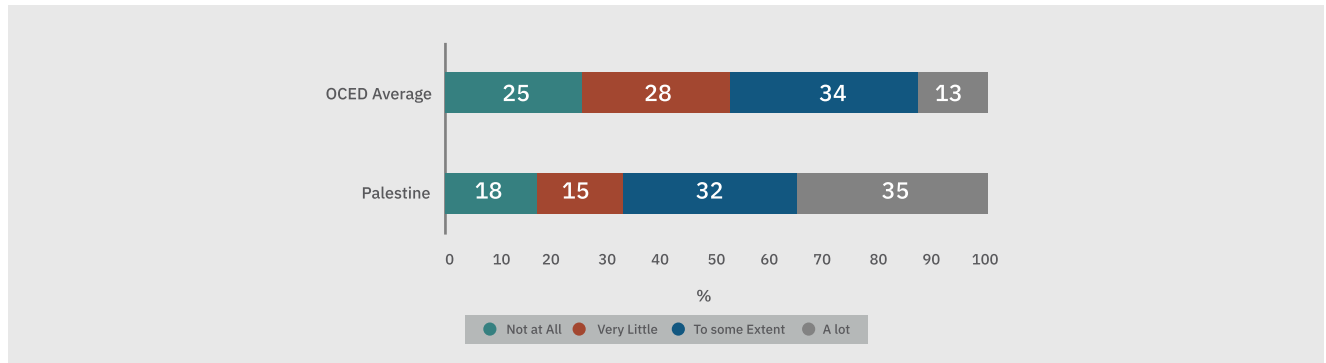
When the components of the index of shortage of education staff were examined separately, it became evident that in Palestine, a lack of education staff was more prevalent, according to school principals, than an inadequacy or poor qualifications of staff. Figure 5.2 shows that in Palestine, about 35% of students attended schools whose principal reported that a lack of teaching staff hinders learning a lot, whereas 27% of students were enrolled in schools where inadequate or poorly qualified teaching staff hinders learning to the same extent, according to school principal reports. Regarding assisting staff, 18% of students attended schools whose principal reported that a lack of assisting staff hinders learning a lot and 19% were in schools in which inadequate or poorly qualified assisting staff hinders learning to the same extent.

Figure 5.2: Shortage and Qualifications of Teaching and Assisting Staff in Palestine.
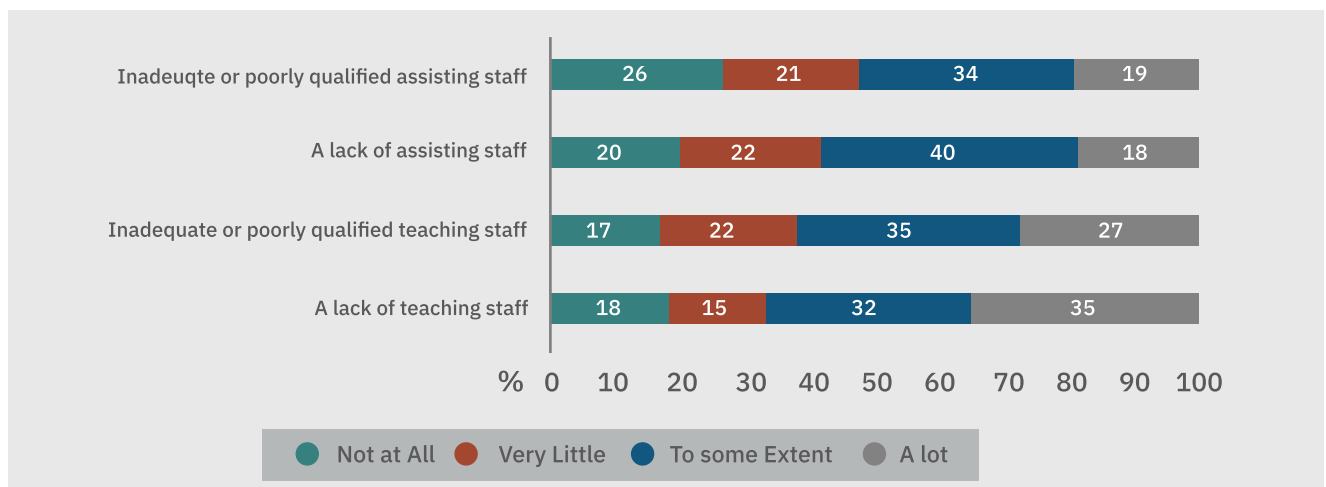
Teacher professional development

Together with autonomy and participation in peer networks, teacher professional development is one of the pillars of teacher professionalism. Professional development programmes aim to develop the skills, knowledge, and dispositions of individual teachers, but in addition they can enhance schools' capacity for organisational change and improvement. Research suggests that professional development is more effective when it focuses on student learning, actively engages teachers in designing instructional strategies, supports collaboration amongst peers, uses models of effective practice, and provides coaching, feedback, and enough time for teachers to implement and sustain changes.

In Palestine in 2022, the average 15-year-old student attended a school whose principal reported that 84% of teachers had participated in a programme of professional development in the three months prior to the PISA test. The share across the OECD countries was 87%. Teachers in Palestine participated in different in-house professional in-service training. In Palestine 60% of students attended schools that coordinated in-service training programs such as inviting specialists to conduct in-service training for teachers, organizing in-service workshops which deal with specific issues that the school faces, and organizing in-service workshops for specific groups of teachers (e.g. newly appointed teachers) less than OECD countries in which 80% of schools inviting specialists to conduct in-service training for teacher, while for organizing in-service workshops Palestine had higher percentages than OECD countries.

Human resources and student mathematics performance

As shown in Table 5.2, in Palestine, students who performed higher scores in mathematics attend schools that do not struggle with shortage of teachers and where teachers themselves are more often fully certified teachers and received professional development. The relationship between availability and quality of human resources and students' performance in mathematics persists and is positive. Students in schools which do not have any problems in staff provision have mathematics performance scores higher than the mathematics average for Palestine.

Table 5.2. Human Resources and Student Mathematics Performance in Palestine.

Human Resources	Not at All	Very Little	To Some Extent	A lot
A lack of teaching staff	387	361	370	360
Inadequate or poorly qualified teaching staff	362	375	365	362
A lack of assisting staff	369	361	370	360
Inadequate or poorly qualified assisting staff	362	374	366	361

Material resources

High-quality education requires the presence and condition of adequate physical infrastructure of a school and the availability and usage of didactic materials by teachers and students. These are collectively referred here as "material resources". Teachers need to access and use these resources, including textbooks, computers, library materials or laboratories, to plan and offer their lessons. Material resources support instruction that is up-to-date, and that is challenging and responsive to students' needs. This section begins by examining of the availability and distribution of physical infrastructure and educational materials. Following, the chapter presents a separate section on digital resources.

Physical infrastructure and educational material

Material resources need to be up-to-date and functioning to meet students' needs. For example, if textbooks are not updated to include recent advances in scientific knowledge or curricular reforms in learning standards. If computers' connection to the Internet is too slow or unstable, students and teachers cannot accomplish basic tasks or activities. To measure school principals' perceptions of potential factors hindering instruction at school, in PISA 2022 school principals were asked about their perceptions on a lack of educational material; on inadequate or poor-quality educational material; on a lack of physical infrastructure; and on inadequate or poor qquality physical infrastructure. Principals had to respond choosing between four response categories: "not at all", "very little", "to some extent", or "a lot" The index of educational material shortage was derived

from answers to these four questions. Positive values in the index mean that, as compared to the OECD average, in the country the principals viewed the amount or quality of the educational materials in their schools as an obstacle to providing instruction.

The index of shortage of educational material in Palestine was 1.14 while it was -0.17 for OECD countries, suggesting that school principals perceive greater shortage of material resources than on average in the group of OECD countries. Table 5.3 shows that in Palestine, 15% of students were in schools whose principal reported that the school's capacity to provide instruction is hindered by inadequate or poor-quality educational materials, less than 17% of students were in schools whose principal reported shortages of physical infrastructure, and less than 17% of students were in schools whose principal reported shortages of educational materials, while approximately half of students for all items in OECD countries,

Table 5.3 Physical Infrastructure and Educational Materials in Palestine & the OECD.

Item	Not at all (%)		Very little (%)		To some extent (%)		A lot (%)	
	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average
Inadequate or poor-quality educational material (e.g. textbooks)	15	47	21	31	33	16	30	5
A lack of educational material (e.g. textbooks)	17	47	19	29	26	19	38	10
A lack of physical infrastructure (e.g. building)	17	47	16	24	31	19	36	10
Inadequate or poor-quality physical infrastructure (e.g. building)	16	47	16	26	37	18	32	10

School principals were also asked about their perceptions on the degrees to which the following factors hinder their schools' capacity to provide instruction: a lack of digital resources such as computers, internet access, learning management systems or school learning platforms; and inadequate or poor-quality digital resources.

Figure 5.3 shows that in Palestine around 9% of students were in schools whose principal reported that the school's capacity to provide instruction is hindered by A lack of [digital resources] (e.g. desktop or laptop computers, internet access, learning management systems or school learning platforms) less than 17% of students were in schools whose principal reported shortages Inadequate or poor quality [digital resources] (e.g. desktop or laptop computers, internet access, learning management systems or school learning platforms).

Figure 5.3: Digital Resources (Infrastructure & Educational Materials) in Palestine.

	Not at All	Very Little	To some Extent	A lot
Inadequate or poor quality {digital resources} (e.g. desktop or laptop computers,..)	9	16	41	34
A lack of {digital resources} (e.g. desktop or laptop computers,..)	9	16	40	35
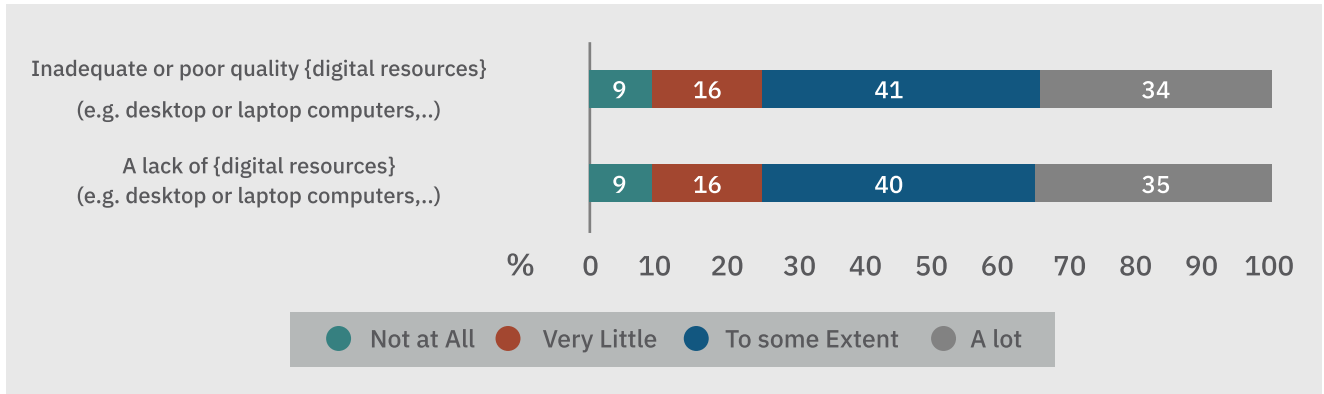
The availability and quality of instructional materials, in themselves, do not guarantee better learning. Schools and teachers must be able to incorporate these resources into teaching practice and daily lessons to improve teaching and learning results. This idea applies specifically to resources related to information and communication technology (ICT) in education. The rapid adoption of ICT technology by schools needs to be accompanied by the development of teachers' capacity to integrate digital devices in their practice.

In PISA 2022, school principals were asked to assess the following six statements about their schools' capacity to enhance learning and teaching using digital devices. Principals chose to answer, "strongly disagree", "disagree", "agree", or "strongly agree" for each of the following statements:

- Teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction.
- Teachers have sufficient time to prepare lessons integrating digital devices.
- Effective professional resources for teachers to learn how to use digital devices are available.
- An effective online learning support platform is available.
- Teachers are provided with incentives to integrate digital devices in their teaching.
- The school has sufficient qualified technical assistant staff.

The index of preparedness for digital learning was derived from answers to these six statements. Positive values of the index mean that principals viewed their preparedness for digital teaching as being in Palestine-0.22 less than the OECD average -0.02.

Figure 5.4 shows that the majority of school principals reported about the preparedness for digital learning in Palestine, 61% from them reported that teachers had sufficient time to prepare lessons integrating digital devices, 69% reported that an effective professional resources for teachers to learn how to use digital devices were available, 73% reported that there were an effective online learning support platform is available, 89% of them reported that teachers had the necessary technical and pedagogical skills to integrate digital devices in instruction, while fewer percentages for the other questions, 43% reported that teachers are provided with incentives to integrate digital devices in their teaching, 38% reported that the school has sufficient qualified technical assistant staff.

Figure 5.4. Preparedness for Digital Learning in Palestine.

	Strongly Disagree	Disagree	Agree	Strongly Agree
The school has sufficient qualified technical ssistant staff	21	36	38	5
Teachers are provided with incentives to integrate digital devices in their teaching	16	36	43	6
Teachers have the necessary technical and pedagogical skills to integrate digital devices	16	36	43	8
An effective online learning support platform is available	1	14	73	12
Effective professional resources for teachers to learn how to use digital devices are acailable	3	23	69	4
Teachers have sufficient time to prepare lessons integrating digital devices	5	31	61	3

Material resources and student mathematics performance

As shown in Table 5.4, in Palestine, students who performed higher scores in mathematics attend schools that equipping with educational, physical, and digital infrastructure. The relationship between availability of material resources and students' performance in mathematics persists and is positive. Students in schools which equipped with educational or physical and digital resources have mathematics performance scores higher than the mathematics average for Palestine.

Table 5.4. Material Resources and Student Mathematics Performance in Palestine.

Material Resources	Not at All	Very Little	To Some Extent	A lot
Inadequate or poor-quality educational material (e.g. textbooks)	369	371	365	361
A lack of educational material (e.g. textbooks)	374	367	369	359
A lack of physical infrastructure (e.g. building)	378	363	363	364
Inadequate or poor-quality physical infrastructure (e.g. building)	376	363	363	365
A lack of [digital resources] (e.g. desktop or laptop computers)	386	365	365	361
Inadequate or poor quality [digital resources] (e.g. desktop or laptop computers)	382	372	366	358

Time resources

Learning takes time. Thus, time is a key education resource to be used effectively in and outside of school. Educators must invest in and optimise the use of students' learning time to improve the quality and equity of education outcomes. However, the relationship between learning time and academic achievement is complex: additional learning time does not translate automatically into better outcomes.

This section examines two ways in which students spend time learning; in school, during regular school hours, and after school. Learning that takes place during regular school hours includes students' attendance to pre-primary education; the amount of learning time allocated for lessons in all subjects; and students' long-term absenteeism. Learning that takes place after regular school hours includes the amount of time invested for doing homework for all subjects.

Pre-primary education attendance

Evidence is growing about the importance of high-quality pre-primary. In parallel, over the past few decades, enrolment in pre-primary education has become more prevalent across countries around the world. Research suggests that a variety of outcomes can be boosted by high-quality pre-primary education, including children's cognitive development and well-being, later academic achievement, and even adult earnings. Attendance at pre-primary school has been shown to improve students' behaviour, attention, effort, and class participation in primary school. In addition, early education programmes are cost-effective interventions with substantial economic returns to investment.

The benefits of attendance at pre-primary education tend to be greater for socio-economically disadvantaged children. However, the benefits also depend on the quality of the early childhood education and care, as defined by positive staff-child interactions and more exposure to developmental activities, amongst other factors. Figure 5.6 shows that many students reported that they attend pre-primary education 35% for 3 years old and 36% for 5 years old (Figure 5.5).

Figure 5.5: Students Attend Pre-Primary Education in Palestine.

Learning time at school

Research on the relationship between learning time and student achievement offers mixed evidence. The relationship is hard to observe empirically because several confounding factors, including the quality of the curriculum, teachers' instructional practices, students' aptitudes and motivation to learn, and even countries' level of economic development, that can mediate or condition the effectiveness of learning time. Recent research findings show that additional learning time has positive but diminishing effects on student performance, and that the how much additional learning time benefits students depends on students' characteristics, including their level of performance and their socioeconomic status.

PISA measures learning time as the number of hours per week that students are required to attend regular school lessons. To create measures of learning time, PISA 2022 asked students to report the number of class periods that they are required to attend all the weekly class periods per week scheduled for all subjects. School principals were asked to report the average number of minutes per class period for the classes attended by the modal grade of 15-year-olds. The information from students and school principals were combined to compute learning time (in minutes) at school per week for all subjects. It is important to note that learning time examined here is theoretical learn time and does not account for students' lateness or for other sources of distractions. The results showed that number of class periods per week in mathematics was 6.26 in Palestine while it was 4.51 in OECD countries, the total number of [class periods] per week for all subjects, including mathematics was 20.5 in Palestine and 23.7 in OECD countries.

Absenteeism

Every school day, students may miss learning opportunities by skipping school or by arriving late for class. Doing so repeatedly has adverse effects on the individual students and on their learning environment in school. Students play truant for many reasons: because they are academically disengaged, or they do not feel they belong at school; because they failed to wake up or they are simply needed at home. Moreover, some victims of bullying avoid school because they are too afraid or embarrassed. Good academic performance and

positive relationships with peers and teachers seem critical for developing students' attachment to school and for feeding a desire to attend school every.

PISA 2022 asked students to report if they had missed school for more than three months in a row at ISCED 1[7], ISCED 2[8] and ISCED 3[9]; students had four response options: "No, never", "Yes, once" and "Yes, twice or more". Table 5.5 shows that 9% of students in Palestine reported that they had missed school for more than three months at least once at ISCED 2 and 8% in ISCED 3, while across the OECD countries the corresponding percentages were 4% and 2%, respectively.

Table 5.5: Long-term absenteeism in Palestine & OECD.

Have school skipping from school you ever missed school for more than three months in a row	No, never (%)		Yes, once (%)		Yes, twice or more (%)	
	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average
At [ISCED 2] grades 4-9	91	96	6	3	3	1
At [ISCED 3] grades 10-12	92	98	5	1	3	1

Table 5.6 shows that most of students reported about student skipping from schools and arrived late, in Palestine, 62% from them reported that teachers had sufficient time to prepare lessons integrating digital devices, 78% reported they never skipped some classes, 84% reported that they never skipped whole school day.

Table 5.6: Skipping from schools and arriving late to schools in Palestine.

Item	Never	One or two times	Three or four times	Five or more times
Skipped a whole school day	84	11	2	2
Skipped some classes	78	15	4	3
Arrived late for school	39	37	12	12

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7 ISCED 1: Primary Education (Grads 1–4).
8 ISCED 2: Lower Secondary Education (Grads 5–9).
9 ISCED 3: Upper Secondary Education (Grads 10-12).

Out-of-school learning time

PISA 2022 asked students to report the approximate time that in a typical school week they spend on homework in all subjects. Students reported with the six response options: up to 30 minutes a day; more than 30 minutes and up to 1 hour a day; more than 1 hour and up to 2 hours a day; more than 2 hours and up to 3 hours a day; more than 3 hours and up to 4 hours a day, and more than 4 hours a day.

In Palestine, 49%, 48%, 43%, 21% of students reported that they typically spend 30 minutes or less for doing homework per day in Math, language of instruction, science & all subjects.

Table 5.7 shows that 62% from 15 years old students in Palestine had study help from their colleagues' peer-to-peer tutoring, while in OECD countries teaching staff help them in homework.

Table 5.7: Study Help in Palestine & OECD.

Study helps for 15-year-olds Student	Palestine (%)	OECD Average (%)
Peer-to-peer tutoring	62	49
Room(s) where the students can do their homework	7	73
Staff help with homework	25	63

According to school principals' schools offering additional mathematics lessons 40% for Palestine and 58% for OECD countries, both Palestine and OECD countries had large percentages for remedial lessons 93%, but in Palestine 83% had enrichment lessons but in Palestine 73% of these lessons without differentiation depending on the prior achievement level of the students and 41% for OECD countries (Table 5.8).

Table 5.8: Math Lessons Offered for Students in Palestine & OECD.

Math Lessons Offered	Palestine (%)	OECD Average (%)
Does your school offer additional math lessons apart from math lessons offered during the usual school hours?	40	58
Enrichment	83	60
Remedial	93	93
Without differentiation depending on the prior achievement level of the students	73	41

Table 5.9 shows that in Palestine, 30% of 15 years old student work for pay, and 84% of them worked in the household or take care of family members, which is higher than OECD countries.

Table 5.9: Spent Time After School in Palestine.

Spent Time After School	0 days	1-2 days	3-4 days	5 or more days
Eat dinner.	15	15	16	54
Study for school or homework.	2	4	25	56
Work in the household or take care of family members.	16	30	18	46
Work for pay.	70	10	8	12
Exercise or practice a sport.	48	18	17	17

Time resources and student mathematics performance

As shown in Table 5.10, in Palestine, students who performed higher scores in mathematics with their truancy and. The relationship between low percentages of truancy and tardiness and students' performance in mathematics persists and is positive. Students with lower percentages in skipping from school's whole days or some classes or arrived later to schools have mathematics performance scores higher than the mathematics average for Palestine.

Table 5.10. Time Resources and Student Mathematics Performance in Palestine.

Time Resources	Never	One or two times	Three or four times	Five or more times
Skipped a whole school day	371	369	364	364
Skipped some classes	373	360	342	340
Arrived late for school	371	366	352	326

School Climate

A positive school climate is one of those things that is difficult to define and measure, but everyone recognises it when they see it. Visitors to a school, including parents and education inspectors, can identify a positive school atmosphere "within minutes". School climate has been described as the "quality and character of school life, the "the heart and soul of the school" and "the quality of relationships among students, teachers and school staff". School climate can be safe or unsafe, cohesive or divisive, collaborative or competitive. Above all, it is typically perceived as either positive or negative. In a positive school climate student feel physically and emotionally safe; teachers are supportive, enthusiastic, and responsive; parents participate in school activities voluntarily; the school community is built around healthy, respectful and co-operative relationships; and everyone looks after the school premises and works together to develop a constructive school spirit.

A positive school climate, for instance, can promote students' academic achievement, well-being and self-esteem, and some of these effects persist for years. A positive climate can even mitigate the pervasive and strong link between socio-economic status and academic achievement. Schools with safe, respectful and caring learning environments also protect students from engaging in maladaptive behaviours, such as truancy, smoking, drinking, using drugs, and other deviant and risky behaviours. Teachers too can benefit

from a positive school climate. For instance, teachers in disciplined and supportive schools report higher job satisfaction and less burnout In other words, children are more likely to reach their social, emotional and academic potential in a safe, supportive and collaborative school environment.

PISA 2022 questionnaires cover several dimensions of school climate. This section focuses on the following three indicators: student-related factors affecting school climate; teacher-related factors affecting school climate; and negative school climate.

Student-related factors affecting school climate

School principals were asked to describe the extent to which the following hinder student learning in their schools: Student truancy; students skipping classes; students intimidating or bullying other students; and Students not being attentive. Principals' responses on a scale ranging from "not at all", "very little", "to some extent", to "a lot" were used to construct the index of student-related factors affecting school climate. Higher values in the index indicate principals' perception of these factors affecting on school climate.

Table 5.11 shows that in Palestine school principals reported that student-related factors are affecting more on school climate than OECD countries 0.59 versus 0.03, which was noticed in all factor's truancy, skipping classes, lacking respect for teachers, intimidating or bullying other students and not being attentive.

Table 5.11. Student-Related Factors Affecting School Climate in Palestine & OECD.

Student-Related Factors	Not at all (%)		Very little (%)		To some extent (%)		A lot (%)	
	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average
Student truancy	5	15	25	44	34	32	36	9
Students skipping classes	27	17	25	47	28	29	21	7
Students lacking respect for teachers	16	21	33	55	24	21	27	3
Students intimidating or bullying other students	29	29	38	58	19	11	15	1
Students not being attentive	4	5	20	34	44	51	32	10

Teacher-related factors affecting school climate

School principals were asked to describe the extent to which the following hinder student learning in their schools: teachers not meeting individual students' needs; teacher absenteeism; staff resisting change; teachers being too strict with students; and teachers not being well prepared for classes. Principals' responses, from "not at all", "very little", "to some extent", to "a lot", were used to construct the index of teacher -related factors affecting school climate. Higher values in the index indicate principals' perception of these factors affecting on school climate.

Table 5.12 shows that in Palestine school principals reported that teacher-related factors are affecting more on school climate than OECD countries 0.88. versus 0.02, which was noticed in all factors, not meeting individual students' needs, resisting change, being too strict with students and not being well prepared for classes.

Table 5.12: Teacher-Related Factors Affecting School Climate in Palestine & OECD.

Teacher-Related Factors	Not at all (%)		Very little (%)		To some extent (%)		A lot (%)	
	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average
Teachers not meeting individual students' needs	15	21	36	54	39	24	11	2
Teacher absenteeism	13	31	34	45	26	21	28	4
Staff resisting change	19	27	30	46	35	23	17	42
Teachers being too strict with students	18	35	43	53	32	10	8	1
Teachers not being well prepared for classes	22	38	32	52	22	9	23	2

Negative school climate

School principals were asked to describe the extent to which the following behaviours a problem in their schools: "Profanity"; "Vandalism"; "Theft"; "Intimidation or verbal abuse among students"; "Physical injury caused by students to other students"; and "Intimidation or verbal abuse of teachers or non-teaching staff." Principals' responses ranging from "not at all", "small extent", "moderate extent", to "large extent" were used to construct the index of negative school climate. Higher values in the index indicate principals' perception of these behaviours being problems in their schools to a larger extent.

School principals in Palestine reported that these behaviours factors are problems in their schools to a larger extent than OECD countries, in Palestine, 0.43 versus for 0.09 for OECD countries. Table 5.13 shows that in Palestine the factors Profanity, and Intimidation or verbal abuse among students (including texting, emailing, etc.) affect school climate negatively more than the other factors.

Table 5.13: Negative School Climate in Palestine & OECD.

Extent a problem in your school	Not at all (%)		Small extent (%)		Moderate extent (%)		Large extent (%)	
	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average
Profanity	21	21	44	48	22	23	13	68
Vandalism	27	36	38	49	14	11	21	4
Theft	45	53	32	41	9	3	15	2
Intimidation or verbal abuse among students (including texting, emailing, etc.)	25	18	43	57	18	21	15	5
Physical injury caused by students to other students	43	51	36	43	9	3	13	2
Intimidation or verbal abuse of teachers or non-teaching staff (including texting, emailing, etc.)	49	58	28	36	9	4	14	3

Table 5.14 shows Percentages of Family / Parents Communicate with Their Children in Palestine & OECD Average, it noticed that parents / family in Palestine communicate with students less than parents/family in OECD countries in all factors.

Table 5.14: Family / Parents Communicate with Their Children in Palestine & OECD.

How often parents/ family member	Never or almost never (%)		About once or twice a year (%)		About once or twice a month (%)		About once or twice a week (%)		Every day or almost every day (%)	
	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average
Discuss how well you are doing at school	16	8	14	7	20	19	24	31	26	35
Eat [the main meal] with you.	10	5	11	3	13	7	16	18	50	66
Spend time just talking with you	12	6	12	5	17	11	24	24	35	54
: Talk to you about the importance of [completing ISCED 3].	11	10	13	12	20	26	25	25	31	26
Talk to you about any problems you might have at school	13	13	14	9	20	21	25	27	29	30
Ask you about how well you are getting along with other students at school	12	8	10	6	22	16	27	23	29	42
Encourage you to get good [marks	8	7	11	6	16	17	23	28	42	42
Take an interest in what you are learning at school	10	9	10	7	17	18	25	29	38	38
Talk to you about your future education	10	5	12	9	18	26	25	29	36	31
Ask you what you did in school that day	13	7	9	4	17	11	26	21	37	57

Table 5.15 shows Percentages of quality of mathematics Instruction and how often students affect these instructions, it noticed that students in Palestine affect negatively more than students in OECD countries in all factors except the factor that the teacher had to wait a long time for students to quiet down which had a high percentage for OECD countries, students in Palestine had a higher percentage than OECD in most of statements.

Table 5.15: Quality of Mathematics Instruction by Students in Palestine & OECD.

Quality of Mathematics Instruction / Students	Every lesson (%)		Most lessons (%)		Some lessons (%)		Never or almost never (%)	
	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average
Students do not listen to what the teacher said	17	10	22	21	36	48	26	21
There is noise and disorder	19	11	23	20	36	43	27	26
The teacher has to wait a long time for students to quiet down	17	39	23	32	33	21	27	7
Students cannot work well	13	7	24	16	35	42	28	35
Students do not start working for a long time after the lesson begins	16	8	24	16	23	39	27	36
Students get distracted by using [digital resources] (e.g. smartphones)	12	10	15	16	18	34	56	40
Students get distracted by other students who are using [digital resources] (e.g. smartphones)	12	12	15	20	22	35	52	34

Table 5.16 shows percentages of quality of mathematics Instruction and how often teachers affect these instructions, it noticed that teachers in Palestine affect positively more than teachers in OECD countries in all factors, teachers in Palestine had a higher percentage than OECD in all statements for the choice (every lesson) while OECD averages were higher the Palestine in the other choices.

Table 5.16: Quality of Mathematics Instruction in Palestine & OECD.

Quality of Mathematics Instruction / Teachers	Every lesson (%)		Most lessons (%)		Some lessons (%)		Never or almost never (%)	
	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average	Palestine	OECD Average
The teacher shows an interest in every student's learning	51	31	21	32	19	26	9	11
The teacher gives extra help when students need it	49	38	25	32	19	22	7	8
The teacher helps students with their learning	53	39	21	32	19	21	7	7
The teacher continues teaching until the students understand	54	34	19	29	17	25	3	12

Figure 5.6 shows percentages of students rating quality of mathematics instruction in Palestine, good quality of instruction with a higher mathematics instruction possible for possibles, 54% of them in possibles 7 and above, 27% for (4-6) and 19% for (1-3).

Figure 5.6. Quality of Mathematics Instruction in Palestine.
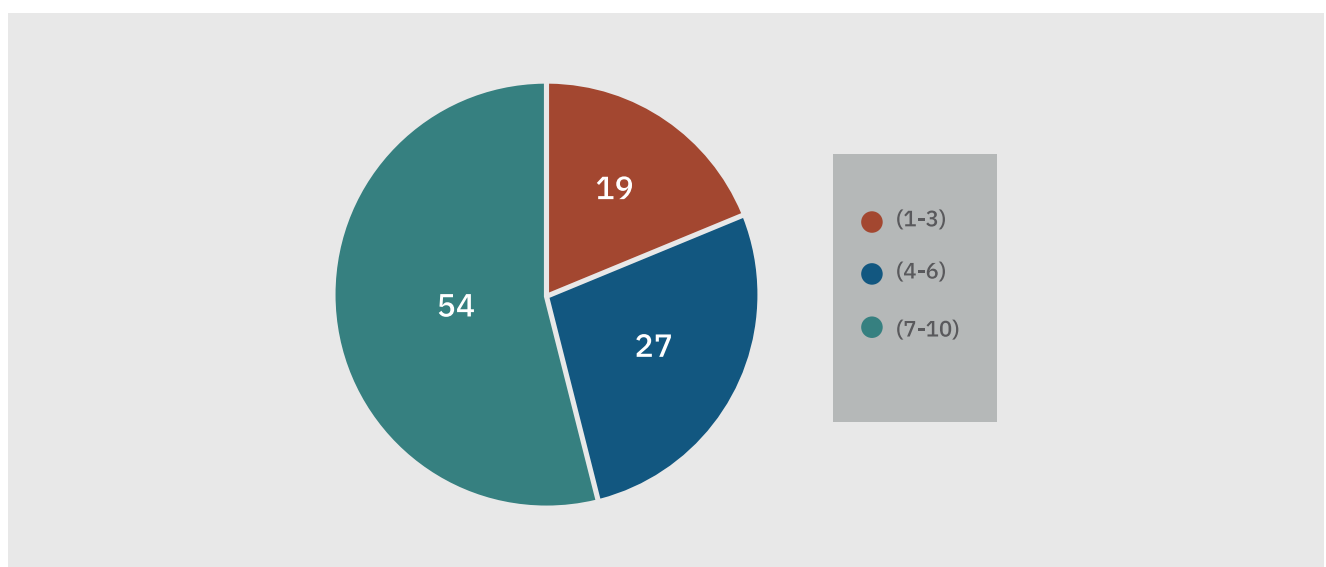
School climate and student mathematics performance

As shown in Table 5.17, in Palestine, students who performed higher scores in mathematics attend schools that don't struggle with negative school climate or affects negatively by students and teachers related factors. The relationship between the effect of school climate and students' performance in mathematics persists and is negative. Students in schools which don't have any problem in school climate have mathematics performance scores higher than the mathematics average for Palestine.

Table 5.17. School Climate and Student Mathematics Performance in Palestine.

School Climate	Not at All	Very Little	To Some Extent	A lot
Student truancy	385	371	378	358
Students skipping classes	380	364	358	361
Students lacking respect for teachers	377	368	365	357
Students intimidating or bullying other students	369	367	363	359
Students not being attentive	369	378	363	361
Teachers not meeting individual students' needs	376	364	366	355
Teacher absenteeism	377	364	366	363
Staff resisting change	374	366	365	357
Teachers being too strict with students	374	364	366	355
Teachers not being well prepared for classes	369	370	363	360
Profanity	377	367	353	364
Vandalism	376	369	350	359
Theft	373	364	346.	356
Intimidation or verbal abuse among students (including texting, emailing, etc.)	374	369	356	356
Physical injury caused by students to other students	369	367	354	359
Intimidation or verbal abuse of teachers or non-teaching staff (including texting, emailing, etc.)	370	365	357	361

CHAPTER 6
LOOKING FORWARD: POLICY OPTIONS FOR PALESTINE

This chapter discusses key findings of PISA 2022 for Palestine and the policy implications arising from these. It then presents policy options that can have both short-and-long-term impacts on education in Palestine. This chapter discusses what the disparities in student performance, attitudes towards school and learning and resources invested in schools imply for education policy and practice. The chapter expands on the findings on school closure and learning during the global pandemic and introduces ideas and strategies for future scenarios.

Summary of findings for PISA 2022

What students know and can do in Mathematics

In Palestine, 20% of students attained at least Level 2 proficiency in mathematics, significantly less than an average across OECD countries (OECD average: 69%). At a minimum, these students can interpret and recognize, without direct instructions, how a simple situation can be represented mathematically (e.g. comparing the total distance across two alternative routes or converting prices into a different currency). Almost no students in Palestine were top performers in mathematics, meaning that they attained Level 5 or 6 in the PISA mathematics test (OECD average: 9%).

What students know and can do in Reading

Some 23% of students in Palestine attained Level 2 or higher in reading (OECD average: 74%). At a minimum, these students can identify the main idea in a text of moderate length, find information based on explicit, though sometimes complex criteria, and can reflect on the purpose and form of texts when explicitly directed to do so.

In Palestine, almost no students scored at Level 5 or higher in reading (OECD average: 7%). These students can comprehend lengthy texts, deal with concepts that are abstract or counterintuitive, and establish distinctions between fact and opinion, based on implicit cues pertaining to the content or source of the information.

What students know and can do in Science

Some 28% of students in Palestine attained Level 2 or higher in science (OECD average: 76%). At a minimum, these students can recognize the correct explanation for familiar scientific phenomena and can use such knowledge to identify, in simple cases, whether a conclusion is valid based on the data provided.

In Palestine, almost no students were top performers in science, meaning that they were proficient at Level 5 or 6 (OECD average: 7%). These students can creatively and autonomously apply their knowledge of and about science to a wide variety of situations, including unfamiliar ones.

Students' well-being, attitudes, and aspirations

The PISA index of economic, social and cultural status is computed in such a way that all students taking the PISA test, regardless of the country where they live, can be placed on the same socio-economic scale. This means that it is possible to use this index to compare the performance of students of similar socio-economic background in different countries. In Palestine, 27% of students (the largest share) were in the 2nd international quintile of the socio-economic scale, meaning that they were neither among the most disadvantaged, nor among the most advantaged students who took the PISA test in 2022. Their average score in mathematics was 359 score points.

The PISA index of economic, social and cultural status can also be used to order students from the most disadvantaged to the most advantaged within each country and economy, and to create four groups of students of equal size (each comprising 25% of the population of 15-year-old students in each country/

economy). In Palestine socio-economically advantaged students (the top 25% in terms of socio-economic status) outperformed disadvantaged students (the bottom 25%) by 50 score points in mathematics. This is smaller than the average difference between the two groups (93 score points) across OECD countries. Socio-economic status was a predictor of performance in mathematics in all PISA participating countries and economies. It accounted for 7% of the variation in mathematics performance in PISA 2022 in Palestine (compared to 15% on average across OECD countries).

Some 12% of disadvantaged students in Palestine were able to score in the top quarter of mathematics performance. These students can be considered academically resilient because, despite their socio-economic disadvantage, they have attained educational excellence by comparison with students in their own country. On average across OECD countries, 10% of disadvantaged students scored in the top quarter of mathematics performance in their own countries.

Gender differences in performance

Girls outperformed boys in mathematics by 16 score points, in reading by 49 score points, and in science by 30 score points in Palestine. Globally, in mathematics, boys outperformed girls in 40 countries and economies, girls outperformed boys in another 17 countries or economies, and no significant difference was found in the remaining 24. In reading, girls, on average, scored above boys in all but two countries and economies that participated in PISA 2022 (79 out of 81).

In Palestine, the share of low performers is larger among boys (83%) than among girls (77%) in mathematics; in reading, too, the share is larger among boys (69% of girls and 87% of boys scored below Level 2 in reading)

Foundations for success.

Resources invested in education.

Expenditure on education is related to student performance only to a certain extent. Among the countries/economies whose cumulative expenditure per student, over all primary and secondary school years between the ages of 6 and 15, was under USD 75 000 (PPP) in 2019, higher expenditure on education was associated with higher scores in the PISA mathematics test. In Palestine, the cumulative expenditure per student, over ten years of age between 6 and 15, was equivalent to about USD 30 900 (PPP).

In 2022, 67% of students in Palestine were in schools whose principal reported that the school's capacity to provide instruction is hindered by a lack of teaching staff (and 62%, by inadequate or poorly qualified teaching staff). In most countries/economies, students attending schools whose principal reported shortages of teaching staff scored lower in mathematics than students in schools whose principal reported fewer or no shortages of teaching staff.

School autonomy

In Palestine, 1% of students attended a school where principals had the main responsibility for hiring teachers (OECD average: 60%), and 2% were enrolled in a school where teachers had the main responsibility for choosing which learning materials are used (OECD average: 76%). Many high-performing school systems tend to entrust principals and teachers with these responsibilities.

Students' sense of belonging at school and satisfaction with life

In 2022, 78% of students in Palestine reported that they make friends easily at school (OECD average: 76%) and 78% felt that they belong at school (OECD average: 75%). Meanwhile, 20% reported feeling lonely at school, and 28% like an outsider or left out of things at school (OECD average: 16% and 17%).

Students' satisfaction with life, more generally, declined in many countries and economies over recent years.

In 2022, 19% of students in Palestine reported that they were not satisfied with their lives: they rated their satisfaction with life between 0 and 4 on a scale ranging from 0 to 10.

Support and discipline in mathematics lessons.

In Palestine, 73% of students reported that, in most mathematics lessons, the teacher shows an interest in every student's learning (OECD average: 63%), and 75% that the teacher gives extra help when students need it (OECD average: 70%).

Many students study mathematics in a disciplinary climate that is not favourable to learning: in 2022, about 37% of students in Palestine reported that they cannot work well in most or all lessons (OECD average: 23%); 38% of students do not listen to what the teacher says (OECD average: 30%); 26% of students get distracted using digital devices (OECD average: 30%); and 26% get distracted by other students who are using digital devices (OECD average: 25%). On average across OECD countries, students were less likely to report getting distracted using digital devices when the use of cell phones on school premises is banned.

Feeling safe at and around school

In Palestine, 11% of students reported not feeling safe on their way to school (OECD average: 8%); 11% of students reported not feeling safe in their classrooms at school (OECD average: 7%); 21% of students reported not feeling safe at other places at school (e.g. hallway, cafeteria, restroom) (OECD average: 10%). Some 27% of girls and 38% of boys reported being the victim of bullying acts at least a few times a month (OECD average: 20% of girls and 21% of boys). On average across OECD countries, fewer students were exposed to bullying in 2022 compared to 2018: for example, only 7% of students reported that other students spread nasty rumours about them in 2022, compared to 11% in 2018.

Parental involvement in learning

In 2022, 25% of students in Palestine were in schools whose principal reported that during the previous academic year at least half of all families discussed their child's progress with a teacher on their own initiative (and 26% on the teacher's initiative).

School autonomy

In Palestine, 1% of students attended a school where principals had the main responsibility for hiring teachers (OECD average: 60%), and 2% were enrolled in a school where teachers had the main responsibility for choosing which learning materials are used (OECD average: 76%). Many high-performing school systems tend to entrust principals and teachers with these responsibilities.

Strengthening evaluation and assessment

In Palestine, the National Assessment (NAT) is the only sample-based national large-scale assessment, and its data inform reforms in the education system and help identify further education opportunities. NAT has been conducted since 2008 on a two-year cycle, assessing students in core subjects (Arabic language, Math, Science and English) in pivotal classes (5th, 9th, 6th, and 10th grades).

School-based assessment is another type of assessing students by which teacher-developed tests are used to provide indicators about teaching and learning activities at the school level.

State examinations are the third major type of learning assessment in Palestine. These examinations, called "Tawjihi", are high-stake, certification exams implemented at the end of secondary school cycle.
The National Assessment and Examination system assesses progress within Palestine's education system, while PISA is a global program that provides comparable indicators from Palestine's education system

with that of other countries. PISA uses standardized tests that go beyond rote memorization and focuses on students' capacity to apply knowledge to real-life situations, think critically, and tackle problems. The Ministry of Education and Higher Education in Palestine believes that a combination of national assessments, state examinations, classroom assessments, and international large-scale assessments, like PISA, offers a comprehensive evaluation of educational outcomes, including student achievement and other contextual indicators that have the potential to inform educational policies and contribute to the ongoing efforts to improve education quality and equity in Palestine.

Reporting of results

In Palestine, learning assessment findings used to be reported at different levels in the system. At the central level, a short leaflet with main findings used to be disseminated to the policy committee, director generals, and specialized departments, more detailed results used to be shared with district offices and a school report used to be send to all sampled schools.

For PISA 2022, and since it is Palestine's first participation, the national report, and as part of the collaboration between the Ministry of Education and Higher Education, and the World Bank, under the Supporting an Education Reform Agenda for Improving Teaching, Assessment, and Career pathways (SERATAC) program, experts from the Bank have supported CERD team in data analysis and report writing to support the dissemination of PISA results.

Learning during a global crisis

In Palestine, 54% of students reported that their school building was closed for more than three months due to COVID-19. On average across OECD countries, 51% of students experienced similarly long school closures. In education systems where performance remained high and students' sense of belonging improved, fewer students experienced longer school closures.

During remote learning, 38% of students in Palestine had problems at least once a week with understanding school assignments and 36% of students with finding someone who could help them with schoolwork (OECD averages: 34% and 24%). In education systems where performance remained high and students' sense of belonging improved, fewer students encountered problems during remote learning.

Support for students' well-being was often limited when their schools were closed. In Palestine, 31% of students reported that they were supported daily through live virtual classes on a video communication program. Only 23% of students reported that they were asked daily, by someone from the school, how they were feeling (OECD averages: 51% and 13%).

If school buildings have to close again in the future, many students across the OECD feel confident about using digital technology for learning remotely but fewer students feel confident about taking responsibility for their own learning. Some 53% of students in Palestine feel confident or very confident about using a video communication program and 65% of students feel confident or very confident about motivating themselves to do schoolwork (OECD averages: 77% and 58%).

Establishing foundations for success and improving education outcomes in Palestine

Palestine participated for the first time in PISA in 2022. By comparing results internationally, policy makers and educators in Palestine can learn from other countries' policies and practices.

▌Policies that seem to be working in Palestine and should be continued and built upon

The key educational policies that are reflected within the Ministry of Education and Higher Education Plans are:

1. Improving Early Childhood Development.
2. Improving Enrolment and Survival in Education.
3. Enhancing Students Wellbeing.
4. Improving Quality of the student-centred General Education.
5. Improving Education to Work Opportunities.
6. Developing the Governance system.
7. Implementing Protection, Advocacy and Crisis Management Strategy.
8. Implementing the Education in Jerusalem Strategy.

Within these policy priorities, the Ministry works within its Strategic Plans to implement several priorities that would achieve its strategic objectives.

▌The "low hanging fruits": new policies that can be roll-out a low cost, and quickly, but that can have an impact.

Quick wins: policies and investments that can deliver an impact in the short run.

After releasing the international results for PISA 2022, the Ministry of Education and Higher Education started the process of developing an ambitious plan titled **(The plan for improving learning in Palestinian schools based on national and international learning assessments' findings).** This plan is part of the Ministry's efforts to improve quality of the education in response to the alarming results of PISA 2022 and NAT 2022. The plan includes the following activities:

Curriculum related activities:

1. Analyzing the results of Palestinian students in national and international assessments to identify strengths and weaknesses in student performance.
2. Identifying areas/skills that need improvement in the targeted subjects.
3. Studying the gaps between the content of national curricula and assessment frameworks for international studies.
4. Developing remedial materials that support areas/skills in which weaknesses or gaps have emerged.

Teacher related activities:

1. Developing in-service teacher training programs with more focus on action research, reading comprehension strategies, teaching aids, active learning strategies, teaching high order thinking skills, problem solving, using new learning assessment strategies, and computer-based testing.
2. Conducting more supportive supervisors' visits to boys' schools.
3. Utilizing the training manuals developed within STEM and PIQMAS projects in teacher training programs.
4. Activating school committees to raise student awareness regarding the importance of participating in national and international assessments.

Student related activities:

1. Encouraging students' participation in local and international educational competitions.
2. Provide individual support to students with special needs, and students with learning difficulties.
3. Encouraging students to search for various sources related to international assessments.
4. Encouraging students to participate in scientific clubs and summer schools.
5. Conducting advocacy sessions at school level on how to deal with test anxiety.
6.

School related activities:

1. Updating the E- infrastructure of schools, to align with the computerized testing approach.
2. Organizing meetings between schools to further discuss national and international assessments' findings.
3. Activating the role of school library and computer labs.

Community related activities:

1. Organizing regular meetings with parents and parents councils to discuss issues related to national and international assessments.
2. Enhance networking with community institutions to benefit from their experience, capacities and potential.

Digitization, distance learning and technology employment related activities:

1. Provide links to relevant educational resources to be added on the Ministry of Education and Higher Education educational platforms.
2. Utilizing the E-school platform to enhance the readiness to participate in national and international assessments.
3. Document school success stories based on their participation in national and international assessments.
4. Computerizing test items and publishing them on the Ministry's platforms.

Quality control related issues:

1. Analyzing samples of teachers' made tests to assess their alignment with the approach of international assessments.
2. Developing the supervisory visit to focus more on performance indicators.

Advocacy related activities:

1. Developing media materials that contribute preparation for participation in national and international assessments.
2. Utilizing media outlets and social media to advocate for participation in national and international assessments.
3. Activating the role of school morning program's activities to raise readiness to participate in national and international assessments.
4. Activating an icon through the Ministry's website to introduce national and international evaluation assessments.
5. Strengthening the international discourse in order to contribute to the advancement of the educational process.

Policies, programs, and investments that impact in the long run.

Interventions in the long run will be as follows:

Improving early childhood education

The policy stipulates for gradual application of compulsory early childhood education (one year before first grade—KG2). Marginalized and poor areas are emphasized to have the priority in implementing this policy. To work on achieving this policy,

1. Licensing system for private and governmental preschools.
2. Student guardians made aware of significance in preschool enrolment.
3. KG2 classrooms evaluated based on the quality assurance system.
4. preschools provided with educational aids.

Improving Early Grade Arabic Language Arts Instruction.

Enhancing the early- grade reading and teaching and learning initiatives, linking to Arabic Strategy, to further develop and scale- up a high quality, evidence-based literacy program for Arabic Language arts in 1-4 grades (including reading, writing, speaking and listening) with associated in-service training, teacher guidance materials, and learning resources.

1. Apply Reading Strategy for early grades.
2. Develop and apply T & L materials to boost reading proficiency.
3. Building capacity for teachers and supervisors.
4. Establish classroom libraries.

Developing and Adopting STEM program policies.

STEM (Science, Technology, Engineering and Mathematics) learning strategies are based on the integration and interaction of the four fields together in the educational process. The main objective of adopting STEM education is to enhance students' skills and knowledge in the aforementioned scientific fields, which is reflected in application skills, critical thinking, problem-solving, and innovation, to achieve meaningful learning for students who are able to interact with contextual life problems, which has a positive impact on decision- making and the identification of future professional paths for students.

In this regard, the Ministry of Education and Higher Education is in the process of implementing the following steps:

1. Develop and apply a STEM Framework
2. Develop and rollout STEM interventions, including modules, training materials, T& L materials, STEM equipment and resources.
3. Develop and apply a new career counselling model that fits the Palestinian context.
4. Develop a strategy for expanding the connections between career counselling and the labor market

Improving Enrolment and Survival in Education

1. Encouraging enrolment in non-formal education and literacy programs for those who left the system before completing their education.
2. providing support and protection for education in Jerusalem, so-called "Area C" and Gaza.
3. Ensuring justice in access to educational opportunities, especially for marginalized areas and groups.

School Adoption Project:

1. School Adoption Project aims to increase community participation in the funding of school construction and rehabilitation.
2. The project encourages individuals or institutions who contribute to the funding of one or more of the school needs (construction, maintenance, providing school's technological capabilities particularly to be utilized for distance learning).
3. More than 50% of the public schools have been adopted or partially adopted within this project.

Adopting more inclusive methodologies and teaching methods that are more sensitive to individual differences.

1. Educational diagnosis tools developed for students with learning difficulties.
2. A training manual developed for dealing with autistic and talented students.
3. Digital educational programs developed for students with disability (hearing, visual, learning difficulties)
4. Students with disability provided with specialized equipment, educational games and stationery.

Adopting policy interventions related to gender.

1. Students and teachers trained on the Gender-Based Violence Reduction Program.
2. Students trained in entrepreneurship skills in vocational schools.

Guarantee Equity for access to educational opportunities particularly in marginalized areas and groups.

1. The Ministry strives to maintain the quality of education and ensure safe access to schools despite exposure to the geopolitical divisions of Palestine.
2. The work aimed to support and develop education sector in volatile and turbulent areas, and accordingly it has set three important goals for this topic: ensuring enrolment, protection, and advocacy.

Promotion of Non-Formal Education (Life-long learning for youth and adults' program) enrolment

1. The Ministry works to open classes to educate young people and adults, including the literacy program, to end illiteracy.
2. Parallel education program compensates those (dropouts and graduates of literacy program) who missed the completion of the upper basic stage of the dropouts.
3. Awareness campaigns are implemented by the educational districts, within schools and in residential communities.
4. The Ministry seeks, with partners, to encourage continuous learning by spreading and consolidating a culture of lifelong learning among Palestinian society.

Provision of School Buildings for the Basic and Secondary Cycles

1. New classroom construction.
2. Classrooms under construction have been completed, equipped and furnished.
3. School in the WBGS have been maintained and rehabilitated to face the challenges of Israeli annexation plans.
4. Vocational schools have been maintained, rehabilitated, and equipped.

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