

## Indicator 4.6.1

### Indicator Name, Target and Goal

**Indicator 4.6.1** Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex

**Target 4.6** By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

**Goal 4** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

### Definition and Rationale

#### ○ Definition

The indicator is defined as the proportion of people in a specific age group who have achieved or exceeded a given level of proficiency in (a) literacy and (b) numeracy skills. In Japan, it is defined as the percentage of persons aged 16 to 65 who achieved a proficiency level of 1 or above for (a) literacy and (b) numeracy among the participants in the survey, based on the Programme for the International Assessment of Adult Competencies (PIAAC) survey, which was conducted by the Organization for Economic Cooperation and Development (OECD) in fiscal 2011.

#### ○ Concepts

(1) Persons achieving proficiency level 1 or above for literacy: persons scoring 176 points or above in the PIAAC literacy survey. In regards to this level, the OECD expresses the following view: "Most of the tasks at this level require the respondent to read relatively short digital or print continuous, noncontinuous, or mixed texts to locate a single piece of information that is identical to or synonymous with the information given in the question or directive. Some tasks, such as those involving non-continuous texts, may require the respondent to enter personal information onto a document. Little, if any, competing information is present. Some tasks may require simple cycling through more than one piece of information. Knowledge and skill in recognising basic vocabulary determining the meaning of sentences, and reading paragraphs of text is expected." Since the SDG 4 Data Book: Global Education

Indicator 2018 and Country Profile published by the UNESCO Institute for Statistics maintain that this same level or above is “at least the achievement of a decided level,” this standard is employed.

(2) Persons achieving level 1 or above for numeracy: persons scoring 176 points or above in the PIAAC numeracy survey. In regards to this level, the OECD expresses the following view: “Tasks at this level require the respondent to carry out basic mathematical processes in common, concrete contexts where the mathematical content is explicit with little text and minimal distractors. Tasks usually require one-step or simple processes involving counting; sorting; performing basic arithmetic operations; understanding simple percentages such as 50%; and locating and identifying elements of simple or common graphical or spatial representations.” Since the SDG 4 Data Book: Global Education Indicator 2018 and Country Profile published by the UNESCO Institute for Statistics maintain that this same level or above is “at least the achievement of a decided level,” this standard is employed.

#### ○ Rationale and Interpretation

The indicator is a direct measure of the functional proficiency of youth and adults in literacy and numeracy skills. The UN E-Handbook indicates that OECD’s Survey of Adult Skills in its Programme for the International Assessment of Adult Competencies (PIAAC) is a good source of data for this indicator. Therefore, it is calculated based on the results of the PIAAC.

This indicator shows the rate of youth and adults those who have achieved the fixed level of proficiency.

### **Data Sources and Collection Method**

The PIAAC survey measures adults’ proficiency in skills in three areas: literacy, numeracy, and problem solving in technology-rich environments. In order to suitably understand this proficiency, a background survey is also conducted to inquire about the attributes of the respondents. 24 countries and regions participated in the PIAAC.

For the survey, a survey investigator visits the target person’s house, etc., and using a special-use computer, conducts the survey for between one-and-a-half to two hours. If the target person is unfamiliar with using a computer, the survey is conducted by paper.

Those who are residents of hospitals, nursing care facilities, prisons, military

bases, etc. between the ages of 16 and 65 are excluded from the survey target populations; since they are not registered in the Basic Resident Registers, foreign residents or illegal residents are also excluded from the survey sampling.

Moreover, since the survey period was from August 2011 to February 2012, areas hit by the Great East Japan Earthquake Disaster (applicable areas designated by the Disaster Relief Act: all of Iwate, Miyagi, and Fukushima Prefectures, and parts of Aomori, Ibaraki, Tochigi, and Chiba Prefectures) were excluded from the survey locations.

Since a probability sampling enabling calculation of specific values for each person's selection as a survey sample was required, selection was made using the Basic Resident Register as a sampling frame and a stratified two-stage sampling method. At first, cities, towns, and villages throughout Japan were divided into 30 groups (strata) by regional blocks on a city scale, and town-district-street areas that became the survey area for each stratum were selected (first stage); individuals were then selected (second stage) from among the residents of the town-district-street to become the survey targets, with the Basic Resident Registers as a sampling frame. In Japan 11,000 people were selected as survey subjects, and 5,278 actually participated in the survey.

The survey was carried out so that bias would not arise due to non-responses; correcting as much as possible for biases is internationally recognized.

## **Method of Computation and Other Methodological Considerations**

### ○ Computation Method

This indicator is calculated as below.

- (a) Literacy: a) the total number of persons of all age groups achieving level 1 or above is divided by b) the total number of respondents of all age groups, and multiplying the result by 100. c) the percentage of persons aged 16-65 who achieved level 1 or above is calculated as below.

$$c = \frac{a}{b} \times 100$$

- (b) Numeracy: d) the total number persons of all age groups achieving level 1 or above is divided by e) the total number of respondents of all age groups, and multiplying the result by 100. f) the percentage of persons

aged 16-65 who achieved level 1 or above is calculated as below.

$$f = \frac{d}{e} \times 100$$

This indicator was calculated with reference to OECD Skills Outlook 2013.

○ **Comments and limitations**

- The UN shows its views “The measurement of youth and adult proficiencies in literacy and numeracy requires some form of direct assessment. Using household surveys to measure learning can be costly and difficult to administer and may underestimate learning in areas that are critical to daily life but are harder to assess in standardized approaches. The result may be inaccurate representations of what youth and adults know and can do, especially in relation to applying skills that may vary across contexts”.
- It should be noted that writing proficiency is not surveyed in the PIAAC.
- It should also be noted that the target samples numbered some 5,000 persons, and not the entire number selected as survey targets.
- The next PIAAC survey will be conducted in fiscal 2021 (results scheduled to be announced in fiscal 2023); the indicator cannot be updated during this time.

## **Data Disaggregation**

Male / Female

## **References**

Programme for the International Assessment of Adult Competencies (PIAAC)  
<http://www.oecd.org/skills/piaac/>

## **Custodian Ministries of Data**

Ministry of Education, Culture, Sports, Science and Technology

## **Custodian Ministries of Related Policies**

Ministry of Education, Culture, Sports, Science and Technology

## **International Organizations**

UNESCO Institute for Statistics (UNESCO-UIS)