

PISA 2018

A stylized graphic of the Philippine flag, featuring a blue triangle on the left and a red triangle on the right, separated by a white diagonal cross. The flag is set against a white background with decorative orange and yellow geometric shapes at the corners.

**NATIONAL REPORT OF
THE PHILIPPINES**

ABOUT THE COVER

The KITE is symbolic of the Filipino spirit and of the vision the Department is determined to pursue for its learners. It symbolizes Sulong EduKalidad, the Department's national effort to respond to the biggest lingering challenge of basic education in the country – quality, particularly students' learning outcomes.

The four quadrants of the KITE represent the pillars of Sulong EduKalidad that will respond to the rapidly-changing education landscape:

1. **K** to 12 curriculum review and update;
2. **I**mproving the learning environment;
3. **T**eachers' upskilling and reskilling; and
4. **E**ngagement of stakeholders for support and collaboration.

The KITE embodies both the efforts of DepEd and the dreams of the learners to fly high through quality basic education for all.

PISA
2018
National
Report of the
Philippines



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List of Acronyms

ACTRC	Assessment, Curriculum and Technology Research Centre
ASEAN	Association of Southeast Asian Nations
BEST	Basic Education Sector Transformation
CBA	Computer-based Assessment
DepEd	Department of Education
EMISD	Education Management Information Systems Division
GPE	Global Partnership for Education
ILSA	International Large Scale Assessments
IRT	Item Response Theory
JHS	Junior High School
MS	Main Survey
NC	National Center
NEAP	National Educators Academy of the Philippines
OECD	Organisation for Economic Co-operation and Development
PISA	Program for International Student Assessment
PPST	Philippine Professional Standards for Teachers
PQM	PISA Quality Monitors
PSGC	Philippine Standard Geographical Code
PSA	Philippine Statistics Authority
RCTQ	Philippine National Research Center for Teacher Quality
SDG	Sustainable Development Goals
SEA-PLM	Southeast Asia Primary Learning Metrics
SDS	Student Delivery System
SE	Standard Error
SCQ	School Questionnaire
SD	Standard Deviation
SHS	Senior High School
STQ	Student Questionnaire
SY	School Year
TIMSS	Trends in International Mathematics and Science Study
UNESCO	United Nations Educational, Scientific and Cultural Organization

Reader's Guide

PISA Students

Programme for International Student Assessment (PISA) students refer to the test takers of PISA in the Philippines. They are students who were born in 2002, and who were enrolled in secondary schools for School Year (SY) 2017-2018.

PISA-eligible students

PISA-eligible students are those who are 15 years and 3 months to 16 years and 2 months at the time of testing.

Proficiency levels

PISA results are communicated using scales that are divided into proficiency levels. Each level describes what students can do in the specific domain tested. Level 2 is considered the international baseline proficiency level where students begin to demonstrate the competencies that will enable them to actively and effectively participate in life situations.

Students are categorized by their proficiency level as:

High performers:

High performers are students who are proficient at Level 5 or above. They are considered to be able to demonstrate high levels of skills and knowledge and are highly proficient in the assessment domain.

Middle performers:

Middle performers are students who are proficient at Levels 2 to 4. They reached the minimum level to be considered proficient. They are considered to have sufficient skills and knowledge in the assessment domain.

Low performers:

Low performers are students who are below Level 2 proficiency. They are considered to be able to demonstrate low levels of skills and knowledge in the assessment domain. Their proficiency is too low to enable them to participate effectively and productively in everyday life.

The domains (also referred to as “subjects” in various PISA documents) of assessment are defined in the PISA 2018 Assessment and Analytical Framework (OECD, 2019) as:

Reading Literacy is the students’ capacity to understand, use, evaluate, reflect on and engage with texts in order to achieve one’s goals, develop one’s knowledge and potential, and participate in society.

Mathematics Literacy is the students’ capacity to formulate, employ and interpret mathematics in a variety of contexts. It includes reasoning mathematically and using mathematical concepts, procedures, facts and tools to describe, explain and predict phenomena.

Science Literacy is the students’ 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.

Average performance

Average performance is expressed in mean scores. The OECD average corresponds to the arithmetic average of the scores of the OECD countries and economies. This can be used to assess how a country compares with the OECD participating countries and economies as a whole. The National Average refers to the arithmetic average of the scores of the Philippines in a specific assessment domain.

Statistical Significance

Statistical significance indicates that the difference is real and cannot be attributed to chance. The significance level of all hypothesis testing in this report is 0.05, which means that if the comparisons would be repeated 100 times to a random sample, the difference would be found in 95 of those samples.

Confidence Interval and Standard Error

Standard error (SE) measures the probable distance of the sample average from the actual value in the population. Using the standard error, the confidence interval (CI) was computed to show the range of scores within which the population average actually lies. Since the level of significance is 0.05, there is a 95% chance that the computed confidence interval contains the true value.

Rounding of figures

The average score points are rounded to the nearest whole number while the percentages and the standard errors are rounded within two decimal places. Because of rounding, the sum of the numbers in tables may not be exactly equal to the reported totals. All statistics are always calculated using the exact values first and are rounded after the calculation.

Stratification Variables

Administrative regions
These specifically refer to:
Region 1 (Ilocos)
Region 2 (Cagayan Valley)
Region 3 (Central Luzon)
Region 4A (CALABARZON)
Region 4B (MIMAROPA)
Region 5 (Bicol)
Region 6 (Western Visayas)
Region 7 (Central Visayas)
Region 8 (Eastern Visayas)
Region 9 (Western Mindanao)
Region 10 (Northern Mindanao)
Region 11 (Southern Mindanao)
Region 12 (Central Mindanao)
National Capital Region (NCR)
Cordillera Administrative Region (CAR)
CARAGA Administrative Region (CARAGA)
Negros Island Region (NIR)

School management (Private and Public)

Per DepEd Order No. 40, s. 2014 (Establishment, Merging, Conversion, and Naming/Renaming of Public Schools, and Separation of Public School Annexes in Basic Education), a public school is “an educational institution under the control and supervision of the Department of Education”. Public schools are owned by DepEd.

On the other hand, DepEd Order No. 88, s. 2010 (Revised Manual of Regulations for Private Schools in Basic Education) defines a private school as “a privately owned and managed institution for teaching and learning, established and authorized by the Department to operate certain educational programs in accordance with law and the prescribed policies and rules of the Department.”

Type of Community (Urban and Rural)

The classification of community in this report is based on the Philippine Standard Geographical Code (PSGC), which was determined by the Philippine Statistics Authority (PSA) and its interagency Technical Working Group on Geographic Code. Pursuant to Republic Act No. 10625, entitled “Reorganizing And Strengthening The Philippine Statistical System And For Other Purposes”, the PSA is mandated to prescribe uniform standards and classification systems in the generation of government statistics to ensure harmonization and comparability of statistics in the country and at the international level.

School level

School level includes both Junior High School (JHS) and Senior High School (SHS).

Executive Summary

The Department of Education (DepEd), mandated to ensure access to quality basic education for all Filipinos, is committed to engage in various national and international system assessments to guide its efforts to address the challenge of improving the quality of basic education.

Towards this end, DepEd participated in the 2018 cycle of the Programme for International Student Assessment (PISA), a triennial international assessment administered to 15-year old learners, who are near the end of their compulsory basic education. Implemented by the Organisation for Economic Cooperation and Development (OECD), PISA specifically looks into the learners' ability to apply the knowledge they have gained in formal education to everyday situations. The PISA results can provide relevant insights on student performance and inform policy decisions of the Department.

For 2018, Reading Literacy was assessed as major domain, and Mathematical Literacy and Scientific Literacy of the students were assessed as minor domains. Global Competence was also included as an innovative assessment.

Some of the key findings in each domain are summarized below:

Reading Literacy

- Filipino students obtained an average score of 340 points in Overall Reading Literacy, which was significantly lower than the OECD average of 487 points.
- Only 1 out of 5 Filipino students (19.4%) achieved at least the minimum proficiency level (Level 2) in Overall Reading Literacy.
- Among the participating ASEAN countries, Filipino students performed closest to but significantly behind Indonesian students by 31 points in Overall Reading Literacy.
- Among the Process tasks, Filipino students obtained the highest mean scores in Locate Information (343 points)
- Between the two reading source subscales, Filipino students attained a higher average score in Source - Multiple (341 points).
- In the Philippines, female students performed significantly better than male students in Overall Reading Literacy with a 27-point difference.
- Majority of male students (84.82%) and female students (76.90%) did not obtain the minimum proficiency level (Level 2) in Overall Reading Literacy.
- Filipino students from private schools averaged 390 points, which was significantly higher than public school students who averaged 328 points.
- The mean Reading Literacy score of SHS students (428 points) was significantly higher than that of JHS students (339 points).
- The National Capital Region (NCR), Region 7 (Central Visayas), and Region 11 (Southern Mindanao) achieved the highest Overall Reading Literacy average performance for their respective island groups.
- The mean Reading Literacy score of students residing in urban communities (355 points) was significantly higher than the mean score of those living in rural communities (313 points).

Mathematical Literacy

- Filipino students achieved an average score of 353 points in Mathematical Literacy, which was significantly lower than the OECD average of 489 points.
- Only 1 out of 5 Filipino students (19.7%) attained at least the minimum proficiency level (Level 2) in Mathematical Literacy.
- Among the participating ASEAN countries, Filipino students performed closest to but significantly behind Indonesian students by 26 points in Mathematical Literacy.
- The average Mathematical Literacy score of female students (358 points) was significantly higher than that of male students (346 points).
- The average Mathematical Literacy score of students in private schools (395 points) was significantly higher than the average score of those in public schools (343 points).
- SHS students performed significantly better than JHS students with a 96-point difference.
- The National Capital Region (NCR) achieved the highest Mathematical Literacy average score across all the administrative regions with 385 points.
- Region 7 (Central Visayas) garnered the top average Mathematical Literacy score in the Visayas group of islands, while Region 11 (Southern Mindanao) attained the highest in Mindanao.
- Among the administrative regions, Region 6 (Western Visayas) had the highest percentage (2.74%) of Level 4 proficient students in Mathematical Literacy.
- The mean Mathematical Literacy score of students in urban areas (365 points) was significantly higher than that of students in rural areas (329 points).

Scientific Literacy

- Filipino students attained an average score of 357 points in Scientific Literacy, which was significantly lower than the OECD average of 489 points.
- Female students obtained an average score of 359 points for Scientific Literacy, which was slightly higher but not significantly different from the average score of male students (355 points).
- Students from private schools scored an average of 399 points in Scientific Literacy, which was significantly higher than that of public school students who averaged at 347 points.
- SHS students (439 points) performed significantly better than JHS students (356 points).
- The National Capital Region (NCR) achieved the highest Scientific Literacy scores across all the administrative regions included in the study.
- Region 7 (Central Visayas) obtained the top average score for Scientific Literacy in the Visayas group of islands, while Region 11 (Southern Mindanao) had the highest in Mindanao.
- The average performance of students in urban areas for Scientific Literacy was 370 points, which was significantly greater than the average performance of those in rural areas (333 points).

The PISA 2018 results reflect the urgency of improving the quality of basic education in the Philippines. The Department will lead this national effort through “Sulong EduKalidad”, whereby it will implement aggressive reforms in four key areas: (1) Upskilling teachers and school leaders through a transformed professional development program; (2) Review and updating of curriculum; (3) Continuous improvement of the learning environment; and (4) Multi-stakeholder cooperation.

This report covers the cognitive results of the PISA 2018. Supplemental reports analyzing contextual variables will be released in the coming year to deepen understanding of student performance, and provide further insights for DepEd’s push for education quality.



Background and Overview ¹

Introduction to PISA

PISA is the Programme for International Student Assessment (PISA) of the Organisation for Economic Co-operation and Development (OECD). It is a triennial international test first administered to 43 participating countries in the year 2000. PISA looks into “the extent to which 15-year-old students, near the end of their compulsory education, have acquired key knowledge and skills that are essential for full participation in modern societies, with emphasis on how well students can extrapolate from what they have learnt and can apply that knowledge in unfamiliar settings, both in and outside of school” (OECD, 2018). This approach differs from other assessments that focus on the students’ mastery of knowledge and skills from a specific curriculum.

PISA assessments cover three foundational domains, namely Reading Literacy, Mathematical Literacy, and Scientific Literacy. The focus shifts among these three domains for each assessment cycle, with the focus domain tested in greater detail than the two minor domains of the cycle. Moreover, one innovative domain is included in the test every cycle. The previous innovative domains were Creative Problem Solving in 2012, Collaborative Problem Solving in 2015, and Financial Literacy in 2012 and 2015.

In addition, participating countries and economies may opt to have students, school principals, and teachers answer background questionnaires that will contextualize the results of the cognitive assessments. These background questionnaires seek information on:

- Students and their family backgrounds, including their economic, social and cultural capital;
- Aspects of students’ lives, such as their attitudes towards learning, their habits and life in and outside of school, and their family environment;
- Aspects of schools, such as the quality of the schools’ human and material resources, public and private management and funding, decision-making processes, staffing practices, the school’s curricular emphasis and the extracurricular activities it offers;
- The context of instruction, including institutional structures and types, class size, classroom and school climate, and reading activities in class; and
- Aspects of learning, including students’ interest, motivation and engagement (OECD, 2015).

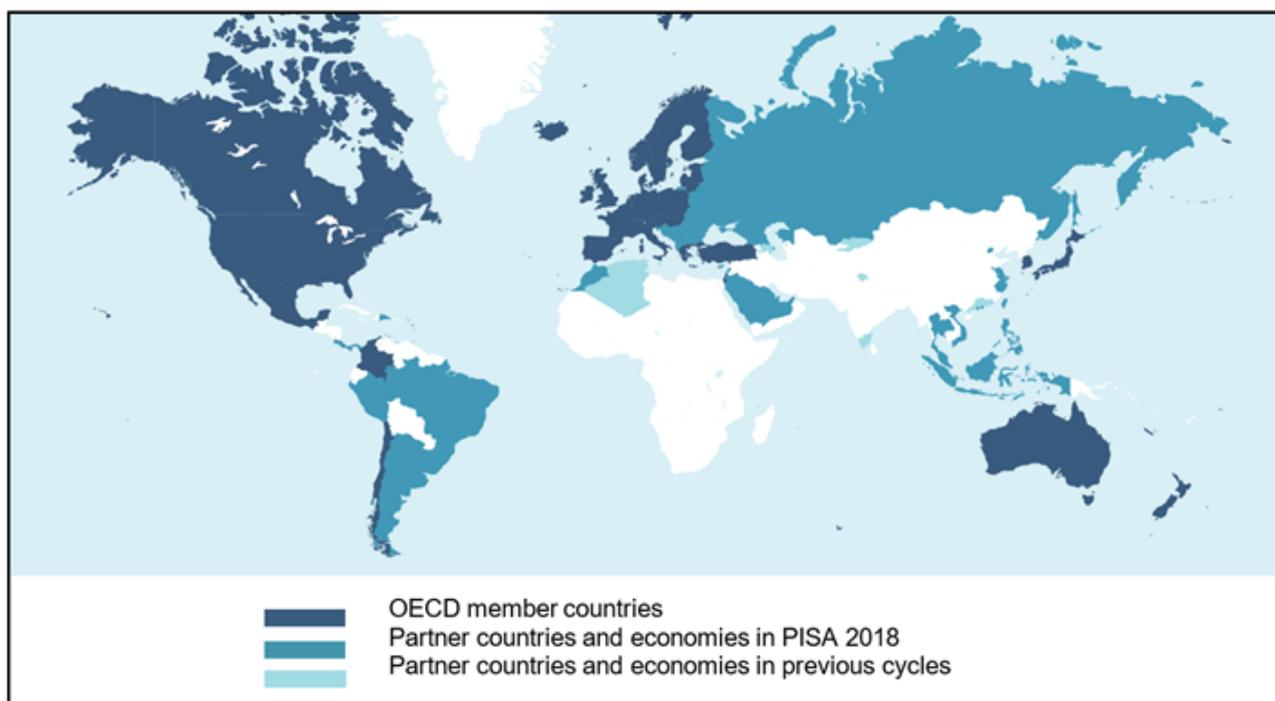


Figure 1. Map of participating Countries and economies in PISA 2018, adapted from PISA 2018 Results: What Students know and can do, Vol 1, p. 26

¹ The discussions on the international administration of PISA 2018 are mainly adapted from the “PISA 2018 Results: What Students know and can do, Vol 1” (OECD, 2019).

PISA 2018 is the seventh PISA cycle, and was participated in by around 600,000 15-year old students from 79 OECD and partner countries (see Figure 1 and Table 1). It focused on Reading Literacy as the major domain, while Mathematical Literacy and Scientific Literacy were the minor domains. It also included a test on Global Competence as an innovative assessment. This cycle was delivered through a two-hour computer

OECD Countries		Partner Countries (PISA 2018)		Partner Countries (previous cycles)
Australia	Latvia	Albania	Macao (China)	Algeria
Austria	Lithuania	Argentina	Malaysia	Azerbaijan
Belgium	Luxembourg	Azerbaijan	Malta	Guangdong (China)
Canada	Mexico	Belarus	Moldova	Himachal Pradesh (India)
Chile	Netherlands		Montenegro	Kyrgyzstan
Colombia	New Zealand	Bosnia and Herzegovina	Morocco	Liechtenstein
Czech Republic	Norway		North Macedonia	Mauritius
Denmark	Poland	Brazil	Panama	Miranda (Venezuela)
Estonia	Portugal	Brunei Darussalam	Peru	Tamil Nadu (India)
Finland	Slovak Republic	B-S-J-Z (China)	Philippines	Trinidad and Tobago
France	Slovenia	Bulgaria	Qatar	Tunisia
Germany	Spain	Costa Rica	Romania	
Greece	Sweden	Croatia	Russia	
Hungary	Switzerland	Cyprus	Saudi Arabia	
Iceland	Turkey	Dominican Republic	Serbia	
Ireland	United Kingdom	Georgia	Singapore	
Israel	United States	Hong Kong (China)	Chinese Taipei	
Italy		Indonesia	Thailand	
Japan		Jordan	Ukraine	
Korea		Kazakhstan	UAE	
		Kosovo	Uruguay	
		Lebanon	Vietnam	

Table 1. List of Participating countries and economies in PISA 2018 adapted from PISA 2018 Results: What Students know and can do, Vol 1, p. 26

based assessment (CBA), except for nine countries that opted for the pen-and-paper mode of testing, namely Argentina, Jordan, Lebanon, the Republic of Moldova, North Macedonia, Romania, Saudi Arabia, Ukraine and Vietnam. A multistage adaptive approach was also applied for the first time in Reading Literacy.

Consistent with the Item Response Theory (IRT), PISA results are communicated using scales that represent both the increasing complexity of the test items, and the corresponding increase in the proficiency of the test taker in a particular domain. Each scale is divided into multiple proficiency levels within which tasks share specific features that systematically differ from those at either higher or lower levels (See Figure 2). As discussed in an earlier PISA report:

“The scores on the Reading Literacy scale represent varying degrees of proficiency. A low score indicates that a student has very limited knowledge and skills, while a high score indicates that a student has quite advanced knowledge and skills. Use of IRT makes it possible not only to summarise results for various subpopulations of students, but also to determine the relative difficulty of the Reading Literacy tasks included in the survey. In other words, just as individuals receive a specific value on a scale according to their performance in the assessment tasks, so each task receives a specific value on a scale according to its difficulty, as determined by the performance of students across the various countries that participated in the assessment” (OECD and UNESCO, 2003).

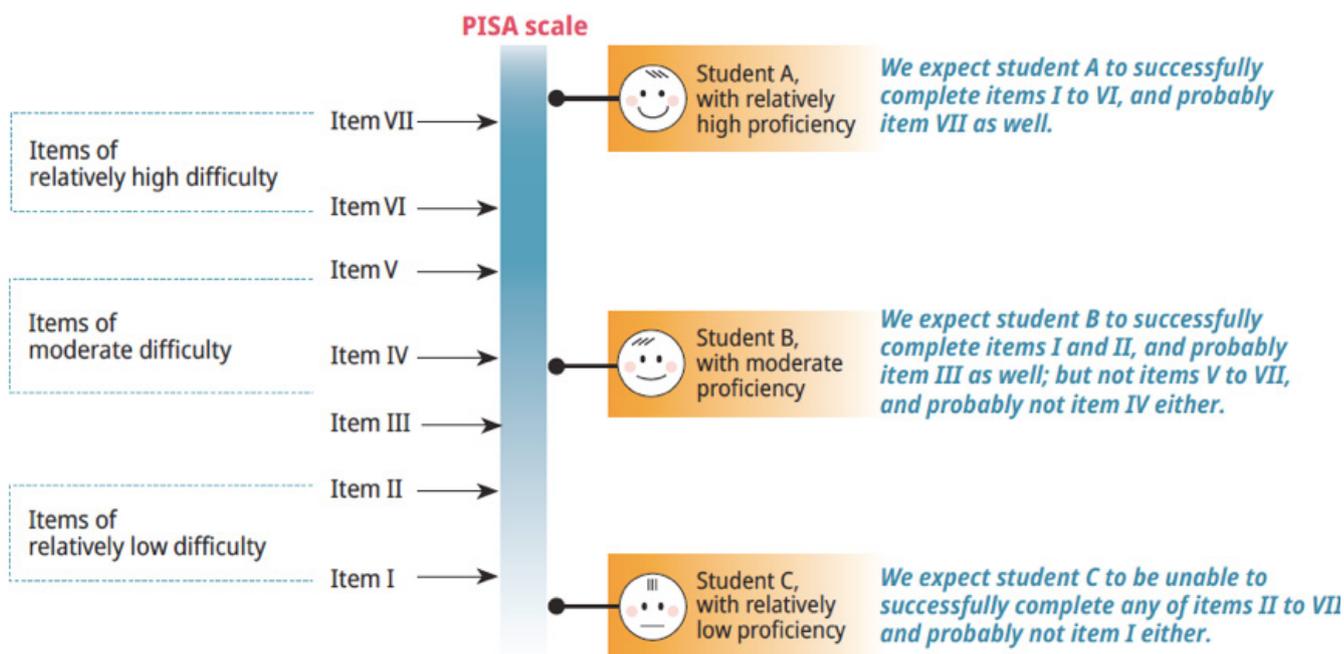


Figure 2. Relationship between questions and student performance on a scale, lifted from PISA 2018 Results: What Students know and can do, Vol 1, p. 26

Further, the results of the major domain are also presented through aspect subscales. For PISA 2018, Reading Literacy was presented in two sets of subscales, namely, the process, which refers to the main cognitive process required to solve the item (locating information, understanding, or evaluating and reflecting), and the source, which refers to the number of text sources required to construct the correct answer to the item (single source or multiple source). This approach allows the PISA results to describe what substantial numbers of students can do with tasks at different levels of difficulty, in a manner that is comparable through the years.

Language of Testing

The PISA 2018 Technical Standards require participating countries to use their language of instruction as the language of testing.

Background Questionnaires

The cognitive instruments of PISA were administered together with two core background questionnaires -- Student Questionnaire (STQ) and School Questionnaire (SCQ) -- that were common to all participating countries/economies. As discussed in the PISA 2018 International Report Vol 1, the STQ asked about the “students themselves, their attitudes, dispositions and beliefs, their homes, and their school and learning experiences”, whereas the SCQ gathered information on “school management and organisation, and the learning environment”.

Philippines' Participation in PISA

Republic Act No. 9155 (RA No. 9155), otherwise known as the Governance of Basic Education Act of 2001, mandates the Department of Education (DepEd) to formulate national educational policies to improve the delivery of its services and achieve basic education outcomes. In line with this, DepEd implemented Republic Act No. 10533 (RA No. 10533) entitled "Enhanced Basic Education Act", also known as the K to 12 Program, which aims to equip Filipino learners with skills and competencies that address the demands of the 21st Century.

In support of the K to 12 program, part of Secretary Leonor Magtolis Briones' 10-Point Agenda is the continuous improvement of the basic education system. Amidst the significant developments of improving ACCESS, DepEd is also geared towards achieving QUALITY basic education. This declaration of commitment is in consonance with the objectives under Sustainable Development Goal (SDG) 4: Quality Education.

Assessment plays an important role in determining the quality of basic education. In the context of the K to 12 Program, assessment results shall be used to look into the learners' performance so that relevant and responsive policies/programs/reforms can be introduced to further improve teaching and learning quality. One of the initiatives of assessing performance is the Department's participation in international large-scale assessments (ILSAs), which aims to achieve the following purposes as outlined in DepEd Order No. 29, s. 2017 (Policy Guidelines on System Assessment in the K to 12 Basic Education Program):

1. Establish baselines for the basic education system and the implementation of the K to 12 curriculum in schools in terms of teaching and learning;
2. Monitor the implementation of the K to 12 curriculum in schools in terms of teaching and learning;
3. Measure effectiveness of instructional reforms that are part of the K to 12 basic education program;
4. Generate reliable data for purposes of benchmarking;
5. Provide bases for the improvement of programs for learner development, curriculum implementation and school effectiveness; and
6. Provide evidence that will aid policy formulation, planning and programming at the division, regional and national levels.

In particular, PISA assesses students nearing the end of their compulsory education and the Philippines' participation in PISA will provide DepEd an additional tool to measure the effectiveness of the enhanced curriculum and its delivery systems. DepEd can utilize the PISA 2018 results to understand how Filipino students apply what they have learned in everyday contexts. With the global advancement and rapid technological changes brought about by the digital era and Industry 4.0, PISA shall provide timely and relevant insights on student performance and inform policy decisions and preparations of the Department.

Language of Testing

PISA 2018 was administered in the Philippines in English pursuant to the PISA 2018 Technical Standards. Given that Filipino PISA takers would most likely be in Junior High School (JHS) at the time of the test, the prevailing policy then, i.e. DepEd Order No. 31, s. 2012 (Policy Guidelines on the Implementation of Grades 1 to 10 of the K to 12 Basic Education Curriculum Effective School Year 2012-2013) specifies that the language of instruction is English for the concerned learning areas.

The test assumes that the test-takers should have reached a sufficient level of understanding in English to work on the PISA test without encountering linguistic problems.

Field Trial

PISA requires participating countries to conduct a Field Trial a year prior to the Main Survey (MS) in order to ensure that the instruments developed contain valid and appropriate test items in all countries, and to test the operational procedures for sampling and test administration in schools. For PISA 2018, the Field Trial also allowed for a refinement of the multistage adaptive approach in the Reading Literacy domain, which was implemented in the 2018 cycle for the first time. In the Philippines, the Field Trial was successfully conducted in March 2017.

Main Survey Pre-Assessment Phase

Sampling Design

A two-stage stratified random sampling design was used to draw the sample schools and students. In the first stage, 188 schools were randomly selected from 17 regions. The probability of a school being sampled is proportional to the estimated size of their PISA-eligible population. However, one school did not have any PISA-eligible student; thus, it was excluded in the final sample. In the second stage, 42 PISA students were sampled from each randomly selected school using the PISA within-school sampling software, KeyQuest.

Schools in hinterlands, islets, and coastal areas, exclusive schools for Students with Educational Needs (SEN), and schools in highly political administrative region with peace and order issues during the MS were excluded in the sampling frame.

Assessment Materials Adaptation

For the Philippines' first cycle participation, the international English version of all PISA assessment materials (i.e. cognitive instruments, background questionnaires and the school-level materials) were adapted in Standard American English and in local context prior to the Field Trial in 2017. The school-level materials pertain to the test manuals, scripts and forms that contain instructions on how data are collected in a country.

All adaptations for the Philippines' PISA national version were negotiated and agreed with the contractors during the pre-assessment phase in 2016.

National PISA Training

In preparation for CBA implementation, training sessions were conducted to discuss the PISA overview, manuals, school-level forms and assessment scheme. The training included demonstrative reading of the test script, hands-on exercises, and simulation on problem-solving scenarios. Field testing personnel and PISA Quality Monitors (PQMs) attended the training.

PISA Advocacy Campaign

The National Center (NC), which is the DepEd Bureau of Education Assessment, in partnership with the Assessment, Curriculum and Technology and Research Center (ACTRC), conducted an advocacy campaign to raise school and student awareness of DepEd's participation in PISA.

Computer Systems Compatibility Check

Prior to the MS, the PISA Systems Diagnostic (SD) was used to test the school computers' compatibility with the PISA standards.

Main Survey Assessment Phase

Computer-based Assessment

The PISA test was administered in three weeks from March to April 2018 using CBA mode and was delivered through the Student Delivery System (SDS), a self-contained set of applications for delivery of the cognitive assessments and student questionnaire. The SDS was duplicated in USB flash drives, which were distributed to the schools. The PISA test was designed to last for two hours, with one hour for the Reading Literacy Assessment.

For the Reading Literacy test, a multistage adaptive approach was used. In this approach, students were first tasked to answer a core stage of questions that is uniform for all students; the results from this first stage then determined the difficulty level of the succeeding stages (1 and 2) of questions.

PISA Quality Monitors

The conduct of the Main Survey in the Philippines was strictly observed and documented by selected

PQMs in randomly sampled schools. The primary responsibility of the PQMs was to “document the extent to which testing procedures in a sample of schools are implemented in accordance with standard test administration procedures” (PISA Quality Monitor Manual, 2017). PQMs accomplished PISA Data Collection Forms, which were submitted to OECD for monitoring and quality assurance purposes.

Main Survey Post Assessment Phase

The open-response items from the cognitive assessments and the background questionnaire were coded and checked for reliability. The coded data were subsequently integrated in the national database, together with the machine-coded responses, SCQ data and session reports. The national database was submitted to the Data Management contractors and accepted as country data.

Reading Literacy

How does PISA 2018 Assess Reading Literacy?

The major domain of assessment of PISA 2018 is Reading Literacy. This is the third time that Reading Literacy is the major domain. The 2018 framework integrates the contemporary and comprehensive theories of Reading Literacy, and considers how students acquire and use information in different contexts.

Reading Literacy was assessed using two sets of subscales: Process (Locate Information, Understand, Evaluate and Reflect) and Source (Single and Multiple).

Locate Information assesses the ability of the students to access and retrieve information within a text, and search and select relevant text. This includes locating information from tables, text chapters or whole books, as well as selecting information from one or more texts.

Understand measures whether students can comprehend sentences or short passages and construct an integrated text representation based on a sentence or an entire passage.

Evaluate and Reflect measures skills in assessing the quality and credibility of the text, reflecting on the quality and style of the writing, and detecting and handling conflict when faced with contradicting multiple texts.

Figure 3 details the tasks in the process subscale of the Reading Literacy Framework.

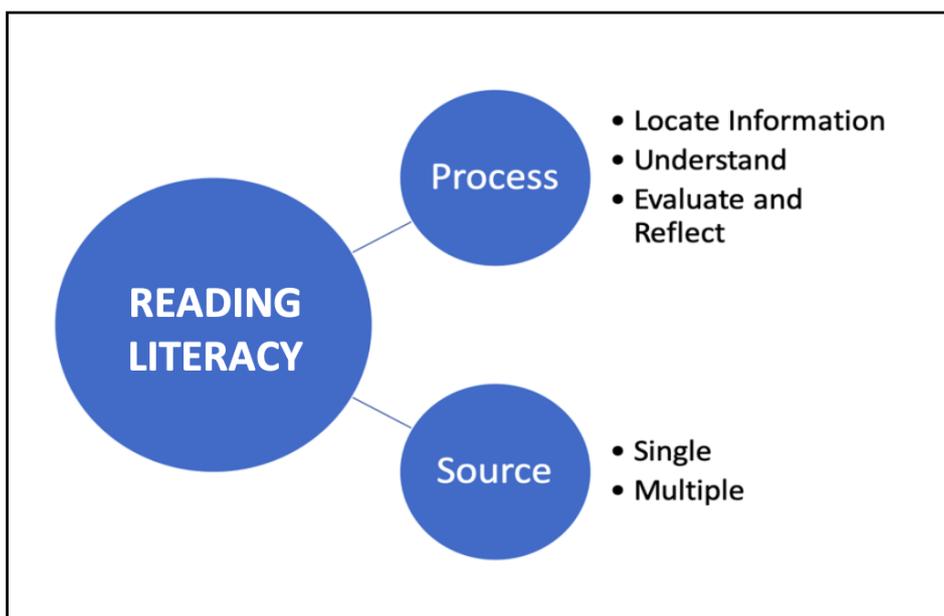


Figure 3. Tasks in the process subscale of the Reading Literacy Framework

The Source subscale is distinguished based on the unit of text. Single texts are defined by having a definite author or group of authors, time of writing or publication date, and reference title, whereas Multiple texts are described by having various authors, being published at different times, or bearing several titles or reference numbers.

2. The scores on Reading Literacy are scaled to represent varying degrees of proficiency as shown in Table

Table 2. Performance Level Descriptions for Reading Literacy

Level	Minimum Score	Characteristics of Task
6	698	<p>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.</p> <p>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.</p> <p>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.</p>
5	626	<p>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.</p> <p>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.</p> <p>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.</p>

4	553	<p>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.</p> <p>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 memorize prior task context.</p> <p>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.</p> <p>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.</p>
3	480	<p>Readers at Level 3 can represent the literal meaning of single or multiple texts in the absence of explicit content or organizational 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.</p> <p>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 recognize the relationship between several pieces of information based on multiple criteria.</p> <p>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.</p> <p>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.</p>

2	407	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
1a	335	<p>Readers at Level 1a 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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
1b	262	<p>Readers at Level 1b 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.</p> <p>Readers at this level 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.</p> <p>Tasks at Level 1b 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.</p>

1c	189	<p>Readers at Level 1c 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.</p> <p>Tasks at this level involve simple vocabulary and syntactic structures.</p>
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What can Filipino students do in Reading?

This section provides the mean scores and the proficiency levels of Filipino students not only in Overall Reading Literacy but also in the subscales measured in PISA 2018. Both aggregated and disaggregated summary statistics describing the performance of the students are presented in this section.

Overall Performance

The average performance on the PISA 2018 Overall Reading Literacy across all participating OECD countries was 487 points. This serves as a baseline against which each country's reading proficiency in PISA 2018 is compared. Figure 4 shows both the OECD and participating ASEAN country mean scores in Overall Reading Literacy.

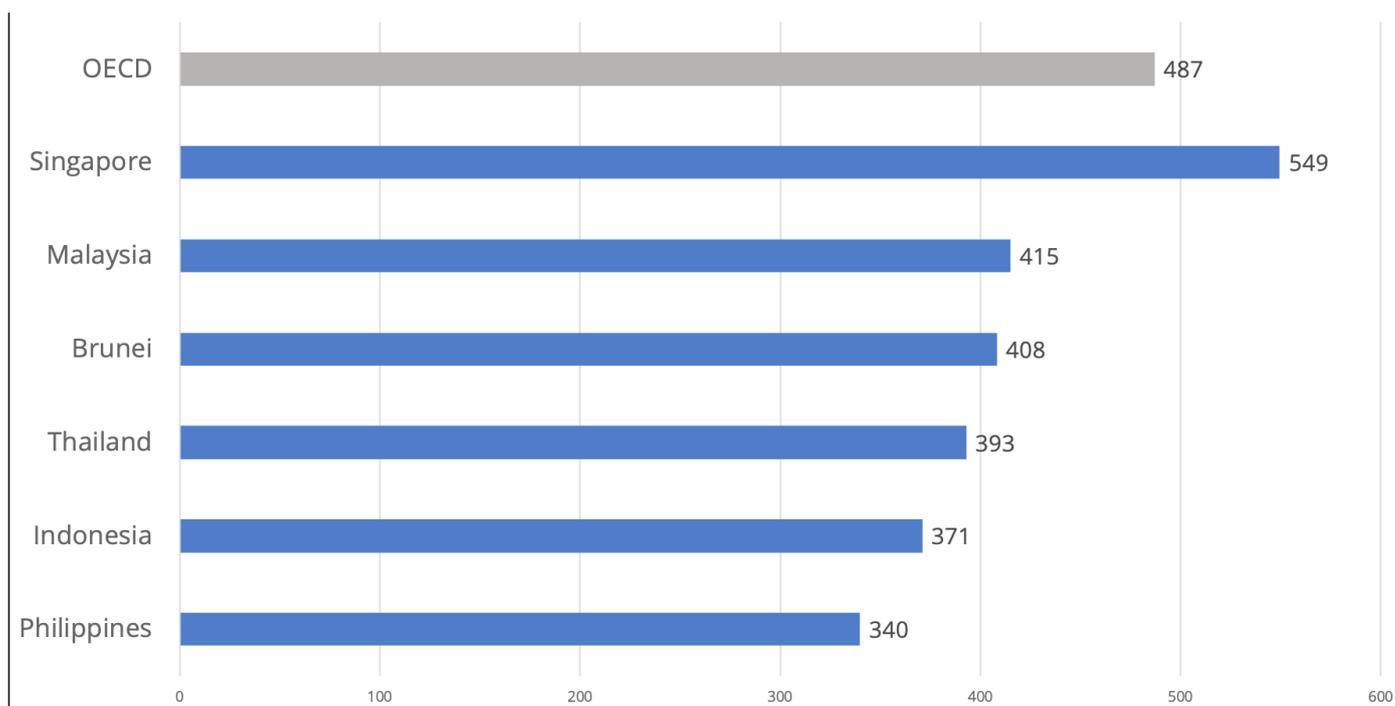


Figure 4. Mean Scores of the participating ASEAN Countries and OECD in Overall Reading Literacy

Filipino students obtained a mean score of 340 points in the Overall Reading Literacy scale, significantly lower than the OECD average of 487 points. Singapore obtained the highest score in Overall Reading Literacy among the participating ASEAN countries with 549 points, which is higher than the OECD average. Thailand, Brunei, and Malaysia achieved mean scores that are slightly higher than those of the Philippines and Indonesia.

The Philippines' average performance in Overall Reading Literacy is within Proficiency Level 1a, one level lower than the minimum proficiency level. This suggests that in general, Filipino students can understand the literal meaning of sentences or short passages, recognize the main theme, and make a single connection between several adjacent pieces of information. The OECD average was classified as Proficiency Level 3, two levels higher than that of the Philippines.

Figure 5 displays the percentage distribution of students in the Philippines, OECD, and other participating ASEAN countries in Overall Reading Literacy.

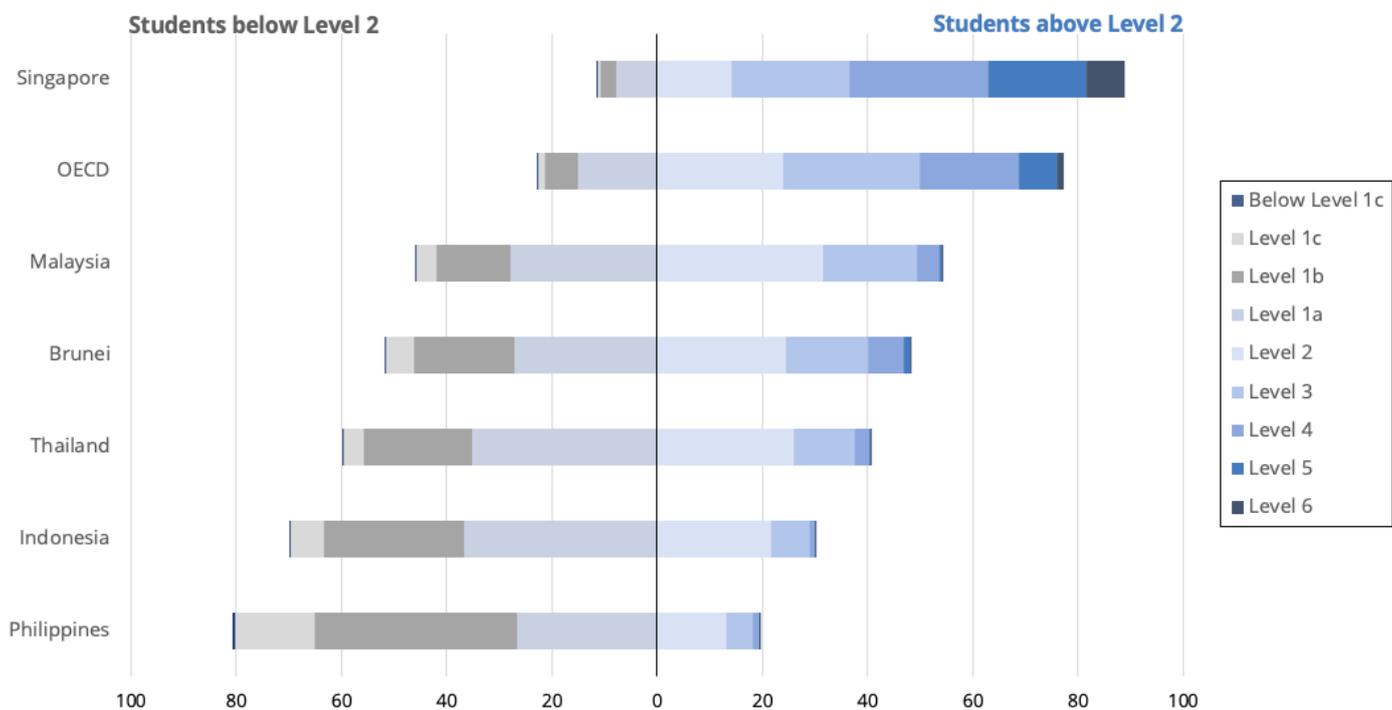


Figure 5. Percentage distribution Filipino Students in Overall Reading Literacy by Proficiency Level

Overall, 38.36% of Filipino students were classified as having Proficiency Level 1b. This percentage of Filipino students can evaluate the literal meaning of simple sentences and scan for and locate a single piece of prominently placed and explicitly stated information in a single sentence, a short text, or a simple list.

Furthermore, 26.74% Filipino students performed within Proficiency Level 1a. These students can understand the literal meaning of sentences or short passages and recognize 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.

In total, about 80% of Filipino students were classified as having Proficiency Level below Level 2. This means that majority of students cannot identify the main idea in a piece of text of moderate length, and may have difficulty in making comparisons based on single features of text and in making connections between text and outside knowledge. They are also not expected to represent literal meaning of single or multiple texts in the absence of explicit content or organizational clues.

Only 0.05% of Filipino students attained Proficiency Level 5. These students are expected to comprehend lengthy texts, and to infer which information in the text is relevant even though the information of interest may be easily overlooked.

Performance by Subscale

This section details the performance of Filipino students by Reading Literacy subscale.

Average performance per subscale

Figure 6 provides the mean scores of Filipino students vis-a-vis the OECD averages for Reading Literacy subscales.

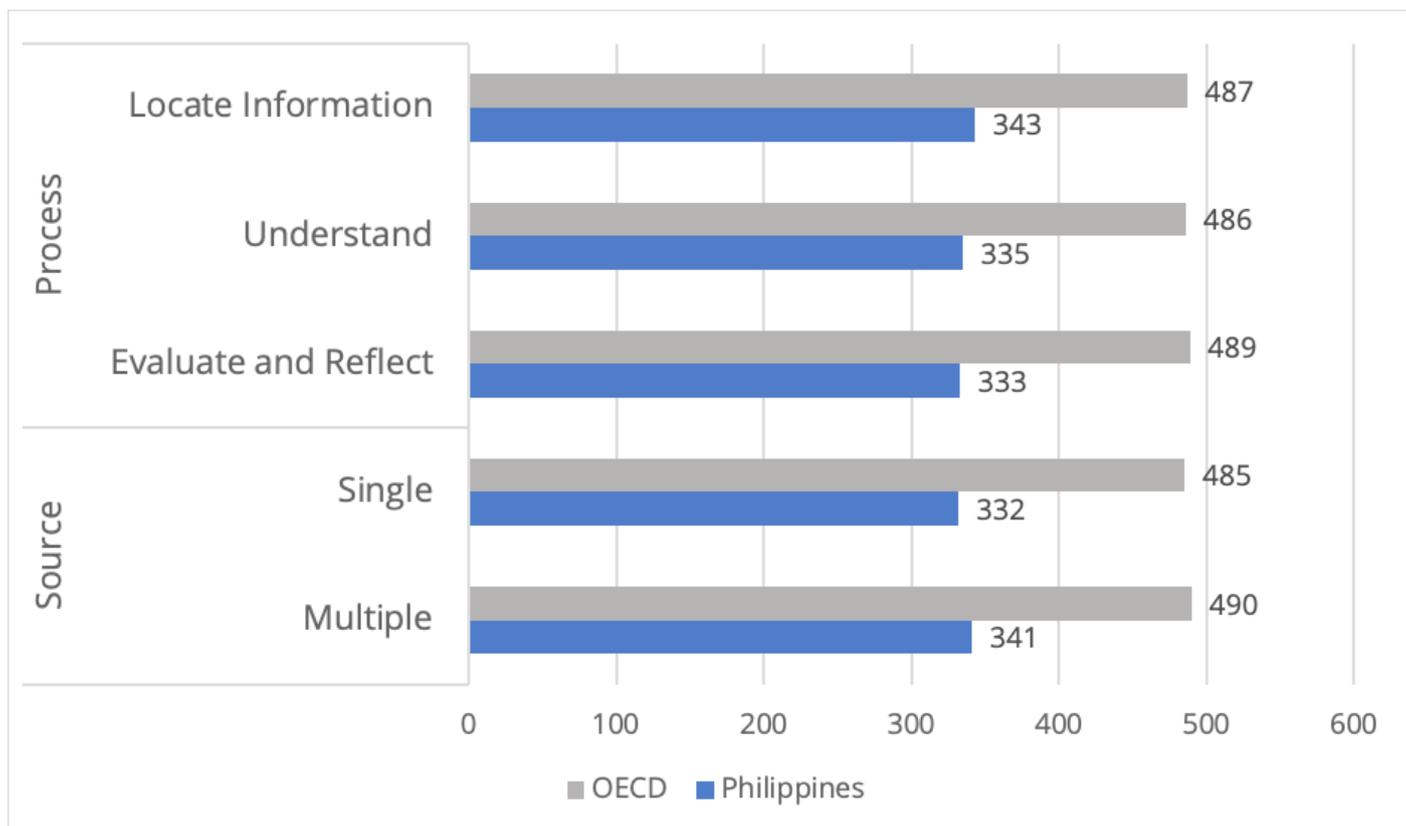


Figure 6. Mean Score of the Philippines and OECD by Reading Literacy Subscales

Filipino students performed significantly lower than an average OECD student across the reading subscales. Filipino students obtained the highest mean score of 343 points in Locate Information for the process subscale, while in the source subscale, Filipino students scored higher in Multiple Source than in Single Source by 9 points.

In the process subscale, the largest difference of 156 points between the Philippine and OECD averages is in Evaluate and Reflect. The difference between the two averages is smallest in Locate Information, at 144 points.

In the Philippines, all mean scores can be categorized as Proficiency Level 1a, whereas all OECD averages were classified as Proficiency Level 3.

Table 3 provides the mean scores of other ASEAN countries that participated in PISA 2018 by subscale.

Country	Process Subscale			Source Subscale	
	Locate Information	Understand	Evaluate and Reflect	Single	Multiple
OECD	487	486	489	485	490
Singapore	553	548	561	554	553
Malaysia	424	414	418	414	420
Brunei	419	409	411	408	415
Thailand	393	401	398	395	401
Indonesia	372	370	378	373	371
Philippines	343	335	333	332	341

Table 3. Mean Scores per Reading Literacy Subscales of participating ASEAN countries

Performance by Gender

Figure 7 shows the difference between the average male and female student performance in Reading Literacy for both the Philippines and OECD.

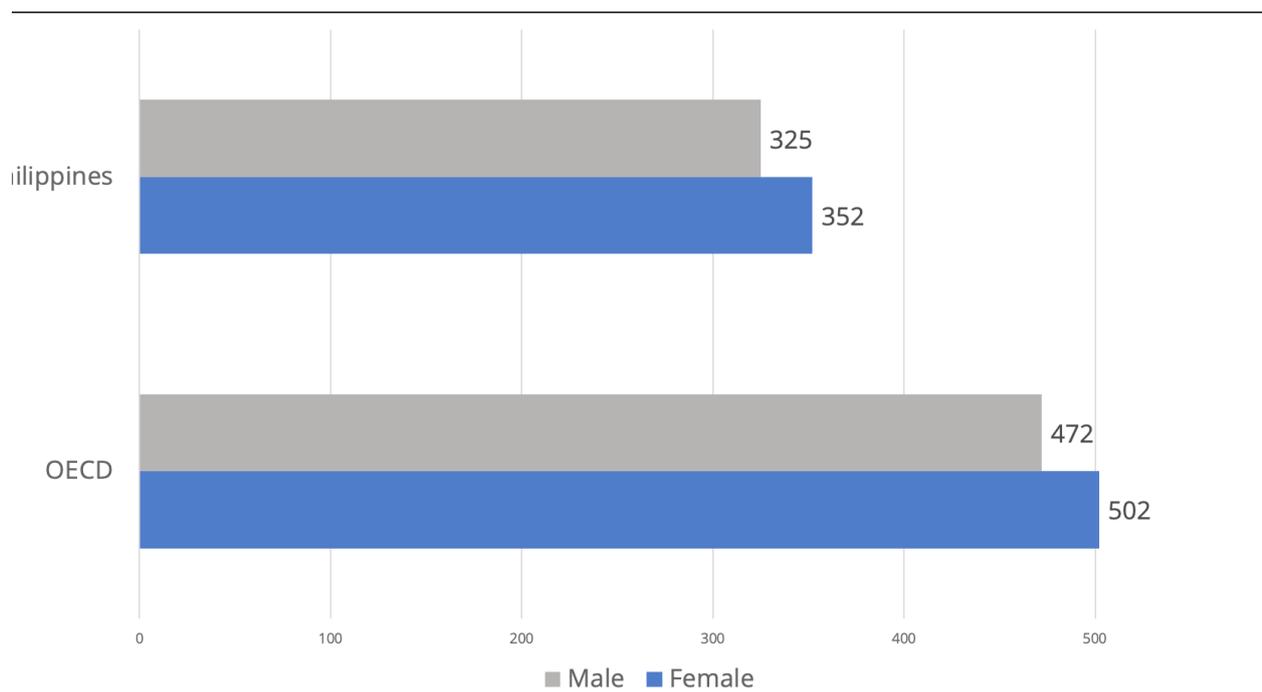


Figure 7. Mean Scores of the Philippines and OECD in Overall Reading Literacy by Gender

The mean score of female students in the Philippines was 352, significantly lower than the OECD average for females by 150 points. On the other hand, the mean score of male Filipino students was 325, also significantly lower than that of an average OECD participating country by 147 points. For both OECD and the Philippines, female students performed significantly better than male students in Overall Reading Literacy.

Figure 8 shows the percentage distribution of Filipino students across proficiency levels in Overall Reading Literacy by gender.

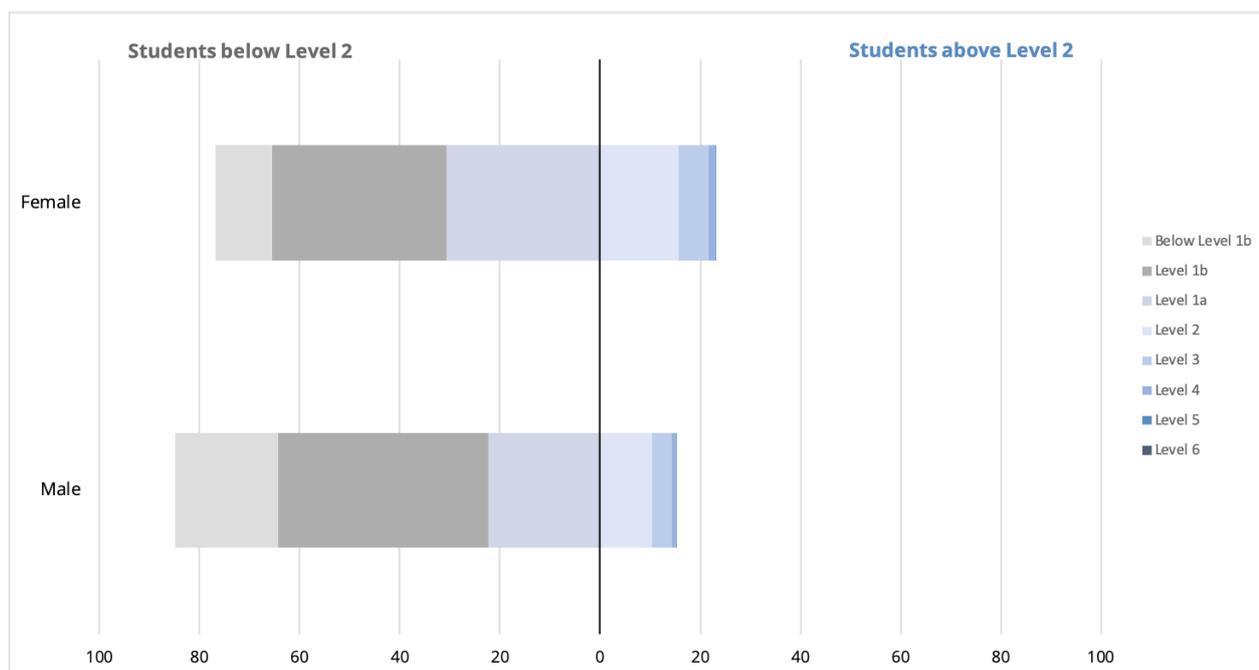


Figure 8. Percent Distribution of Filipino students across proficiency levels in Overall Reading Literacy by Gender

As shown, 41.95% of male and 35.00% of female students were at Proficiency Level 1b. Students at this level can evaluate the literal meaning of simple sentences and can interpret the literal meaning of texts by making simple connections between adjacent pieces of information in the question and/or the text.

Overall, majority of the male (84.82%) and female (76.90%) students were considered low performing (i.e., below Proficiency Level 2). These students can understand the literal meaning of sentences or short passages, evaluate the literal meaning of simple sentences, 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. Additionally, these students are not expected to identify the main idea in a piece of text of moderate length and understand relationships or construe meaning by making basic inferences within a limited part of the text when the information is not prominent.

No student from either gender attained Proficiency Level 6 in Overall Reading Literacy, while 0.06% and 0.04% of female and male students, respectively, are at Proficiency Level 5. These students can comprehend lengthy texts, inferring which information in the test is relevant even though the information of interest may be easily overlooked. In addition, these students can perform causal or other forms of reasoning based on a deep understanding of extended pieces of text.

Average performance per subscale by Gender

Table 4 lists the mean scores of Filipino students and corresponding standard errors for each Reading Literacy subscale presented by gender vis-a-vis their OECD counterparts. On the other hand, Figure 9 presents the mean scores of Filipino students by gender across the reading subscales graphically.

Reading Subscale	Female				Male			
	Philippines		OECD		Philippines		OECD	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Process								
<i>Locate Information</i>	357	4.0	502	0.5	329	4.0	472	0.6
<i>Understand</i>	348	3.5	501	0.5	320	3.4	472	0.5
<i>Evaluate and Reflect</i>	344	4.3	502	0.5	321	4.0	476	0.6
Source								
<i>Single</i>	345	4.0	501	0.5	317	4.0	469	0.5
<i>Multiple</i>	353	3.6	503	0.5	327	3.4	477	0.5

Table 4. Mean Scores of the Philippines and OECD in Reading Literacy Subscales by Gender

Examining the differences in the national and the OECD averages reveals that the largest difference can be seen in Evaluate and Reflect for both genders. For female students, the difference was 158 points, whereas that for male students was 155 points. In contrast, the smallest difference between the Philippine and OECD averages was found in Locate Information, which is 145 points for female students, and 143 points for male students.

Figure 9 shows that in general, female students performed better than male students in all reading subscales. Specifically, in the process subscale, a 28-point gap between the two averages can be observed in Locate Information and Evaluate and Understand tasks. In the source subscale, the gap is wider in Source – Multiple with a difference of 26 points. Nonetheless, both female and male students performed best in Locate Information with mean scores of 357 and 329, respectively.

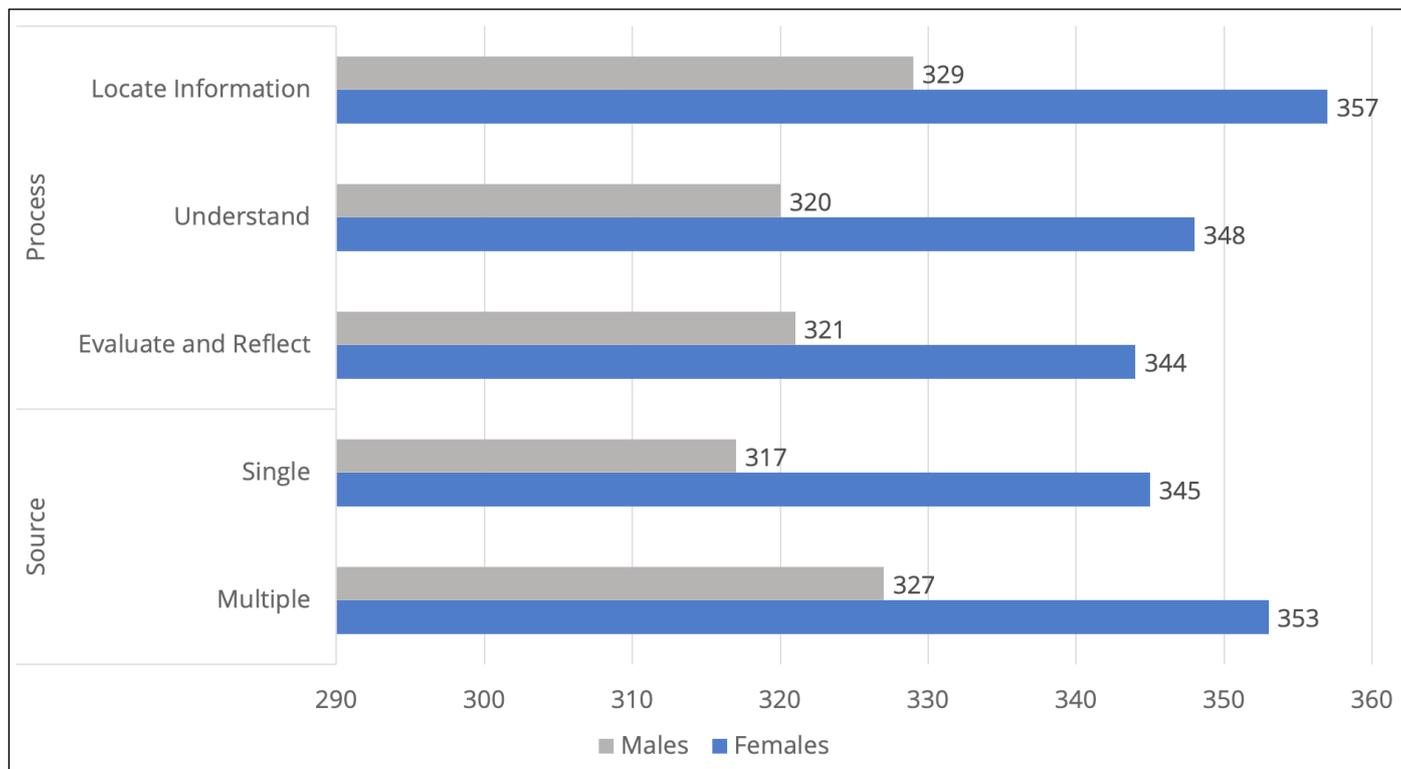


Figure 9. Mean Scores of Filipino students per Reading Literacy Subscale by Gender

The mean scores of female Filipino students across subscales were within the range of Proficiency Level 1a, compared to OECD averages that can be classified as Proficiency Level 3. On the other hand, the mean scores of male Filipino students in all subscales were classified as Proficiency Level 1b, whereas the OECD averages for male students were within Proficiency Level 2.

Performance by stratification variable

This subsection provides more diagnostic information on the Overall Reading Literacy of Filipino students by disaggregating their mean scores by school management, school level, administrative region, and type of community.

School Management

Filipino students from private schools performed better than those from public schools, with the former obtaining 390 points, which was classified as Level 1a, and the latter obtaining 328 points, which was classified as Level 1b. Both mean scores were below the OECD average.

The percentage distribution of Filipino students across proficiency levels by type of School Management is shown in Figure 10.

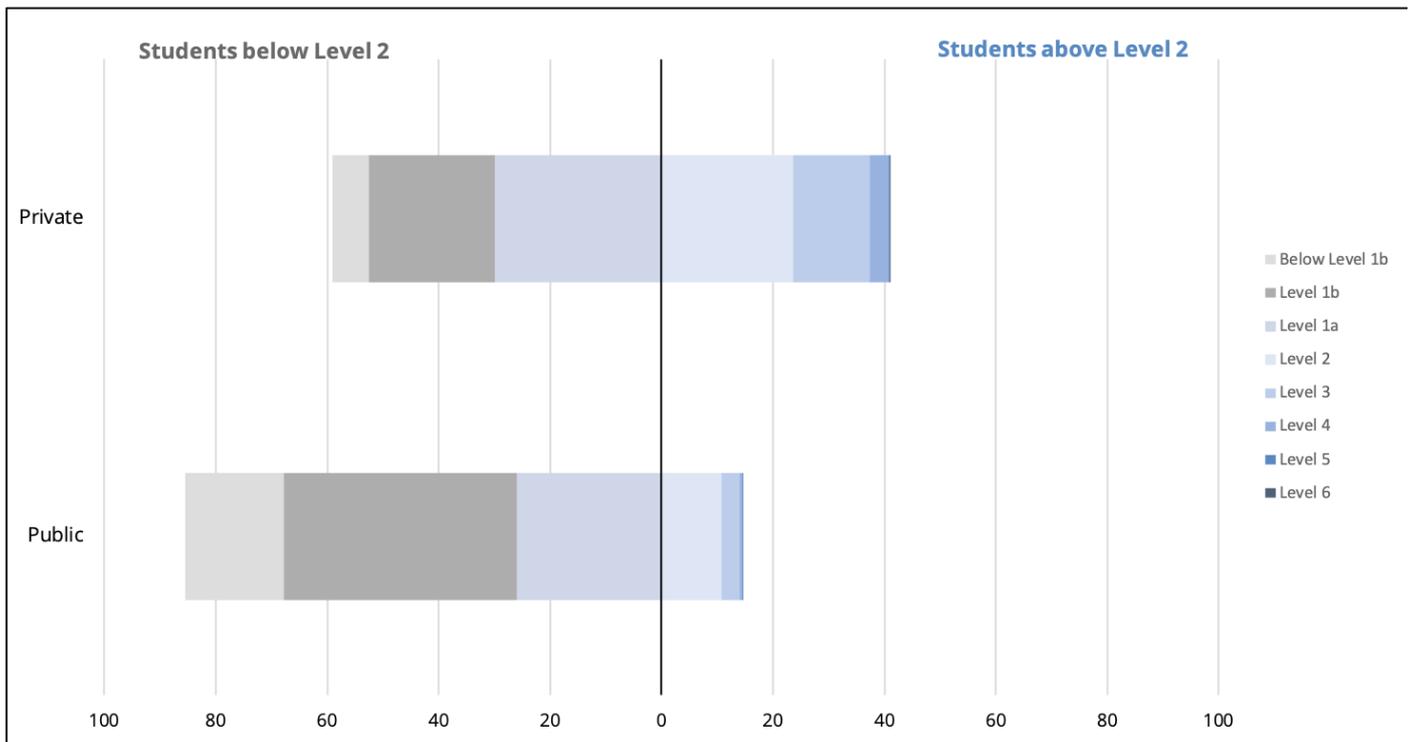


Figure 10. percentage distribution of Filipino students across proficiency levels by type of School Management

More than half (59.04%) of students in private schools and as many as 85.46% of students in public schools did not reach the minimum level of reading proficiency (Level 2).

There were more students in private schools who had relatively higher proficiency levels. For instance, 3.47% of private school students were at Proficiency Level 4, while only 0.57% of students from public schools reached the same. Moreover, 13.65% and 3.17% of students in private and public schools, respectively, belonged to Proficiency Level 3. Similarly, albeit with a smaller gap, 0.21% of students in private schools and 0.02% of students in public schools were at Proficiency Level 5.

Figure 11 shows the mean scores of Filipino students for each Reading Literacy subscale by school management.

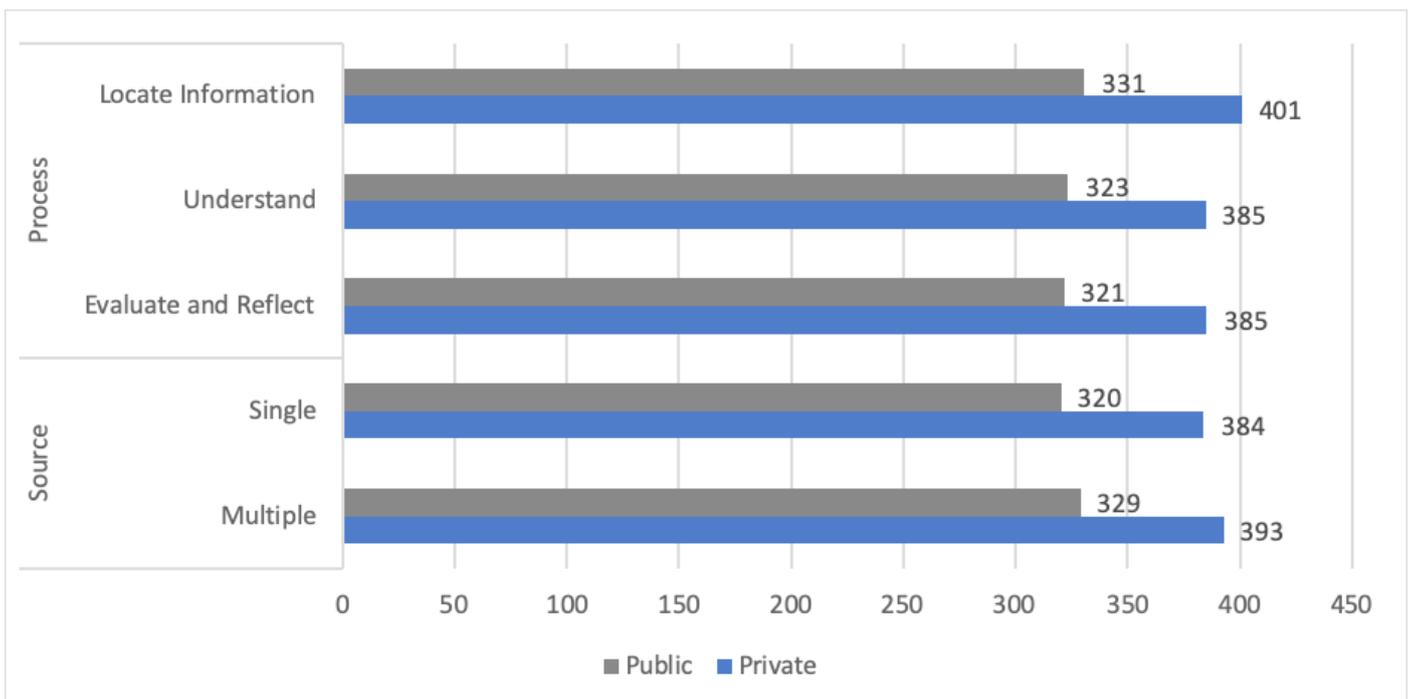


Figure 11. Mean Scores of Filipino students per Reading Literacy Subscale by School Management

For all tasks within both Reading Literacy subscales, students in private schools obtained significantly higher mean scores than those in public schools, with the widest gap in Process -Locate Information tasks (70 points).

School Level

Figure 12 shows the percentage distribution of Filipino students across proficiency levels in Overall Reading Literacy by school level. It shows that the mean Reading Literacy score of SHS students (428 points, at Level 2) was found to be significantly higher than that of JHS students (339 points, at Level 1a). Moreover, only 19.17% of the JHS students reached at least the minimum proficiency level (Level 2) in Overall Reading Literacy, in contrast to the 50.69% of SHS students who reached the same.

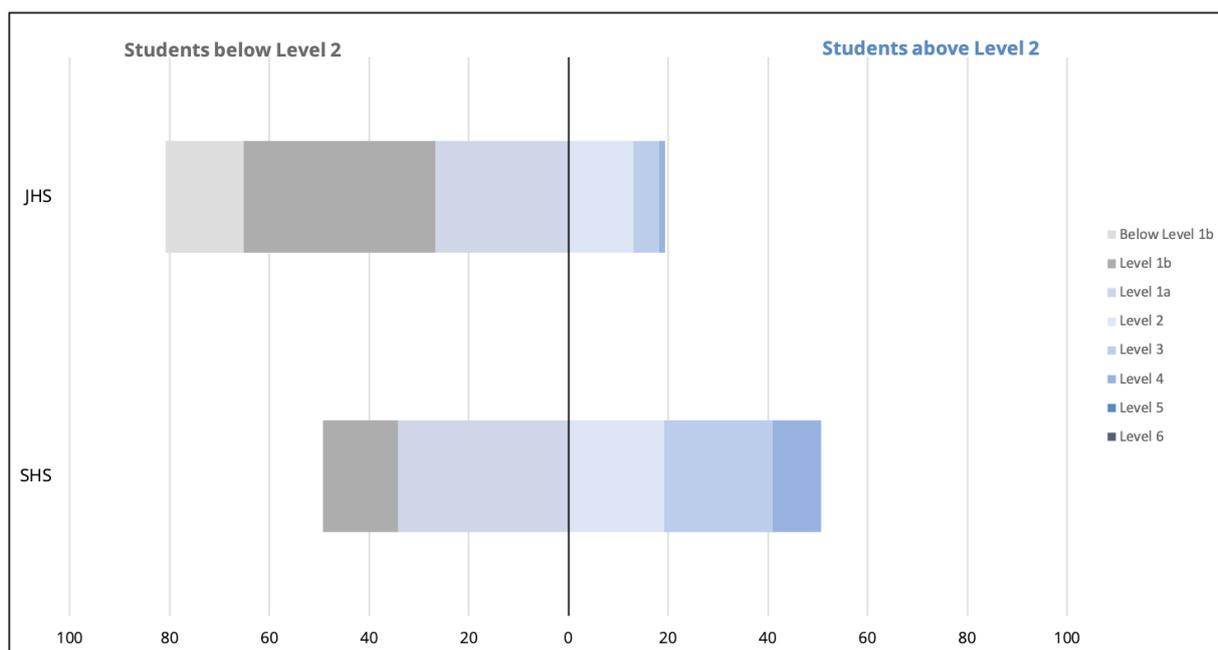


Figure 12. Percentage distribution of Filipino students across proficiency levels of Overall Reading Literacy by School Level

The mean scores of Filipino students across the Reading Literacy subscales by school level are displayed in Figure 13.

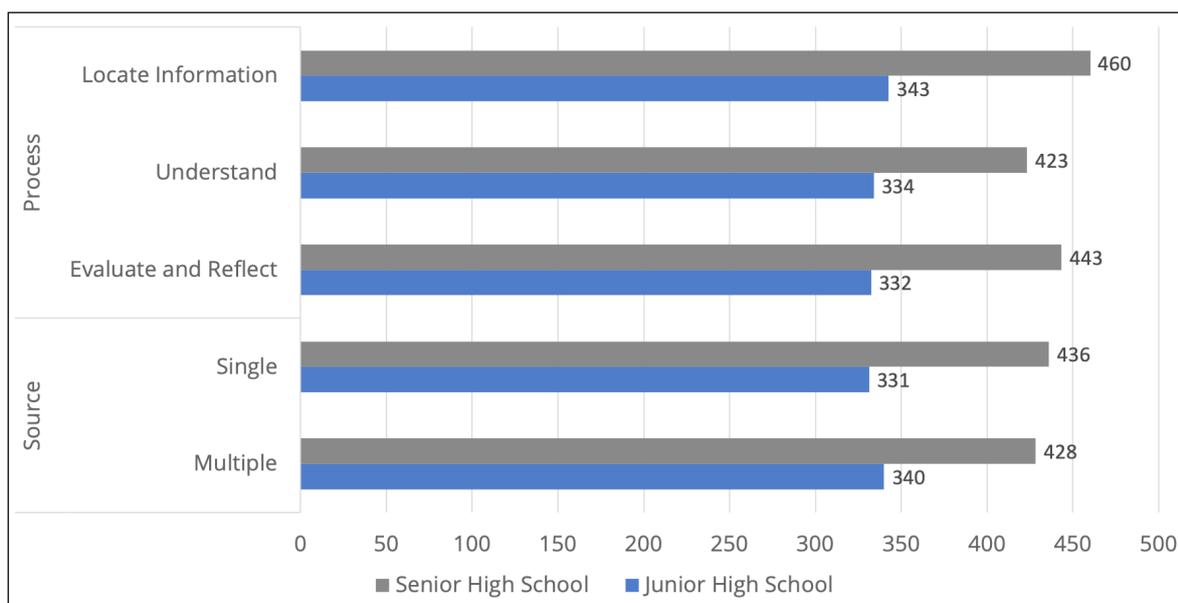


Figure 13. Mean Scores of Filipino students per Reading Literacy Subscale by School Level

On average, Senior High School students achieved significantly higher scores than Junior High School students in all reading subscales, with Senior High School students obtaining mean scores above 400 points in all tasks. Performance of Senior High School students in the process subscale was best in Locate Information

tasks with a mean score of 460 points; on the other hand, for the source subscale, they performed slightly better at Single tasks (436 points) than in Multiple tasks (428 points). For JHS students' performance in the process subscale, they scored best in the Locate information task (343 points), and in the source subscale, better in the Multiple tasks (340 points) than in the Single tasks (331).

Administrative Region

Table 5 provides the mean scores in Overall Reading Literacy by administrative region together with their respective standard errors and confidence intervals.

Administrative Region	Mean	SE	Confidence Interval	
Region 1	322	12.8	279	366
Region 2	335	8.3	307	363
Region 3	341	5.7	322	361
Region 4A	351	7.4	326	376
Region 4B	327	10.0	294	361
Region 5	328	13.2	284	372
Region 6	337	21.4	265	409
Region 7	352	11.1	314	389
Region 8	349	18.0	289	410
Region 9	307	15.2	256	358
Region 10	330	8.1	303	357
Region 11	334	20.5	265	404
Region 12	292	9.7	259	325
NCR	372	10.6	336	408
CAR	351	9.9	317	385
CARAGA	300	16.2	245	355
NIR	337	25.9	250	425

Table 5. Mean Scores in Overall Reading Literacy by Administrative Region

In Overall Reading Literacy, students from National Capital Region (NCR), Region 7 (Central Visayas), and Region 11 (Southern Mindanao) obtained the highest scores in Luzon, Visayas, and Mindanao island groups, respectively. Furthermore, there were six regions that achieved a mean score higher than the national average (340 points). These were Region 3 (Central Luzon), Region 4A (CALABARZON), and Region 7 (Central Visayas), Region 8 (Eastern Visayas), National Capital Region (NCR), and Cordillera Administrative Region (CAR).

Based on their mean scores, students from Region 1 (Ilocos), Region 4B (MIMAROPA), Region 5 (Bicol), Region 9 (Western Mindanao), Region 10 (Northern Mindanao), Region 12 (Central Mindanao), and CARAGA Administrative Region, were classified as Proficiency Level 1b. The rest of the regions achieved mean scores within Proficiency Level 1a.

Table 6 lists the percentage distribution of students across proficiency levels in Overall Reading Literacy for the 17 administrative regions.

Administrative Region	Proficiency Level (%)							
	1c and below	1b	1a	2	3	4	5	6
Region 1	19.23	42.81	26.94	7.60	3.20	0.23	—	—
Region 2	15.68	39.14	28.11	13.74	3.32	—	—	—
Region 3	13.25	40.10	26.97	14.24	4.81	0.62	—	—
Region 4A	10.59	36.38	30.55	15.94	5.30	1.10	0.13	0.01
Region 4B	16.26	44.49	25.35	11.4	1.97	0.45	0.09	—
Region 5	19.66	39.64	25.04	11.33	3.94	0.38	—	—
Region 6	19.32	37.08	25.4	9.39	6.17	2.51	0.11	—
Region 7	11.16	37.76	27.16	15.39	6.72	1.70	0.11	—
Region 8	14.81	34.23	26.26	16.78	6.71	1.22	—	—
Region 9	26.44	41.55	24.93	6.08	1.00	—	—	—
Region 10	15.66	40.81	28.44	13.08	2.00	—	—	—
Region 11	16.58	40.19	24.27	14.58	3.67	0.71	—	—
Region 12	33.97	44.51	16.67	3.88	0.98	—	—	—
NCR	8.56	29.66	29.39	19.65	10.15	2.51	0.08	—
CAR	10.88	34.49	31.4	16.61	5.77	0.84	—	—
CARAGA	27.78	46.77	20.68	4.24	0.48	0.04	—	—
NIR	17.27	41.77	24.09	7.33	6.41	3.04	0.10	—

— No student reached this level.

Table 6. Percentage distribution of Filipino students across proficiency levels in Overall Reading Literacy by Administrative Region

The percentage of low performing students (i.e., with Proficiency Levels below 2) ranged from 67.61% (National Capital Region) to 95.23% (CARAGA Administrative Region). The region with the largest percentage of students with Proficiency Level 1c and below was Region 12 (Central Mindanao) with 33.97%, while National Capital Region obtained the smallest percentage at 8.56%.

There were few students who reached at least Proficiency Level 4. Negros Island Region (NIR) obtained the highest percentage (3.14%) of these students, followed by Region 6 (Western Visayas) and National Capital Region (NCR) with 2.62% and 2.59%, respectively.

The mean scores of each administrative region in Locate Information can be found in Table 7.

Administrative Region	Mean Score	SE	Confidence Interval	
Region 1	324	18.0	263	385
Region 2	335	10.2	301	370
Region 3	344	6.7	321	367
Region 4A	358	8.7	328	387
Region 4B	328	12.4	286	370
Region 5	325	15.0	275	376
Region 6	339	22.0	264	413
Region 7	366	11.3	328	404
Region 8	345	20.9	275	416
Region 9	301	23.8	220	381
Region 10	330	11.7	290	369
Region 11	338	20.9	267	408
Region 12	298	14.2	250	346
NCR	385	11.9	344	425
CAR	357	13.0	313	401
CARAGA	291	17.9	230	351
NIR	338	27.0	247	430

Table 7. Mean Scores in Locate Information Tasks by Administrative Region

Region 3 (Central Luzon), Region 4A (CALABARZON), Region 7 (Central Visayas), Region 8 (Eastern Visayas), National Capital Region (NCR), and Cordillera Administrative Region (CAR) obtained higher mean scores than the national average in Locate Information tasks.

The Understand mean scores across the 17 administrative regions are presented in Table 8.

Administrative Region	Mean Score	SE	Confidence Interval	
Region 1	318	14.5	269	367
Region 2	326	8.5	297	354
Region 3	335	5.9	315	354
Region 4A	346	7.4	321	371
Region 4B	319	8.1	292	347
Region 5	319	14.4	271	368
Region 6	334	21.4	262	406
Region 7	352	8.5	323	380
Region 8	340	19.0	276	404
Region 9	300	15.5	247	352
Region 10	323	9.5	291	355
Region 11	328	16.3	273	383
Region 12	293	9.5	261	325
NCR	369	9.9	335	402
CAR	345	7.8	319	372
CARAGA	297	14.9	246	347
NIR	334	25.7	248	421

Table 8. Mean Scores in Understand Tasks by Administrative Region

Students from Regions 3 (Central Luzon), Region 4A (CALABARZON), Region 7 (Central Visayas), Region 8 (Eastern Visayas), National Capital Region (NCR), and Cordillera Administrative Region (CAR) attained mean scores higher than the national average.

Although the mean scores of most regions in Understand tasks were not statistically different from each other, Region 12 (Central Mindanao) scored significantly lower than the National Capital Region (NCR).

Table 9 shows the mean scores in Evaluate and Reflect tasks across the 17 administrative regions.

Administrative Region	Mean Score	SE	Confidence Interval	
Region 1	316	17.6	257	376
Region 2	336	9.8	303	369
Region 3	327	7.6	301	353
Region 4A	346	9.0	315	376
Region 4B	321	9.0	291	351
Region 5	322	16.9	265	379
Region 6	329	22.1	255	404
Region 7	344	11.3	306	382
Region 8	341	20.4	272	410
Region 9	304	15.4	252	356
Region 10	315	7.9	288	342
Region 11	326	20.5	257	395
Region 12	290	13.6	244	336
NCR	369	11.5	330	408
CAR	347	10.3	312	382
CARAGA	297	15.5	245	349
NIR	333	28.0	238	427

Table 9. Mean Scores in Evaluate and Reflect Tasks by Administrative Region

Region 2 (Cagayan Valley), Region 4A (CALABARZON), Region 7 (Central Visayas), Region 8 (Eastern Visayas), National Capital Region (NCR), and Cordillera Administrative Region (CAR) obtained mean scores in Evaluate and Reflect tasks higher than the national mean score, 333 points.

Table 10 lists the Source – Single mean scores for the 17 administrative regions.

Administrative Region	Mean Score	SE	Confidence Interval	
Region 1	311	16.4	307	366
Region 2	325	9.0	321	355
Region 3	330	6.0	326	350
Region 4A	345	8.0	342	372
Region 4B	319	8.6	316	348
Region 5	320	15.3	317	372
Region 6	329	21.9	326	403
Region 7	349	10.0	346	383
Region 8	337	20.3	333	405
Region 9	299	17.8	296	359
Region 10	319	9.1	316	350
Region 11	328	18.8	325	392
Region 12	287	14.6	284	336
NCR	367	11.0	363	404
CAR	346	6.9	342	369
CARAGA	288	18.9	285	352
NIR	331	29.4	327	430

Table 10. Mean Scores in Source – Single by Administrative Region

Region 4A (CALABARZON), Region 7 (Central Visayas), Region 8 (Eastern Visayas), National Capital Region (NCR), and Cordillera Administrative Region (CAR) performed above the Source – Single national average of 331 points.

The mean score of National Capital Region (NCR) in Source – Single was significantly higher than that of Region 2 (Cagayan Valley), Region 3 (Central Luzon), Region 4B (MIMAROPA), Region 10 (Northern Mindanao), Region 12 (Central Mindanao), and CARAGA Administrative Region (CARAGA). Furthermore, the mean score of Region 12 (Central Mindanao) was significantly lower than Region 4A (CALABARZON), Region 7 (Central Visayas), and Cordillera Administrative Region (CAR).

The mean scores in Source – Multiple for the 17 regions are presented in Table 11.

Administrative Region	Mean Score	SE	Confidence Interval	
Region 1	327	14.4	278	375
Region 2	332	9.4	300	363
Region 3	342	6.5	320	364
Region 4A	352	7.6	326	378
Region 4B	325	7.9	298	352
Region 5	324	14.3	275	372
Region 6	340	20.8	270	411
Region 7	357	9.3	326	389
Region 8	343	19.1	279	408
Region 9	303	16.9	246	360
Region 10	327	8.7	298	356
Region 11	331	18.2	270	392
Region 12	297	9.4	265	329
NCR	377	10.4	342	412
CAR	351	9.5	319	383
CARAGA	300	13.7	254	346
NIR	340	24.5	258	423

Table 11. Mean Scores in Source – Multiple by Administrative Region

Region 4A (CALABARZON), Region 7 (Central Visayas), National Capital Region (NCR), and Cordillera Administrative Region (CAR) obtained mean scores above the national mean score of 340 points. Moreover, National Capital Region (NCR) students significantly performed better than Region 12 (Central Mindanao) students in terms of average performance in Source – Multiple, whereas the rest of the regions did not have significant differences in their mean scores.

Type of Community

Students residing in urban communities obtained an average of 355 points. This Reading Literacy score was significantly higher than those of the students living in rural communities, which was 313 points. In general, students from urban communities were at Proficiency Level 1a, whereas those from rural communities were at Proficiency Level 1b.

The percentage distribution of Filipino students across proficiency levels in Overall Reading Literacy by type of community is presented in Figure 14.

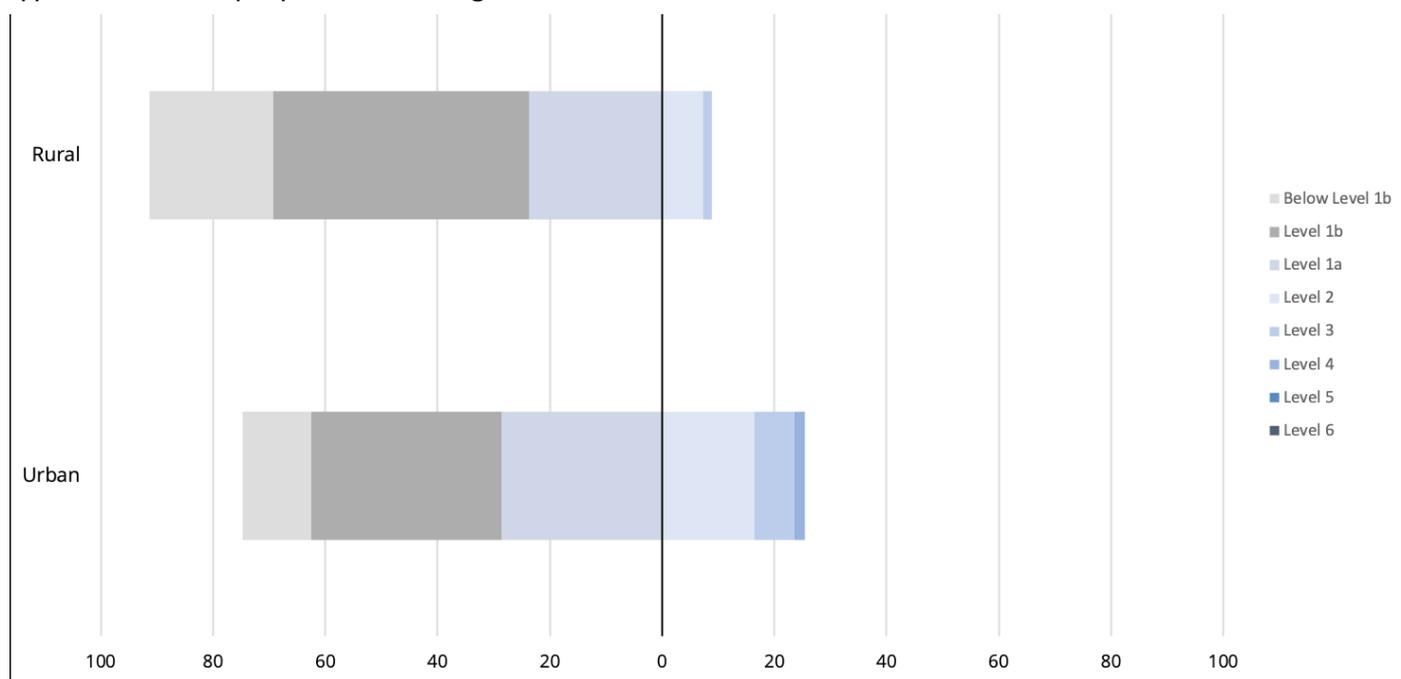


Figure 14. Percentage distribution of Filipino students across proficiency levels in Overall Reading Literacy by Type of Community

For rural communities, 8.69% of the students reached at least Proficiency Level 2. Of those that did not reach the minimum proficiency level (Level 2), 21.96% were classified as Level 1c and below, and 45.76% as Level 1b. Only 0.11% of the students from rural communities achieved a Proficiency Level of 4. None reached Proficiency Levels 5 and 6.

On the other hand, about one-fourth (25.33%) of the students from urban communities obtained the minimum proficiency level in Reading Literacy, and 1.65% and 0.08% of the students attained Proficiency Levels 4 and 5, respectively.

Figure 15 shows the average performance of Filipino students in the Reading Literacy subscales for each type of community.

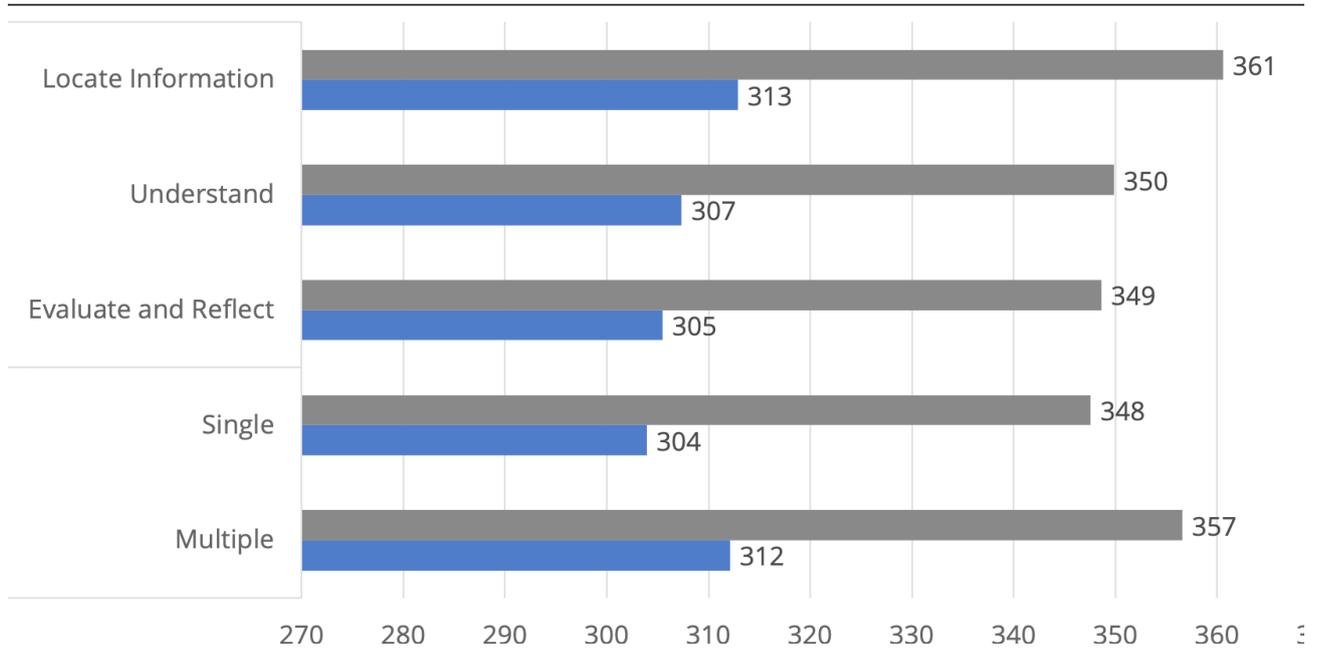


Figure 15. Mean Scores of the Philippines per Reading Literacy Subscale by Type of Community

Students residing in urban communities significantly performed better than those from rural communities in all subscales.

Mathematical Literacy

How does PISA 2018 assess Mathematical Literacy?

Mathematics Literacy was assessed as the major domain in the 2003 and 2012 cycles of PISA. Its analytical framework is captured by Figure 16.

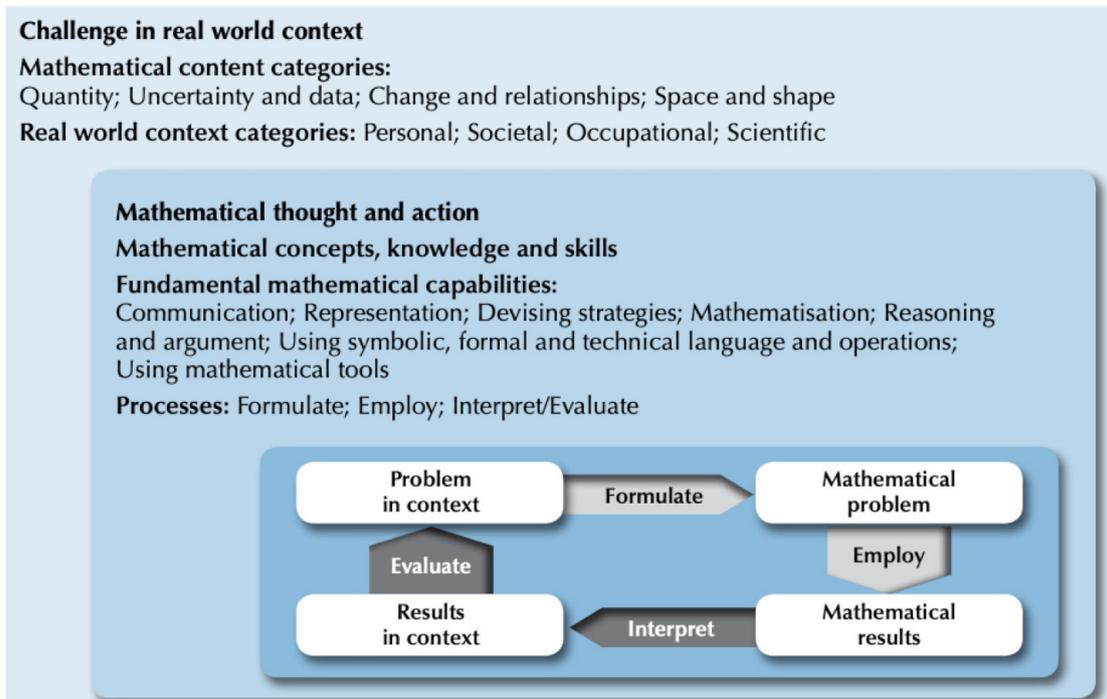


Figure 16. Mathematics Literacy Framework from the PISA 2012 International Report

PISA 2018 assessed Mathematical Literacy as a minor domain, defining six proficiency levels as shown in Table 12.

Table 12. Description of the Proficiency Scale of Mathematical Literacy

Level	Min.	Characteristics of Task
6	669	At Level 6, students can conceptualize, generalize and utilize information based on their investigations and modelling of complex problem situations, and can use their knowledge in relatively non-standard contexts. They can link different information sources and representations and flexibly translate among them. Students at this level are capable of advanced mathematical thinking and reasoning. These students can apply this insight and understanding, along with a mastery of symbolic and formal mathematical operations and relationships, to develop new approaches and strategies for attacking novel situations. Students at this level can reflect on their actions and can formulate and precisely communicate their actions and reflections regarding their findings, interpretations, arguments, and the appropriateness of these to the original situation.

5	607	At Level 5, students can develop and work with models for complex situations, identifying constraints and specifying assumptions. They can select, compare and evaluate appropriate problem-solving strategies for dealing with complex problems related to these models. Students at this level can work strategically using broad, well-developed thinking and reasoning skills, appropriate linked representations, symbolic and formal characterizations, and insight pertaining to these situations. They begin to reflect on their work and can formulate and communicate their interpretations and reasoning.
4	545	At Level 5, students can develop and work with models for complex situations, identifying constraints and specifying assumptions. They can select, compare and evaluate appropriate problem-solving strategies for dealing with complex problems related to these models. Students at this level can work strategically using broad, well-developed thinking and reasoning skills, appropriate linked representations, symbolic and formal characterizations, and insight pertaining to these situations. They begin to reflect on their work and can formulate and communicate their interpretations and reasoning.
3	482	At Level 3, students can execute clearly described procedures, including those that require sequential decisions. Their interpretations are sufficiently sound to be a base for building a simple model or for selecting and applying simple problem-solving strategies. Students at this level can interpret and use representations based on different information sources and reason directly from them. They typically show some ability to handle percentages, fractions and decimal numbers, and to work with proportional relationships. Their solutions reflect that they have engaged in basic interpretation and reasoning.
2	420	At Level 2, students can interpret and recognize situations in contexts that require no more than direct inference. They can extract relevant information from a single source and make use of a single representational mode. Students at this level can employ basic algorithms, formulae, procedures or conventions to solve problems involving whole numbers. They are capable of making literal interpretations of the results.
1	358	At Level 1, students can answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined. They are able to identify information and to carry out routine procedures according to direct instructions in explicit situations. They can perform actions that are almost always obvious and follow immediately from the given stimuli.

What can Filipino students do in mathematics?

This section provides the average scores and the proficiency levels of the Filipino students in Mathematical Literacy. Both aggregated and disaggregated summary statistics describing the performance of the students in Mathematical Literacy are presented in this section.

Overall Performance

Figure 17 shows the national average scores of participating ASEAN countries vis-à-vis the OECD average in Mathematical Literacy.

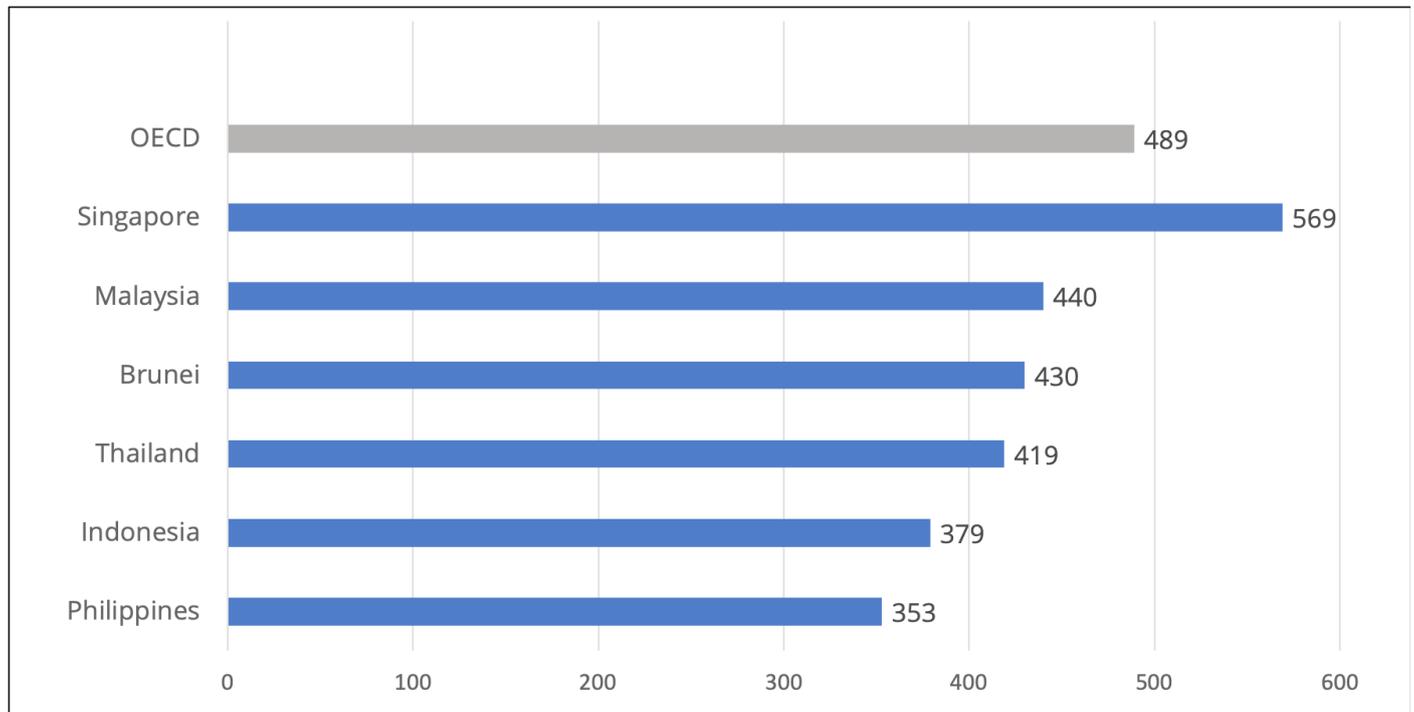


Figure 17. Mean Score of ASEAN and OECD in Mathematical Literacy

Filipino students achieved an average of 353 points in Mathematical Literacy; this is significantly lower than the OECD average (489 points) and is classified as below Level 1 proficiency. As discussed in the PISA 2018 International report (OECD, 2019):

The PISA mathematics test included too few tasks of the appropriate difficulty that would help describe an additional level of proficiency below Level 1. However, based on the few PISA 2012 mathematics items whose difficulty lies below Level 1 (four of which were also included in the PISA 2018 mathematics assessment), students who score below Level 1, but not too far from it, can be expected to perform some direct and straightforward mathematical tasks. These include reading a single value from a well-labelled chart or table, where the labels on the chart match the words in the stimulus and question, so that the selection criteria are clear and the relationship between the chart and the aspects of the context depicted are evident. They may also be able to perform simple arithmetic calculations with whole numbers by following clear and well-defined instructions.

In contrast, a typical student from OECD countries would be in Proficiency Level 3 and can already execute clearly described procedures, including those that require sequential decisions, with sufficiently sound interpretations.

Among the ASEAN countries that participated in PISA 2018, Filipino students scored closest to Indonesian students but significantly lower by 26 points. On the other hand, Singapore was the only participating ASEAN country that attained an average Mathematical Literacy score higher than the OECD average.

Figure 18 shows the percentage distribution of Filipino students across Mathematical Literacy proficiency levels vis-a-vis the distribution of students in OECD and in other participating ASEAN countries.

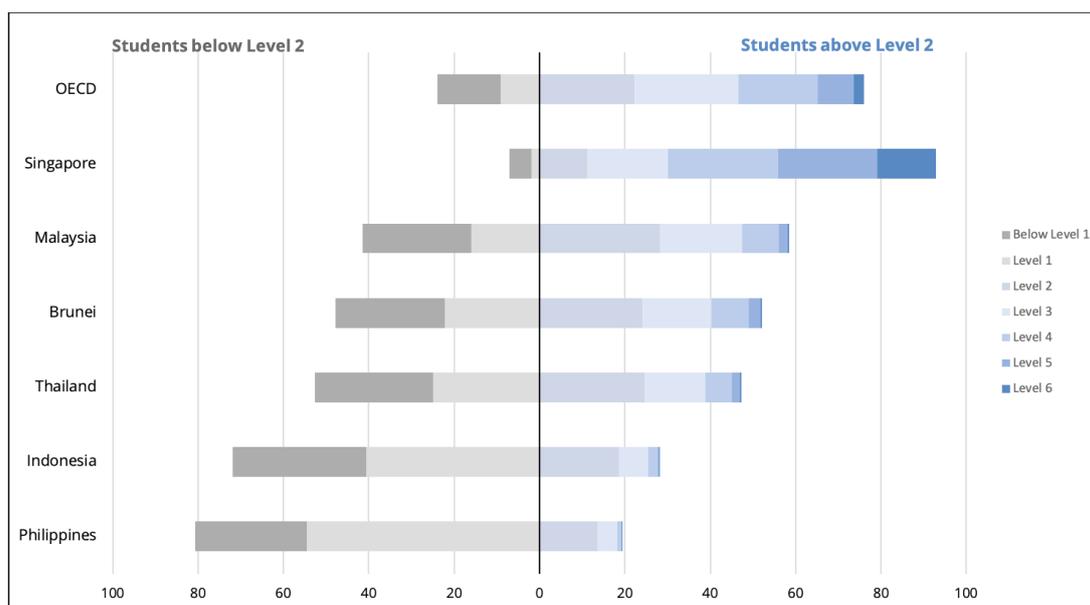


Figure 18. Distribution of the Filipino Students in Overall Mathematical Literacy by Proficiency Level

Majority of Filipino students (80.70%) were classified as having Proficiency Levels below Level 2, with 54.4% below Level 1 proficiency.

For the Philippines, only 1 out of 5 students (19.7%) attained Proficiency Levels 2 to 4. These students can employ basic algorithms, formulae, procedures or conventions to solve problems involving whole numbers.

Only 0.01% of students performed within Proficiency Levels 5 to 6. They can develop and work with models for complex situations, identifying constraints and specifying assumptions. They can also apply this insight and understanding, along with a mastery of symbolic and formal mathematical operations and relationships, to develop new approaches and strategies for attacking novel situations.

Performance by gender

Figure 19 presents the mean scores of OECD participating countries and the Philippines by gender.

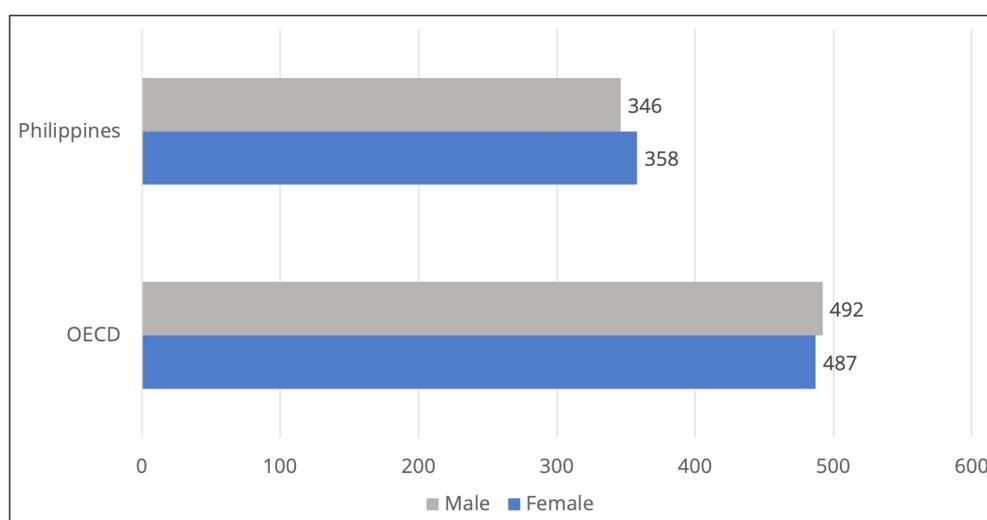


Figure 19. Mean Scores of the Philippines vis-à-vis OECD in Mathematical Literacy by Gender

In the Philippines, the average Mathematical Literacy score of female students was 358 points, significantly lower than the average score of OECD female students (487 points). Similarly, the mean score of male students from the Philippines (346 points) was significantly lower than the mean score of male students

from OECD (492 points).

The average score of female students were classified as Proficiency Level 1, while the male average score fell below Level 1 proficiency. No significant difference was found between the mean scores of female and male students from OECD. On the other hand, female students performed significantly better than male students in the Philippines.

Figure 20 illustrates the distribution of Filipino students across proficiency levels in Mathematical Literacy by gender.

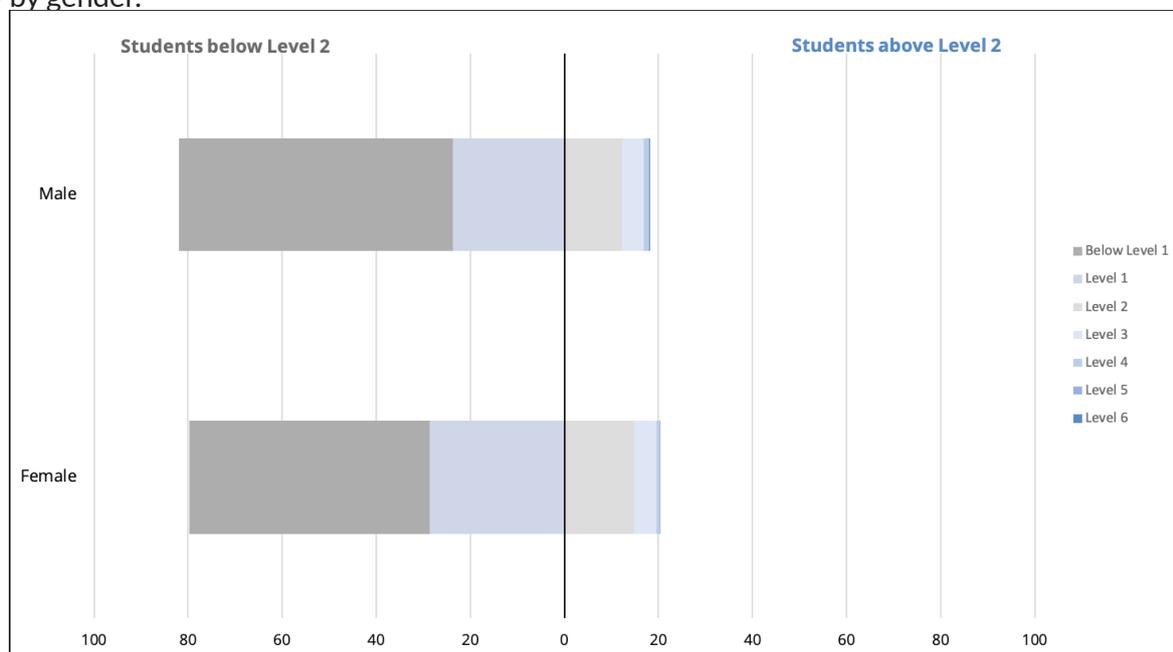


Figure 20. Percentage distribution of Filipino students across proficiency levels in Mathematical Literacy by Gender

More than half of male (58.23%) and female (51.09%) students performed below Level 1 proficiency. Meanwhile, 23.72% of male students and 28.54% of female students were at Proficiency Level 1. More male students in the Philippines were classified as below Level 1 proficient than female students; moreover, there were more female students in Levels 1 to 3 of the mathematical proficiency scale.

On the other hand, the proportion of male students in the Proficiency Levels 4 to 6 was higher than the proportion of female students. For instance, the high performers (i.e., those with Proficiency Levels 5 to 6) of male students comprised 0.11% – just slightly higher than the 0.05% of female students.

Performance by stratification variable

This subsection provides more information in the Mathematical Literacy of Filipino students by disaggregating their average scores by school management, school level, administrative region, and type of community.

School Management

The mean score for Mathematical Literacy of students in private schools was 395 points, significantly higher than the mean score of students in public schools, 343 points.

The average score of students from private schools reached Proficiency Level 1, while the public school average score fell below Level 1 proficiency. Hence, a typical student from a private school can answer straightforward math problems, while an average student from a public school may have difficulty doing the same tasks.

The percentage distribution of Filipino students across proficiency levels in Mathematical Literacy by type of school management is shown in Figure 21.

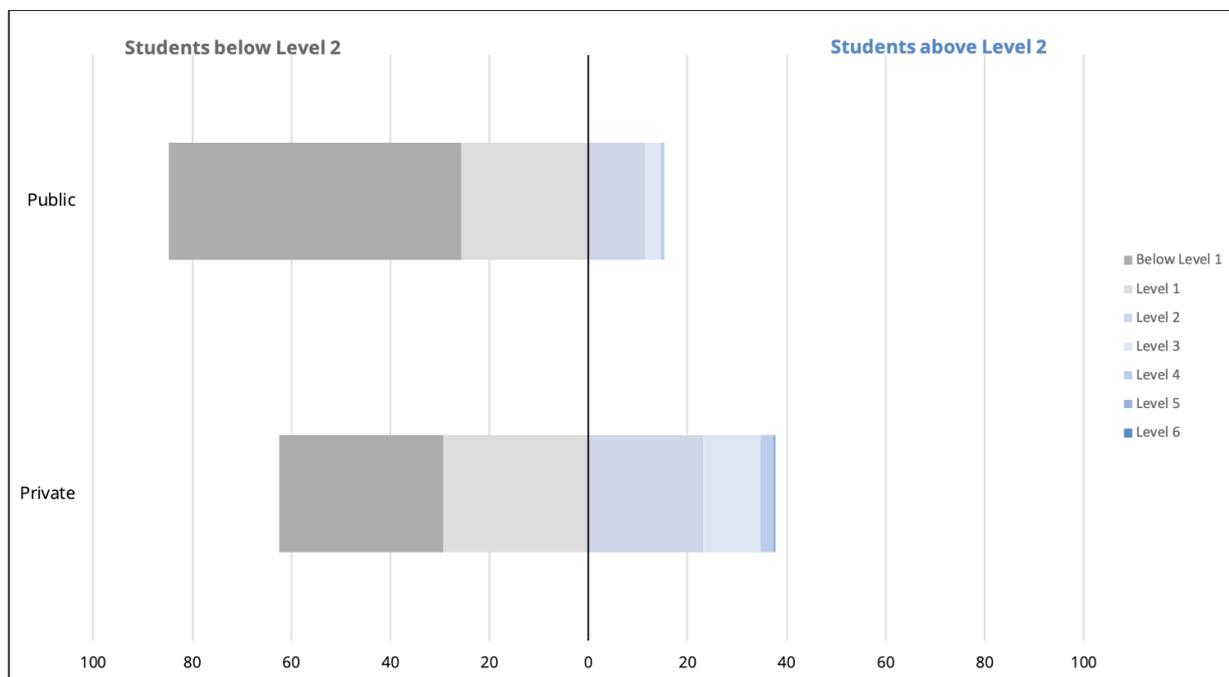


Figure 21. Percentage distribution of Filipino students across proficiency levels in Mathematical Literacy by Type of School Management

Majority of the students in public schools (59.22%) and one-third of the students in private schools (33.18%) were below Level 1 proficiency. Meanwhile, 29.28% of students in private schools reached Proficiency Level 1, slightly higher than the 25.60% of students in public schools.

Notably, the proportion of Proficiency Level 2 students in private schools (23.29%) was more than twice of students in public schools (11.45%). In addition, there were nearly four times as many students in private schools (11.49%) who reached Proficiency Level 3 compared to students in public schools (3.14%). On the other hand, high performers (i.e., within Proficiency Levels 5 to 6) were found to be few in both public (0.03%) and private (0.30%) schools.

School Level

The average Mathematical Literacy score of SHS students was 448 points, significantly higher than the average of 352 points attained by the JHS students.

The mean score of JHS students fell below Level 1 mathematics proficiency, whereas the mean score of SHS students reached Proficiency Level 2. Hence, SHS students can generally interpret and recognize situations in contexts that require no more than direct inference, while an average JHS student still struggle to answer basic and straightforward mathematical problems.

Figure 22 illustrates the percentage distribution of proficiency level of Filipino students in overall Mathematical Literacy by school level.

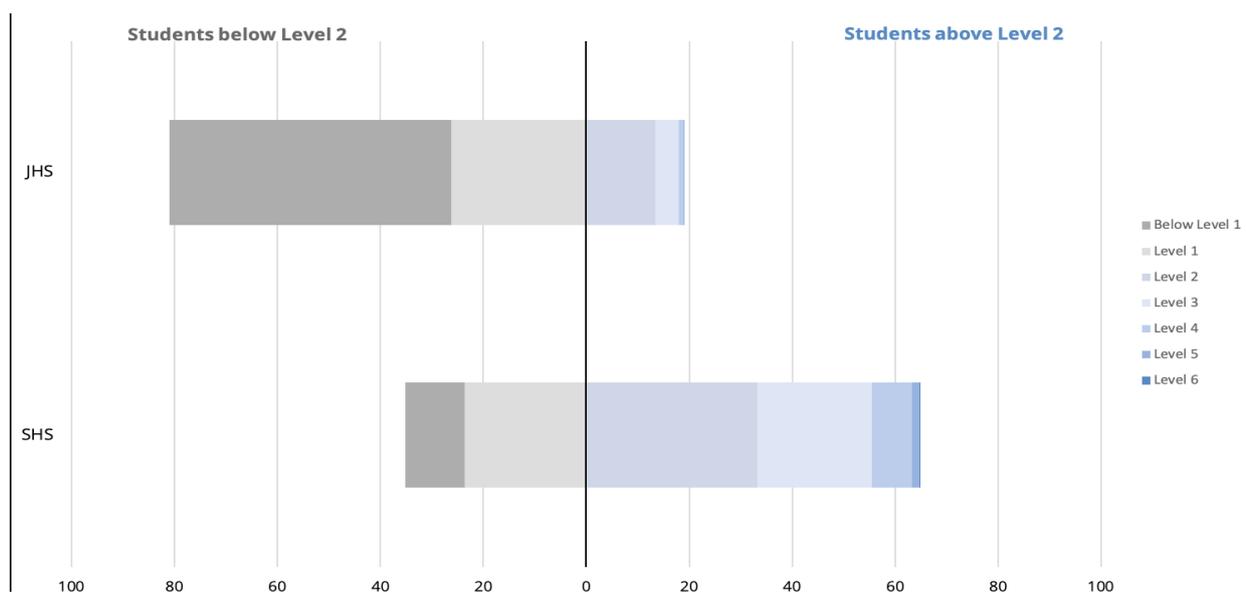


Figure 22. Distribution of Proficiency Level of Students in Mathematical Literacy by School Level

Majority of JHS students (54.74%) fell below Level 1 proficiency. On the other hand, majority of SHS students reached Proficiency Level 2 in Mathematical Literacy.

Administrative Region

Table 13 shows the average scores in Mathematical Literacy by administrative region including their respective standard errors and confidence intervals.

Administrative Region	Mean Score	SE	Confidence Interval	
Region 1	343	15.1	313	373
Region 2	353	8.1	337	369
Region 3	357	6.6	344	370
Region 4A	367	7.4	352	382
Region 4B	338	15.3	308	368
Region 5	338	14.4	310	366
Region 6	349	21.7	306	391
Region 7	363	10.7	342	384
Region 8	346	17.5	312	381
Region 9	327	17.9	292	362
Region 10	342	10.2	322	362
Region 11	344	15.8	313	375
Region 12	306	14.4	278	334
NCR	385	8.2	369	401
CAR	366	10.8	345	387
CARAGA	306	14.4	278	335
NIR	344	25.5	294	394

Table 13. Mean Scores in Mathematical Literacy by Administrative Region

National Capital Region (NCR) achieved the highest average Mathematical Literacy score across the country. Region 7 (Central Visayas) and Region 11 (Southern Mindanao) attained the highest average scores in Visayas and Mindanao, respectively.

Region 3 (Central Luzon), Region 4A (CALABARZON), Region 7 (Central Visayas), National Capital Region (NCR), and Cordillera Administrative Region (CAR) achieved average scores higher than the national average of 353 points. Excluding Region 3 (Central Luzon), these regions were at Proficiency Level 1. The rest of the regions fell below Level 1 proficiency.

Table 14 presents the percentage distribution of the proficiency profile of Filipino students in Mathematical Literacy across the 17 administrative regions.

Administrative Region	Proficiency Level (%)						
	Below 1	1	2	3	4	5	6
Region 1	60.63	26.68	8.60	3.73	0.36	-	-
Region 2	52.50	26.47	16.66	4.34	0.03	-	-
Region 3	52.20	27.49	14.45	4.78	1.02	0.05	-
Region 4A	45.72	31.84	16.35	5.00	0.98	0.09	0.02
Region 4B	60.56	25.92	11.47	1.74	0.32	-	-
Region 5	61.67	23.32	10.20	4.12	0.39	-	-
Region 6	58.21	24.03	9.41	5.30	2.74	0.31	-
Region 7	50.08	27.69	15.62	5.00	1.32	0.29	-
Region 8	57.85	23.28	12.57	5.58	0.69	0.03	-
Region 9	67.05	22.60	8.68	1.84	0.07	-	-
Region 10	60.14	26.87	10.90	1.92	0.17	-	-
Region 11	59.16	25.99	11.11	3.51	0.23	-	-
Region 12	78.18	16.52	4.71	0.53	0.06	-	-
NCR	36.85	30.07	22.71	8.72	1.55	0.09	-
CAR	46.98	26.52	19.61	6.04	0.85	-	-
CARAGA	79.15	15.51	4.86	0.40	0.08	-	-
NIR	62.16	20.61	9.80	5.37	1.89	0.16	-

— No student reached this level.

Table 14. Distribution of the Proficiency Level of Students in Mathematical Literacy by Administrative Region

National Capital Region (NCR) had the least percentage of students with proficiency levels below 2 (73.07%) and the highest percentage of students within Proficiency Levels 2 to 4 (32.98%). In contrast, Region 12 (Central Mindanao) had the least percentage of students within Proficiency Levels 2 to 4 at 5.30%, and the largest percentage of students with proficiency levels below 2 (94.70%). Meanwhile, CARAGA Administrative Region (CARAGA) had the largest percentage of students below Level 1 proficiency at 79.15%.

High performers (i.e., within Proficiency Level 5 and 6) were rare across all regions; Region 6 (Western Visayas) had the most with 0.31%, followed by Region 7 (Central Visayas) at 0.29%. Additionally, Region 6 (Western Visayas) had the highest share of Proficiency Level 4 students at 2.74%. These students can work effectively with explicit models for complex concrete situations that may involve constraints or call for making assumptions.

Type of Community

The mean Mathematical Literacy score of students in urban communities was 365 points (below Level 1), significantly higher than the mean score of students from rural communities, 329 points (Level 1).

The percentage distribution of the proficiency level of Filipino students in Mathematical Literacy by type of community is shown in Figure 23.

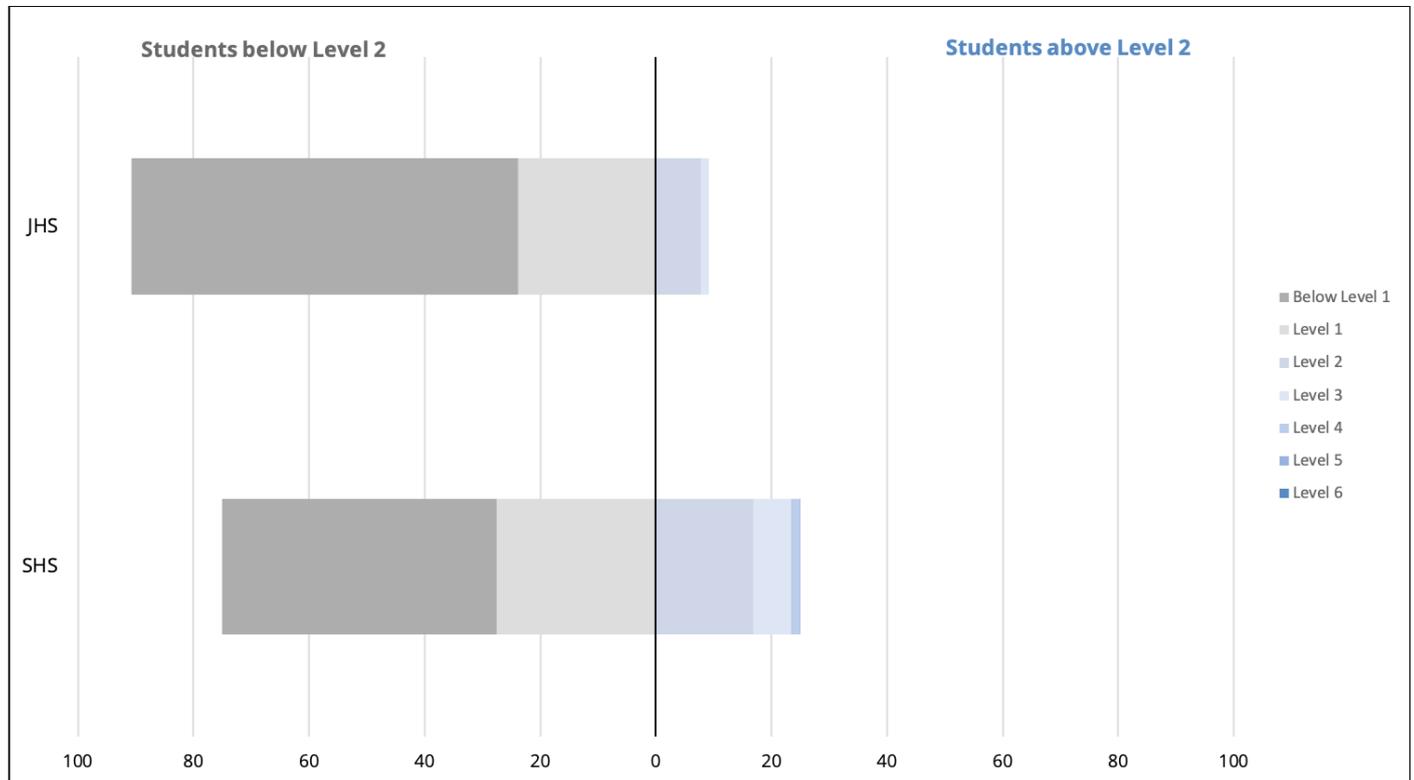


Figure 23. Distribution of Mathematics Proficiency Level by Type of Community

The proportion of students within Proficiency Levels 1 to 5 was higher for those in urban communities. Notably, the proportion of Proficiency Level 3 students in urban communities (6.53%) was nearly five times of those in rural communities (1.33%). For Proficiency Level 2, the proportion of students in urban communities (16.86%) was more than twice of those in rural communities (7.80%).

Approximately two-thirds of students in rural communities (66.87%) and nearly one-half of students in urban communities (47.51%) were classified as below Level 1 proficient. None of the students in rural communities and only 0.12% of students in urban communities attained at least Proficiency Level 5 in Mathematical Literacy.

Scientific Literacy

How does PISA 2018 assess Scientific Literacy?

Scientific Literacy was assessed as the major domain in the 2000 and 2009 cycles of PISA. Its analytical framework is captured by Figure 24.

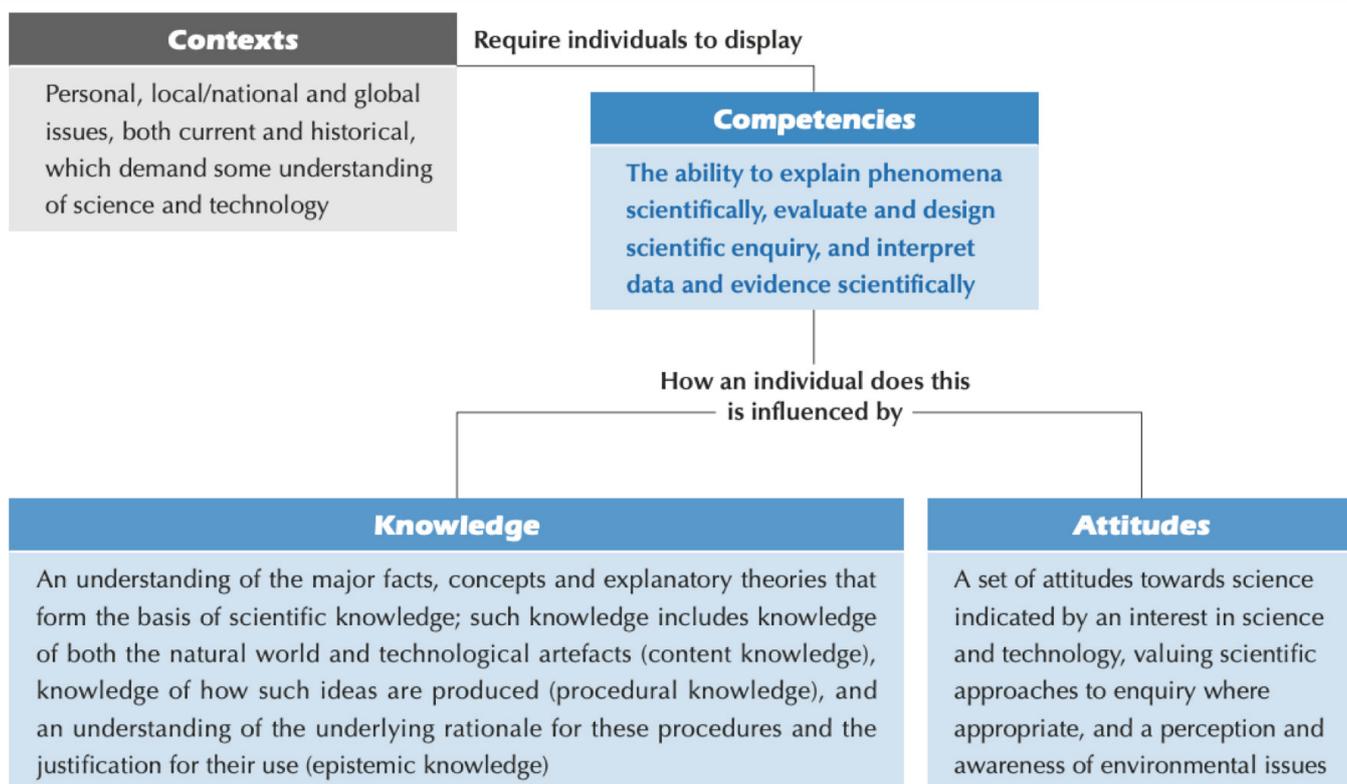


Figure 24. Science Literacy Framework as discussed in the PISA 2015 International Report

In order to compare student achievement across the world, PISA 2018 describes what students at different levels of attainment can do. There are seven proficiency levels to assess Scientific Literacy, detailed in Table 15 below.

Table 15. Description of the Proficiency Scale of Scientific Literacy

Level	Minimum Score	Characteristics of Tasks
6	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	633	<p>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.</p>
4	559	<p>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, 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.</p>
3	484	<p>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.</p>
2	410	<p>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.</p>
1a	335	<p>At Level 1a, students are able to use basic or everyday content and procedural knowledge to recognize or identify explanations of simple scientific phenomenon. 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.</p>
1b	260	<p>At Level 1b, students can use basic or everyday scientific knowledge to recognize aspects of familiar or simple phenomenon. They are able to identify simple patterns in data, recognize basic scientific terms and follow explicit instructions to carry out a scientific procedure.</p>

What can Filipino students do in science?

This section presents the mean scores and the proficiency levels of the Filipino students in Scientific Literacy. It provides both aggregated and disaggregated summary statistics describing the performance of the students.

Overall Performance

Figure 25 shows the average scores of OECD and participating ASEAN countries in Scientific Literacy.

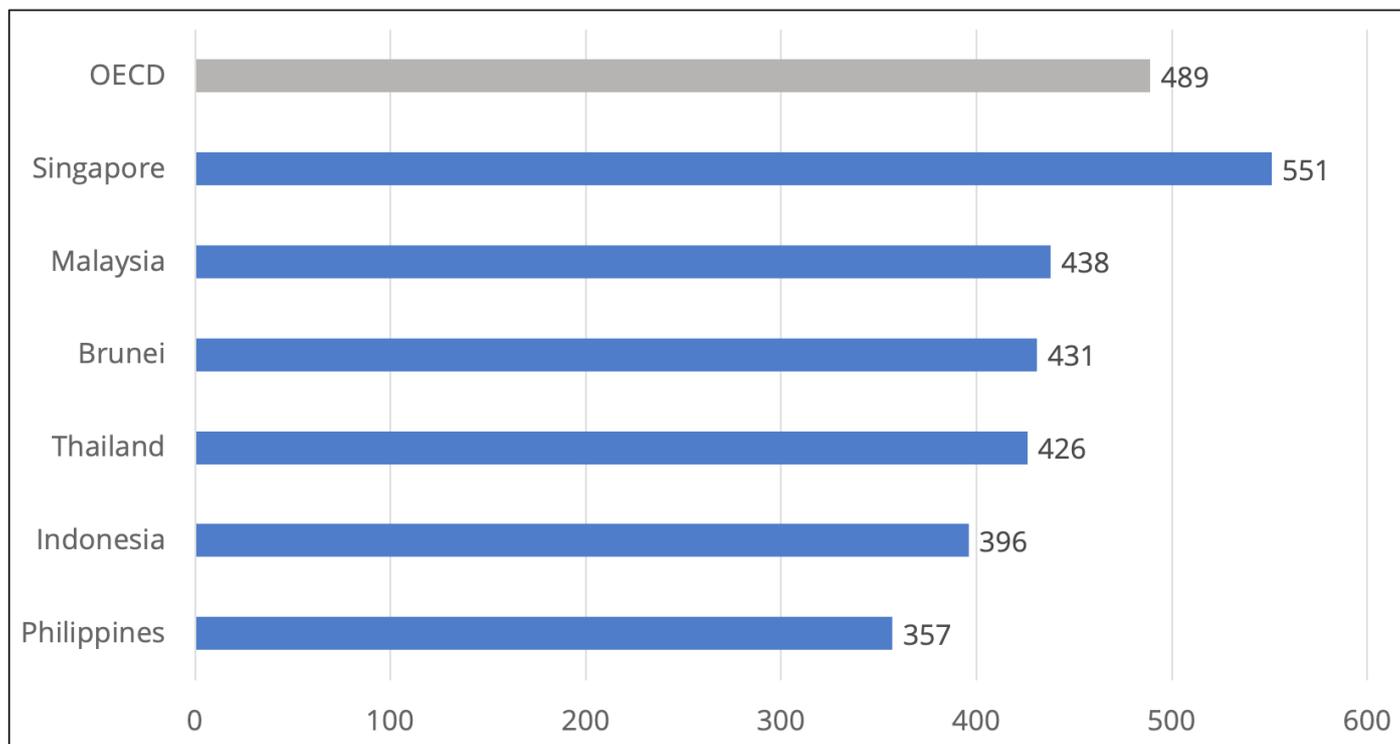


Figure 25. Mean Score of ASEAN and OECD in Scientific Literacy

The Philippines obtained an average Scientific Literacy score of 357 points in PISA 2018, significantly lower than the average score of OECD, 489 points. The mean score of Filipino students is within Proficiency Level 1a. Hence, an average Filipino 15-year-old student can use basic science knowledge to recognize or identify explanations of scientific phenomena. With additional guidance, they can do structured scientific inquiries with at most two variables. In comparison, a typical 15-year-old student from OECD countries at Proficiency Level 3 can draw upon moderately complex content knowledge to construct explanations of familiar phenomena.

The Philippines fared significantly lower in Scientific Literacy than all the ASEAN countries that participated in PISA 2018.

Figure 26 shows the percentage distribution of Filipino students across proficiency levels in Scientific Literacy, vis-a-vis OECD and participating ASEAN countries.

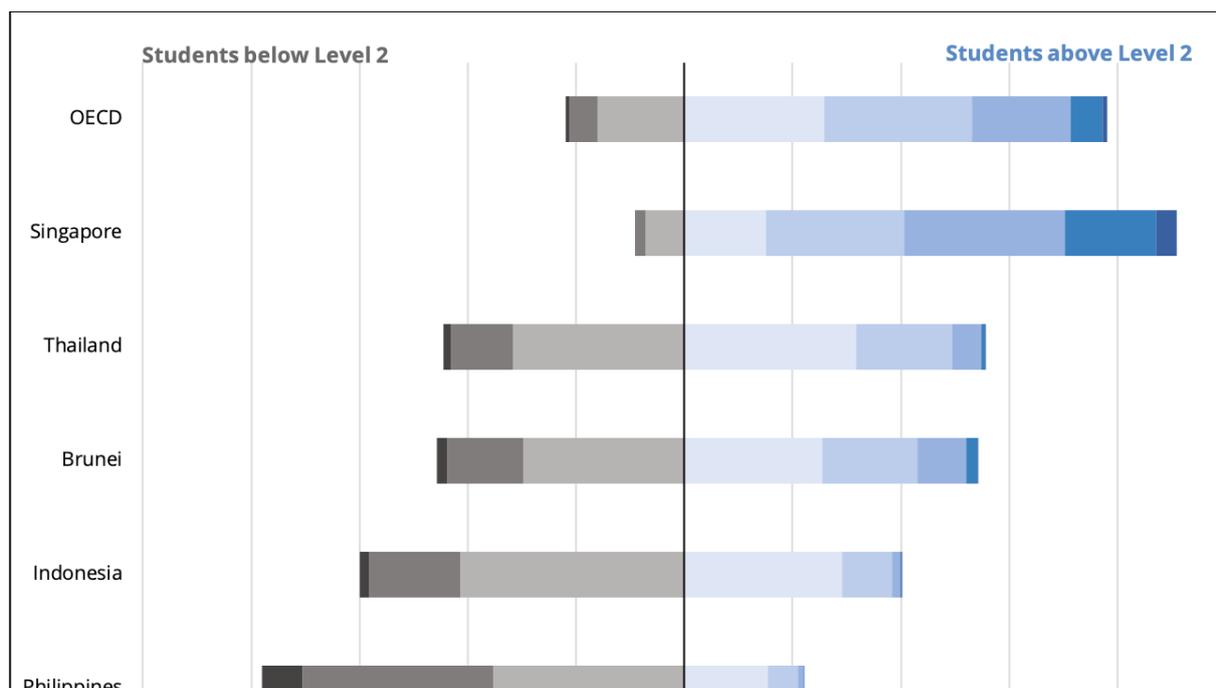


Figure 26. Distribution of the Filipino Students in Overall Scientific Literacy by Proficiency Level

Nearly four out of five (77.97%) PISA eligible students in the Philippines achieved proficiency levels below Level 2. Specifically, 35% of Filipino students were classified as Proficiency Level 1a and another 35% as Proficiency Level 1b. This suggests that majority are able to select the best scientific explanation for given data in familiar personal, local and global contexts. They can identify simple patterns in data, recognize basic scientific terms and follow explicit instructions to carry out a scientific procedure.

Those within Proficiency Levels 2 to 4 comprised 21.97% of the distribution. Around 5.6% and 1% of these students achieved Proficiency Levels 3 and 4, respectively. They can construct explanations with relevant cueing or support in less familiar or more complex situations.

Performance by gender

Figure 27 shows the average scores of OECD and participating ASEAN countries in Scientific Literacy by gender.

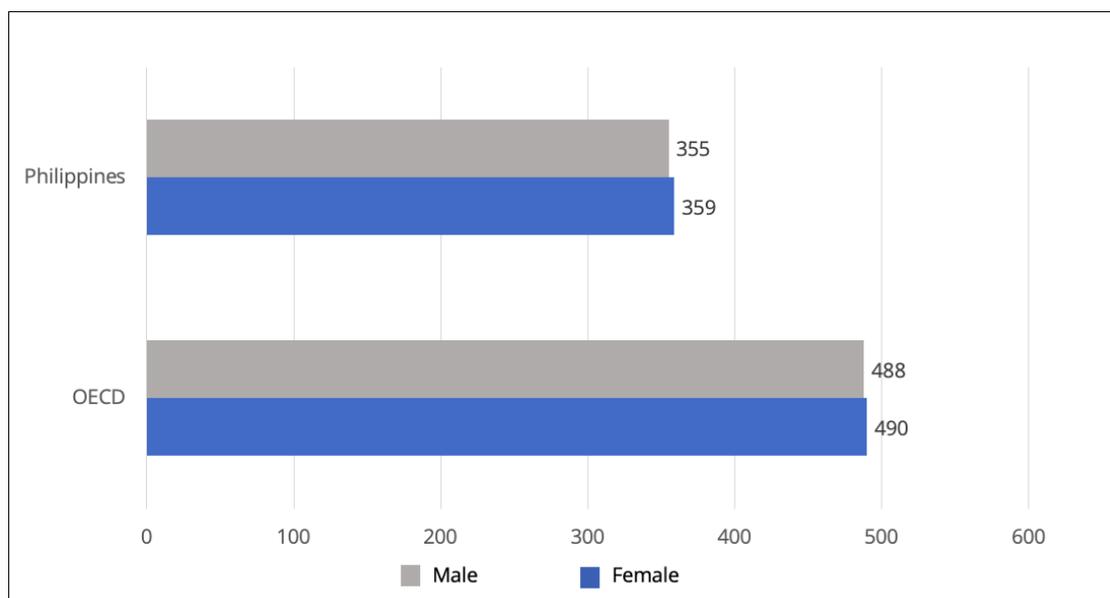


Figure 27. Mean Scores in Scientific Literacy by Gender

In the Philippines, the average Scientific Literacy score of female students was 359 points, which is not significantly different from the average score of male students (355 points). The mean scores of both genders were classified as Proficiency Level 1a. Meanwhile, the average scores of both male and female students in OECD were within Proficiency Level 3 of the Scientific Literacy scale.

Figure 28 shows the percentage distribution of Filipino students across proficiency levels in Scientific Literacy by gender.

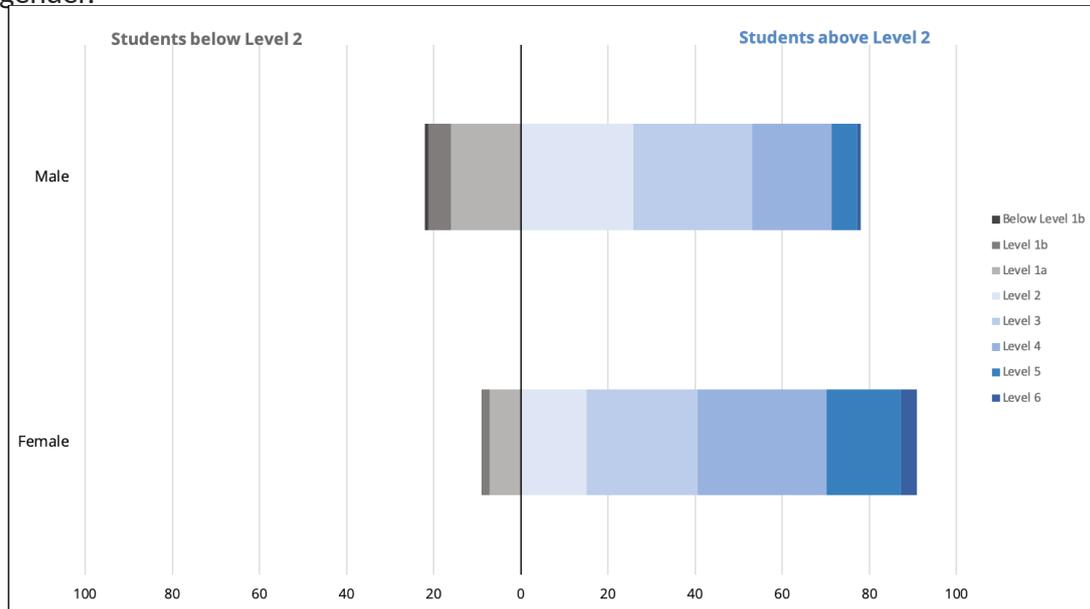


Figure 28. Distribution of Scientific Literacy Proficiency Level by Gender

More male students than female students were at Proficiency Levels 1b and 4 for Scientific Literacy. Meanwhile, a higher percentage of female students were classified as Proficiency Levels 1a, 2, 3, and below Level 1b than their male counterparts. Additionally, the percentage of those within Proficiency Levels 5 to 6 was higher for male students (0.09%) than female students (0.03%).

Performance by stratification variable

This subsection provides more information on Scientific Literacy of Filipino students by disaggregating their mean scores by school management, school level, administrative region, and type of community.

School Management

The average Scientific Literacy score of students in private schools was 399 points, which was significantly higher than the average score of students in public schools (347 points). Both average scores were within Proficiency Level 1a of the Scientific Literacy scale.

Figure 29 shows the percentage distribution of Filipino students across proficiency levels in Scientific Literacy by type of school management.

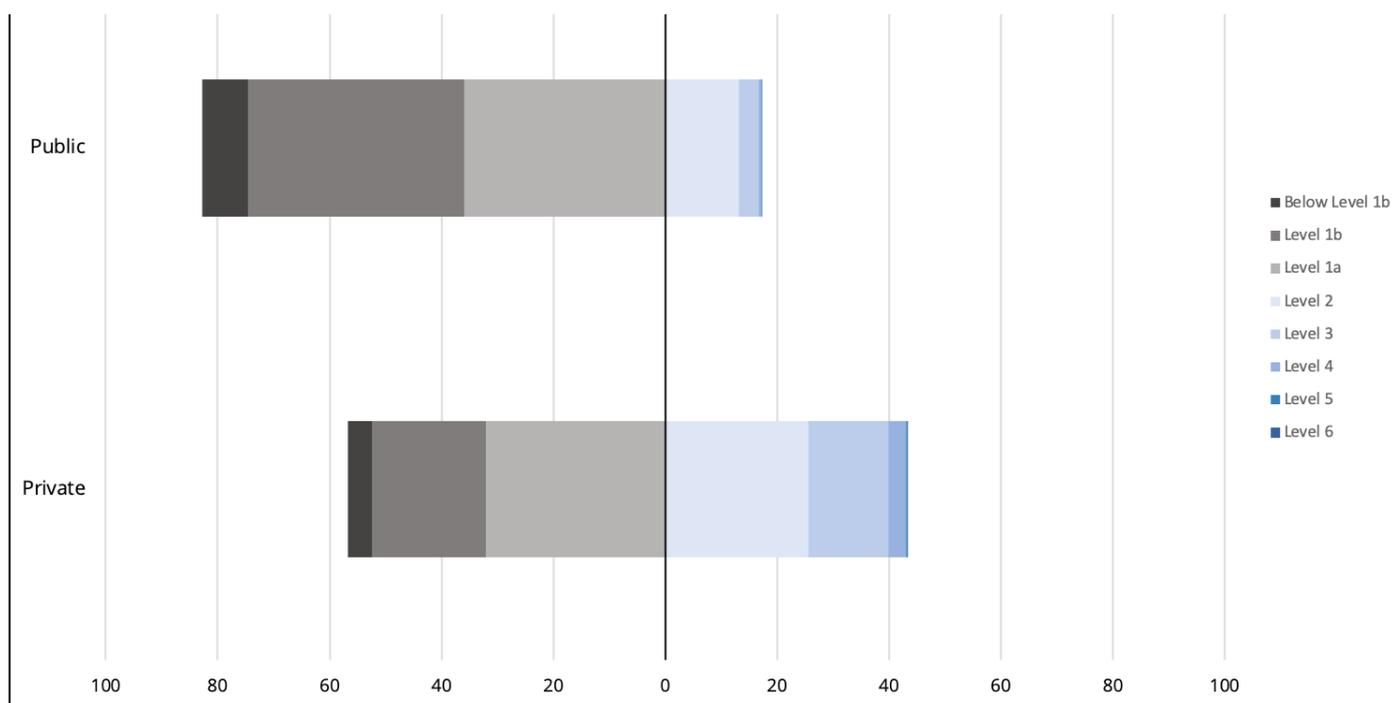


Figure 29. Distribution of the students across proficiency levels in Scientific Literacy by Type of School Management

The proportion of students below Level 1b proficiency in public schools (8.18%) is almost twice those in private schools (4.34%). Similar results were found in Proficiency Level 1b, with 38.65% of students in public schools and 20.31% of students in private schools.

Additionally, 35.92% of students in public schools attained Proficiency Level 1a – just slightly higher than the proportion of students in private schools at 32.00%. The proportion of students at Proficiency Levels below 2 were 82.75% and 56.65% for public and private schools, respectively.

The proportion of students in private schools at Proficiency Level 2 was 25.52%, nearly twice the proportion of students in public schools (13.08%). Moreover, 14.39% of students in private schools and 3.64% of students in public schools were within Proficiency Level 3.

Only 0.52% of students in public schools reached Proficiency Level 4, while 3.18% of students in private schools reached this level. Students within Proficiency Levels 5 to 6 were few in both public (0.01%) and private (0.25%) schools.

School Level

The average performance of SHS students in Scientific Literacy was 439 points, classified as Proficiency Level 2. These students have the basic content, procedural, and epistemic knowledge that can be utilized for simple experimental design and simple data set.

In contrast, JHS students fell within Proficiency Level 1 and averaged 356 points, significantly less than the average score attained by SHS students. This indicates that they can identify simple causal or correlational relationships and interpret graphical and visual data that require a low level of cognitive demand.

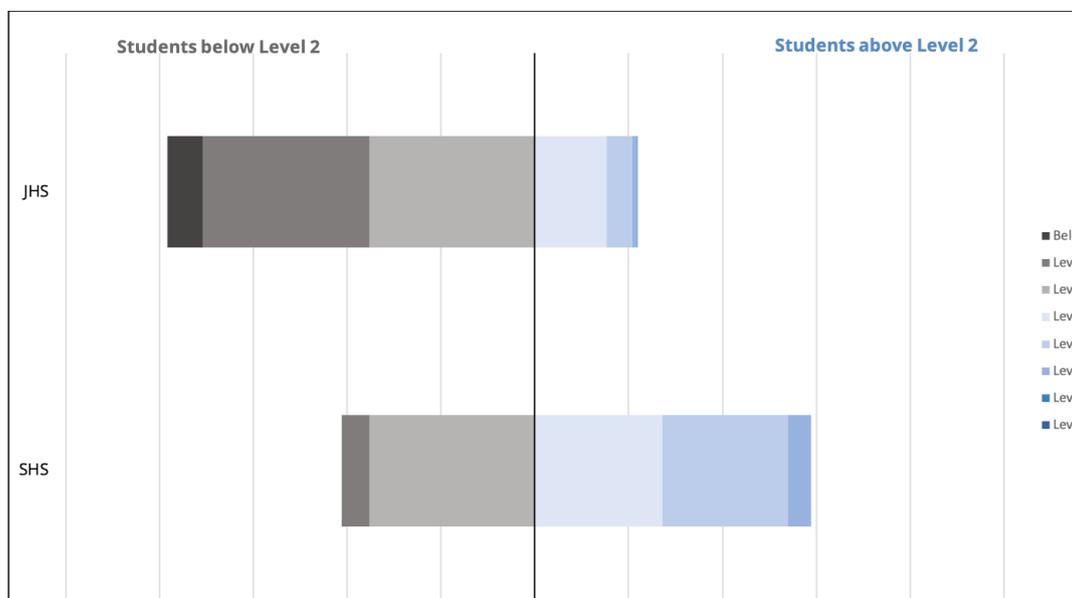


Figure 30. Distribution of Proficiency Level of Students in Scientific Literacy by School Level

Based on Figure 30, no SHS student fell below Level 1b proficiency, while 7.53% JHS students did. Majority of the JHS students were either at Level 1b (35.49%) or Level 1a (35.20%), respectively. The proportion of SHS students at Proficiency Level 2 (27.14%) was nearly twice the proportion of JHS students (15.28%) at the same level. Meanwhile, the proportion of Proficiency Level 3 SHS students (26.76%) was nearly five times as much as those in JHS (5.46%).

Administrative Region

Table 16 shows the mean scores in Scientific Literacy by administrative region including their respective standard errors and confidence intervals.

Administrative Region	Mean Score	SE	Confidence Interval	
Region 1	342	13.08	316	368
Region 2	354	7.26	340	368
Region 3	351	6.24	339	364
Region 4A	367	8.01	351	383
Region 4B	340	11.92	316	363
Region 5	346	11.35	324	368
Region 6	357	18.78	320	394
Region 7	374	8.68	357	391
Region 8	356	15.35	326	386
Region 9	329	14.24	301	357
Region 10	342	7.88	327	358
Region 11	353	17.67	318	388
Region 12	321	9.75	302	340
NCR	391	8.49	374	408
CAR	358	9.01	340	375
CARAGA	318	11.73	295	341
NIR	361	25	312	410

Table 16. Mean Scores in Scientific Literacy by Administrative Region

National Capital Region (NCR) achieved the highest Scientific Literacy scores across the country. Region 7 (Central Visayas) and Region 11 (Southern Mindanao) attained the highest mean scores in Visayas and Mindanao, respectively.

Region 4A (CALABARZON), Region 7 (Central Visayas), National Capital Region (NCR), and Cordillera Administrative Region (CAR) achieved average scores higher than the national average of 357 points.

Region 9 (Western Mindanao), Region 12 (Central Mindanao), and CARAGA Administrative Region (CARAGA) had mean scores within Proficiency Level 1b in Scientific Literacy, while the rest of the regions attained Proficiency Level 1a.

Table 17 presents the percentage distribution of the proficiency profile of Filipino students in Scientific Literacy across the administrative regions.

Administrative Region	Proficiency Level (%)							
	Below 1b	1b	1a	2	3	4	5	6
Region 1	8.61	41.21	35.73	10.56	3.65	0.23	—	—
Region 2	7.00	36.34	37.08	12.88	5.08	0.62	—	—
Region 3	8.01	37.01	35.65	14.13	4.55	0.63	0.01	—
Region 4A	5.19	31.85	36.92	18.81	5.85	1.19	0.17	—
Region 4B	9.82	42.70	31.89	13.16	2.06	0.36	—	—
Region 5	9.92	37.70	34.76	12.68	4.66	0.26	0.02	—
Region 6	8.93	34.52	34.91	12.23	7.50	1.91	—	—
Region 7	3.32	29.54	38.43	19.80	7.69	1.21	—	—
Region 8	0.36	36.00	30.49	15.52	7.78	0.85	—	—
Region 9	13.37	43.57	33.14	8.20	1.65	0.07	—	—
Region 10	9.05	37.44	38.49	14.03	0.99	—	—	—
Region 11	8.04	36.06	34.80	16.01	4.45	0.65	—	—
Region 12	13.18	49.47	30.27	5.91	1.16	—	—	—
NCR	2.45	23.36	36.22	24.93	10.7	2.25	0.08	—
CAR	8.15	31.78	37.12	16.31	6.13	0.51	—	—
CARAGA	15.70	48.65	30.12	4.71	0.83	—	—	—
NIR	6.55	37.40	34.74	10.79	6.92	3.20	0.39	—

— No student reached this level.

Table 17. Percentage distribution of Filipino students across proficiency levels in Scientific Literacy by Administrative Region

The proportion of National Capital Region (NCR) students below Proficiency Level 2 was lowest at 62.03%. The same region obtained the highest percentage within Proficiency Levels 2 to 4 at 37.88%. On the other hand, CARAGA Administrative Region (CARAGA) had the smallest percentage (5.54%) of students within Proficiency Levels 2 to 4 and the biggest percentage (94.47%) below Proficiency Level 2.

Negros Island Region (NIR) had the greatest number of students at Proficiency Levels 4 and 5 with 3.2% and 0.39%, respectively. Meanwhile, there were no students at Proficiency Level 4 from Region 10 (Northern Mindanao), Region 12 (Central Mindanao), and CARAGA Administrative Region (CARAGA).

Type of Community

The average Scientific Literacy score of students in urban communities was 370 points, significantly higher than the average obtained by students in rural communities (333 points). The mean score

of students in rural communities fell within Proficiency Level 1b, while the mean score of students in urban communities were classified as Proficiency Level 1a.

Figure 31 shows the percentage distribution of Filipino students across proficiency levels of Scientific Literacy by type of community.

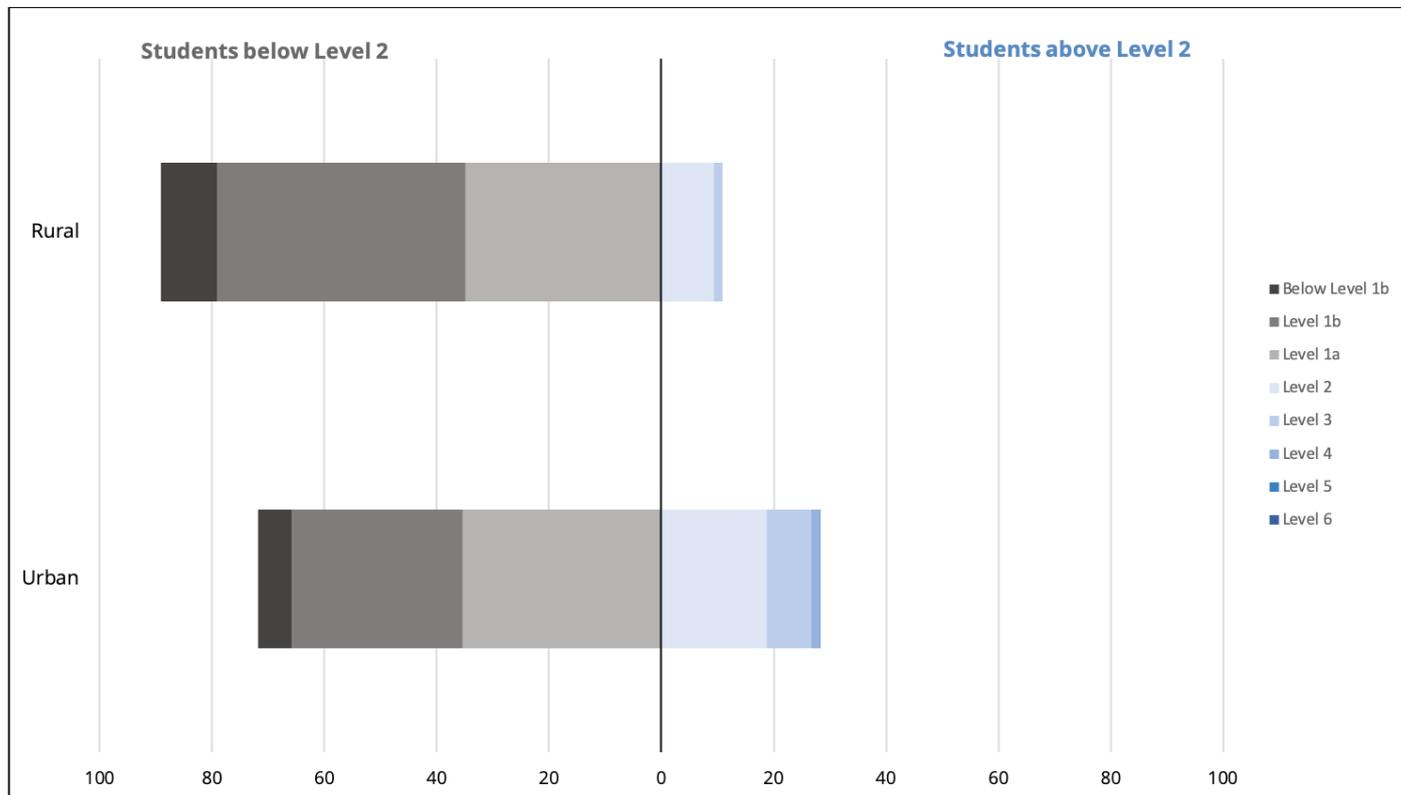


Figure 31. Distribution of Students across Proficiency Levels in Scientific Literacy by Type of Community

Majority (89.15%) of the students in rural communities did not reach the minimum proficiency level (Level 2), with 10.13% below Level 1b, and 44.12% at Level 1b. Meanwhile, 10.84% of students in rural communities were within Proficiency Levels 2 to 4.

Similarly, 71.74% of students from urban communities did not reach the minimum proficiency level. While 28.18% achieved Proficiency Levels 2 to 4, only 0.09% of the students reached Proficiency Level 5.



Ways Forward

Historical government investment has produced major gains in access to education in the Philippines. The biggest challenge of basic education in the country now is quality, particularly in the learning outcomes of students.

The DepEd decision to join PISA for the first time in its 2018 round is a step towards globalizing the quality of Philippine basic education. Together with the changing landscape of education, global standards are also changing, and the country needs to have a complete view of the gaps and areas for improvement.

By joining PISA, DepEd takes advantage of an assessment designed and constantly updated by education experts around the world to complement its own national assessment. Learners have historically performed low in the National Achievement Test. DepEd expected that this would be reflected in the PISA results, and put into sharp focus the tremendous challenge in globalizing the quality standards in basic education.

This report covers only the straightforward cognitive results of the PISA 2018. Immediately, we identify areas that require further study to inform policy and action. What accounts for the disparity of results across types of school management, school levels, administrative regions, gender, and type of community? Given that in the NAT learners perform better in Filipino than in English, does the choice of language affect test performance in Reading, Mathematics and Science?

DepEd is also completing the report on the non-cognitive variables of PISA 2018, which will provide further insights and deepen the understanding of student performance.

DepEd will continue participating in International Large-Scale Assessments (ILSAs) such as PISA, Southeast Asia Primary Learning Metrics (SEA-PLM), and Trends in International Mathematics and Science Study (TIMSS). The Philippines is set to join the next cycle of PISA in 2021, with Mathematical Literacy as major domain and Creative Thinking as innovative assessment.

All these will inform DepEd's Sulong EduKalidad campaign. Sulong EduKalidad ("boost or push education quality") is DepEd's rallying call for a national effort for education quality, guided by a masterplan to install aggressive reform in four key areas: (1) K to 12 curriculum review and updating; (2) Improvement of the learning environment; (3) Teachers' upskilling and reskilling through a transformed professional development program; and (4) Engagement of stakeholders for support and collaboration.

At the center of Sulong EduKalidad is the Filipino learner, and the commitment to help them to achieve their full potential and realize their dreams through quality basic education for all.

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