Regional Training Course on SDG indicator
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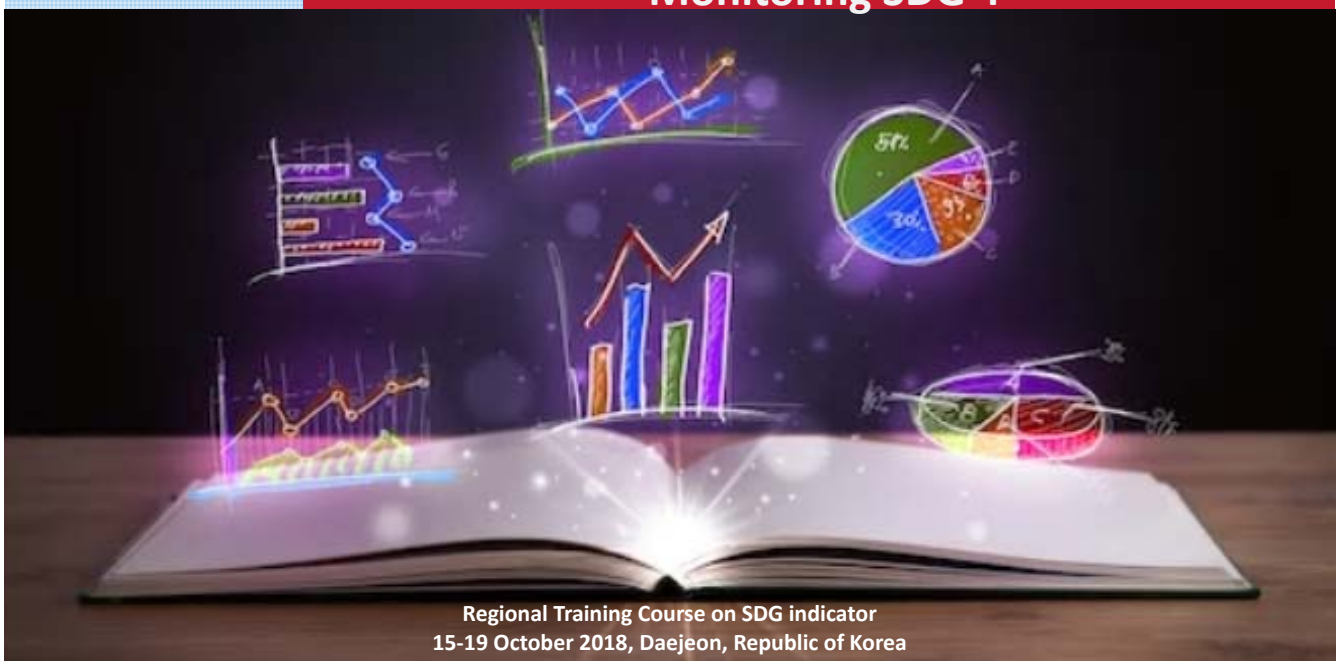
Strengthening different data sources for an effective Monitoring SDG 4



Sources of education data

- Administrative data collection
  - Regular (School census, reporting)
  - Ad-hoc
- School inspection
- Sample surveys
- Population censuses
- Research and case studies

Sources of education data

Supply-side Information

Schools
- School info
- Student info
- Teacher info
- Achievement

Administrative data collection and school inspection

Education providers
- Provision to education (finance)
- Management
- Policy
- Curriculum

Reports

Demand-side Information

Households
- Socio-economic
- Health and nutrition
- Relevant info for student's participation, achievement, drop-out
- Awareness and value to education
- External efficiency (link to labour market

Censuses and Surveys

Research and case studies - Findings

Administrative data collection

- Main source of education data
- Data are collected by both regular and ad-hoc manner
- Regular
  - School census (can be more than once a year)
  - Other types of reporting (financial, performance data, etc..)
- Ad-hoc
  - Sometimes depend on the need, data are collected by ad-hoc way (e.g.. Urgent policy intervention)

Administrative data collection

- For effective and efficient resource allocation
- To measure the performance of education system
- Institutional-based data
- Some of the key indicators which can be produced from the data collected by this methods are:
  - Resource allocation (Pupil-teacher ratio, student-text book ratio, class size)
  - Performance (Repeaters, promotes)
  - Teachers (Quality and experience of teachers)
  - Education finance (Contribution and allocation of education finance)

Administrative data collection

- Issues on accuracy and coverage of the data
- However, it is an institutionalized mechanism and data are based on actual counts
- Useful for administrative planning and resource allocation which requires actual data
- Data can be available in time-series (annually)

School inspection

- Useful way to assess the quality of education provided at school level
- However, it requires systematic procedures to transform observations and findings to measurable indicators
- Required to develop appropriate checklist, forms, questionnaires, experience and skill of inspectors are important (tools as well as capacity building)
- This approach is useful to assess the indicators like
  - Governance of school resources
  - Teaching-learning practices
  - Teachers and learners' characteristics
  - School discipline
  - Environmental and physical school situation which effect the quality of teaching-learning

Surveys

- **Educational surveys** – to gather a set of educational information together with other socio-economic data to answer specific policy questions (Student assessment survey, Literacy assessment survey)
- **Surveys which include an module on education** – also collect educational data to support main objective of the survey (Labour force survey, Household expenditure survey)
- Provide a snapshot of the situation at specific time
- Could be used to cross-check the data from other data collections (e.g. Administrative data collection)

Educational Surveys

- Most popular way of assessing quality of education
- There are many large-scale multi-national surveys to assess the learners' performance
  - PISA, TIMMS, PIRLS, IALS
- Costly, complicated, required special skills and expertise
- If properly done, it can provide very reliable and comprehensive information on quality of education especially learning achievement

Surveys with an educational module

- Main purpose is to collect educational data to support the main survey's objectives
- Can provide some kinds of information on quality aspect as well as socio-economic background of learners
- Useful as supplementary information to analyze the quality of education data
- Measuring external efficiency
- Cost-effective to include special module designed to assess the quality of education (module on literacy assessment)

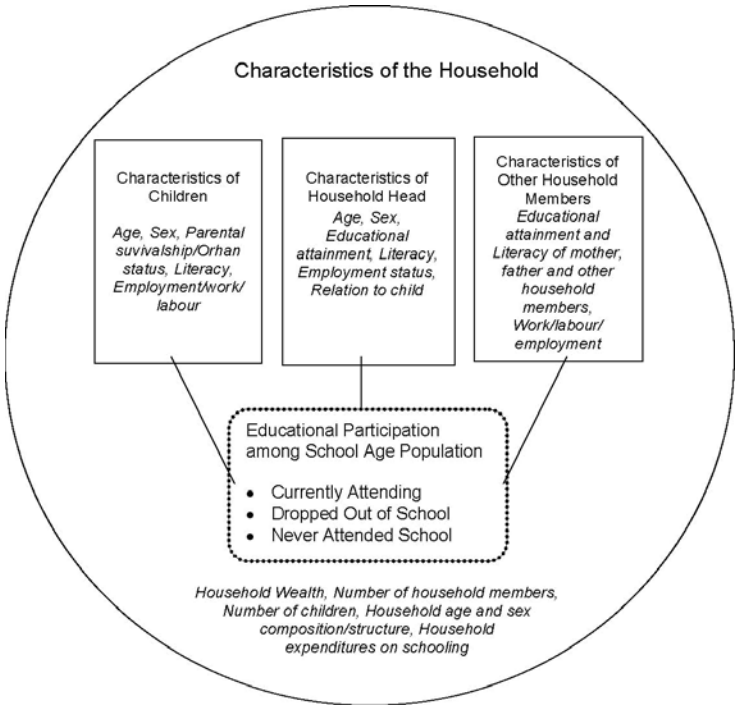
Household and population censuses

- Provide baseline data
- Main sources of population data
- Educational related data which are collected in censuses:
  - Literacy
  - Educational attainment
  - Attendance
- Additional sample survey can be conducted by targeting sub-set of population from the census to have more in-depth information

Research and case studies

- Data are collected in connection with studies of educational problems
- Availability and coverage of the data would be limited
- Focus on specific subject area to address specific issues
- As a supplementary information to understand the specific issues in more in-depth

Education data in Household Surveys and Censuses



Education data in Household Surveys and Censuses

- The analytical framework illustrates the kinds of data often available from national censuses and household surveys, as well as interrelationships between the data
  - First, the geographic context in which households are situated is determined: urban or rural areas, villages or towns, districts, and so on.
  - The household is located within that square and is characterised by selected variables (such as, wealth, size, and the number of school-age children).
  - Within the household, the household members are characterised by age, sex, educational attainment and literacy, and employment status.
  - The rounded rectangle with the dashed border outlines the schooling status of children (attending school, dropped out of school, and never attended school).

Analysis of data on children's school participation by urban-rural location, region, household wealth, parents' educational attainment, children's sex and age, and other household and individual characteristics.

Education data in Household Surveys and Censuses

Indicator	Possible disaggregation	Example questions
Literacy/illiteracy rate	Age, sex, wealth, location, disability, ethnicity migration status etc.	Can the person read and write with an understanding of [NATIONAL] language? Can the person read and write with an understanding of another language? [INDICATE LANGUAGE] *Source: General Population Census of the Kingdom of Cambodia 2008* Can [NAME] read letters/books/newspaper? *Source: Bangladesh Education Household Survey 2014* As a regular part of this work, do you (did you) have to read the following [CHOOSE ITEM]? (bills, payments, newspapers, forms, other) *Source: STEP*
Educational attainment/ Generally those age 15 and older Completion rate	Age, sex, wealth, location, disability, ethnicity, mother tongue/(s) and migration status;	What is the highest level and grade or year of school [NAME] has ever attended? *Source: MICS6 for Household 6* What grade or year is [NAME] currently attending? *Source: Household Profile Questionnaire Philippines 2012* What is the level of education currently attended? (for person in question) *Source: Brunei Darussalam Labour Force Survey 2017* What is the highest qualification [NAME] obtained? *Source: Vietnam Household Registration System Survey 2015*

Education data in Household Surveys and Censuses

Indicator	Possible disaggregation	Example questions
Gross intake rate (GIR) Net intake rate (NIR) Gross enrolment rate (GER) Net enrolment rate (NER) Age-specific attendance ratio (ASAR)	Age, sex, wealth, location, disability, ethnicity, mother tongue/first language, second/other language(s) and migration status	Did [NAME] attend school at any time during the [PREVIOUS] school year? During [CURRENT] school year, what level and grade [is/was] [NAME] attending? *Source: DHS Cambodia 2014*
Transition rate Promotion rate Repetition rate Dropout rate Survival rate	Age, sex, wealth, location, disability, ethnicity, mother tongue/first language, second/other language(s) and migration status	Did [NAME] attend school at any time during the [PREVIOUS] school year? During [CURRENT] school year, what level and grade [is/was] [NAME] attending? *Source: DHS Cambodia 2014.* What is the highest level and grade or year of school [NAME] has ever attended? During that previous school year, which level and grade or year did [NAME] attend? During this current school year, which level and grade or year is [NAME] attending? *Source: MICS6 for Household*

Education data in Household Surveys and Censuses

Indicator	Possible disaggregation	Example questions
Out-of-school population	Age, sex, wealth, location, disability, ethnicity, mother tongue/first language and migration status	Did (NAME) ever-attending school? What is the highest grade /level of education attended? Did [NAME] attend school at any time during the [PREVIOUS] school year? During [CURRENT] school year, what level and grade [is/was] [NAME] attending? *Source: DHS Cambodia 2014* What is the highest level and grade or year of school [NAME] has ever attended? During that previous school year, which level and grade or year did [NAME] attend? During this current school year, which level and grade or year is [NAME] attending? *Source: MICS6 for Household 6*
Over-age /Under-age	Age, sex, wealth, location, disability, ethnicity, mother tongue/first language, second/other language(s) and migration status	At which level of education is [NAME]? Which grade is [NAME] attending? *Source: Vietnam Household Registration System Survey 2015*
Education expenditure	Age, sex, wealth, location, disability, ethnicity, mother tongue/first language	In last 12 months, how much money was spent for each studying member of the household? (by item, such as books, paper, tuition fees, uniforms, examination fee, internet, etc.) *Source: Bangladesh Education Household Survey 2014* What are the expenditures on [NAME]'s education over the past 12 months for compulsory subjects in school? (open question) How much do you have to pay to enrol [NAME] in school? *Source: Vietnam Household Registration System Survey 2015*

Education data in Household Surveys and Censuses

Household level information

- In addition to indicators calculated at the individual level, education indicators can also be examined at household level
- Percentage of households have children of school age
- Percentage of those households with one or more children attending school
- Percentage of households with one or more school-age children with none of the children attending school
- Percentage of school-age children in school among households with one or more school-age children
- This can be further refined according to school level (pre-primary, primary, secondary, and tertiary)
- All can be used to supplement indicators related to individual participation

Education data: Administrative vs Household Surveys and Censuses

Administrative Surveys	Household Surveys and Censuses

• Schools and other educational institutions regularly report data on students, teachers, expenditures, and physical facilities
  • To gauge the capacity and performance of schools in relation to national education goals and plans,
  • To determine future development policies, plans and management arrangements.
• Like other administrative data collection (such as health and social welfare), collected data face shortcomings related to data quality
  • Coverage
  • In many countries, administrative data are only available for schools in the formal government sector or for private schools that receive significant government funding
  • Accuracy
  • Non-reporting schools have be estimated
  • Timeliness
  • Rarely available for a next school year for planning
• Data typically provides limited information on the individual characteristics of pupils
• Almost no information on the characteristics of their households
• No information on the individual characteristics and family backgrounds of children who do not attend school
	• Provide important education data that can be analysed according to household and individual characteristics
	• The availability of multiple censuses and surveys conducted over time enables changes to be tracked within a given timeframe, assuming consistency in survey questions and methodology
	• Provide information on aspects of children's background that may influence household schooling decisions
	• Children's school enrollment or school attendance can be analysed according to household and child characteristics
	  • Family wealth
	  • Social characteristics
	  • Child characteristics (disability, birth order, etc..)
	• Educational attainment and literacy skills
	• Most of the major household surveys are nationally representative

Education data in Household Surveys and Censuses

- In many countries, large-scale household surveys are conducted regularly to provide information on population, health, education, household income and expenditure, employment, and other critical areas of study.
- These data can provide invaluable information to inform policy debates.
- More and more countries are organising multiple-topic household surveys using standardised approaches to measuring on a regular basis.
- If properly designed and implemented, these surveys can provide important and unique information.
- In many instances, the education information from these data collection efforts is underutilized.
  1. because potential data users are unaware of the education data collected by these censuses and surveys;
  2. because reports of the findings present education data primarily as a background characteristic rather than an object of study per se.

Issues and challenges with education indicators from household surveys

- Due to the design of the survey, their frequencies, sampling techniques used and sample size, and timing of the survey, some issues and challenges in using household survey for education monitoring might come up;
  1. The phrasing of questions and definition regarding school enrolment and attendance influences measuring educational participation
  2. The survey timing and duration of survey fieldwork influences the recentness of collected data
  3. The survey dates rarely coincide with the beginning of the school year, which can lead to discrepancies between a household survey and an administrative source
  4. The representativeness of sample depends on the survey design such as the sampling method used, the level of accuracy and the level of data disaggregation
  5. There are a lack of awareness about the existence and accessibility of household survey data
  6. Little information about education is presented in main reports of household surveys
  7. Little presented information usually goes together with a lack of knowledge on and skills to analyze education data from household surveys to support evidence

Are the household survey and census data comparable to administrative sources?

- Both measure educational participation in different ways

- Administrative data are based on school reporting at the beginning of the school year, but in some cases it can include reporting at the middle or end of the school year
  - Enrolment ratios are based on the numbers of children enrolled in school
  - The school-age population estimated from national censuses and/or vital statistics.

- Household surveys collect data on enrolment and/or school attendance among a representative sample of children
- The timing of the survey is not related to any point in the school year and may actually even cross two different school years
- Questions concerning children's school participation are typically asked of the head of household

Are the household survey and census data comparable to administrative sources?

- These two sources may differ for a number of reasons
  - The household surveys querying children's school attendance is different from that answered by school censuses:
    - Attending school is not necessarily the same as being enrolled in school. Children may be recorded in school enrolment records and yet not actually be attending school.
  - The timing of data collection relative to the school year
    - A school census conducted at the beginning of the school year and a household survey collecting data at the end of the school year will likely find different rates of participation since some children will have enrolled in school without ever actually attending, and other children will have dropped out of school during the school year.
  - The accuracy of the population estimate and the completeness of school-level data can affect the calculation of participation ratios from administrative data
  - The completeness of the census enumeration and the sample design for the household survey may also affect the accuracy of estimates produced by censuses and surveys

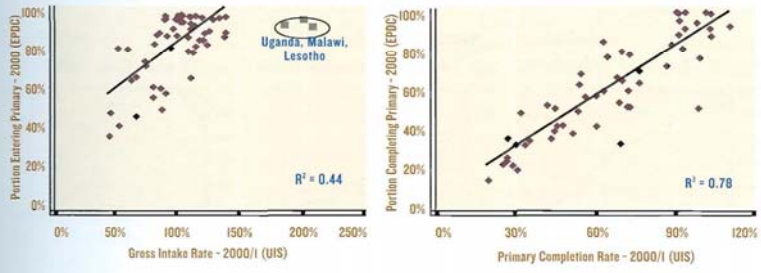
Are the household survey and census data comparable to administrative sources?

Box 3. > Are the household survey and census data comparable to administrative sources?

The primary entry and primary completion measures used here for the trends correspond well to values for similar indicators measured by administrative data. That indicates the trends shown in this report can be used as a proxy for trends of entry rates and completion rates.

A comparison of the gross intake rate (GIR) and the portion of the school age cohort entering primary school in the year of the household survey (graph below left) shows that the correspondence is reasonable. Most of the difference occurs where GIR is higher than 100 because there is a backlog of previously unreached older children entering school. The proportion of the school-age cohort entering primary school cannot exceed 100.

Three countries with exceedingly high GIR related to the elimination of school fees or post-war reconstruction are colored grey. The correspondence between primary completion rates (PCR) and the proportion of the school-age cohort completing primary school is even better than for intake, and is shown in the graph below right.



SDG-4 Indicators
(can be derived from Household Surveys and Censuses)

Indicator number	Indicator clause	HHS is only the source	HHS is one of the sources
Target 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes			
4.1.3	Gross intake ratio to the last grade (primary education, lower secondary education)		√
4.1.4	Completion rate (primary education, lower secondary education, upper secondary education)	√	
4.1.5	Out-of-school rate (primary education, lower secondary education, upper secondary education)		√
4.1.6	Percentage of children over age for grade (primary education, lower secondary education)		√
Target 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education			
4.2.1	Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex	√	
4.2.2	Participation rate in organized learning (one year before the official primary entry age), by sex	√	√
4.2.3	Percentage of children under 5 years experiencing positive and stimulating home learning environments	√	
4.2.4	Gross early childhood education enrolment ratio in (a) pre-primary education and (b) early childhood educational development		√

SDG-4 Indicators
(can be derived from Household Surveys and Censuses)

Indicator number	Indicator clause	HHS is only the source	HHS is one of the sources
Target 4.3 By 2030, ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university			
4.3.1	Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex		√
4.3.2	Gross enrolment ratio for tertiary education by sex		√
4.3.3	Participation rate in technical vocational programmes (15 to 24 year olds) by sex		√
Target 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship			
4.4.1	Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill		√
4.4.3	Youth/adult educational attainment rates by age group, economic activity status, levels of education and programme orientation		

SDG-4 Indicators
(can be derived from Household Surveys and Censuses)

Indicator number	Indicator clause	HHS is only the source	HHS is one of the sources
Target 4.5 By 2030, eliminate sex disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations			
4.5.1	Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict affected, as data become available) for all education indicators on this list that can be disaggregated		
4.5.2	Percentage of students in primary education whose first or home language is the language of instruction		√
4.5.4	Education expenditure per student by level of education and source of funding		
Target 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy			
4.6.1	Percentage 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		√
4.6.2	Youth/adult literacy rate	√	
4.6.3	Participation rate of illiterate youth/adults in literacy programmes		√

SDG-4 Indicators
(can be derived from Household Surveys and Censuses)

Indicator number	Indicator clause	HHS is only the source	HHS is one of the sources
Target 4.7. By 2030, that all learners acquire the knowledge and skills needed to promote sustainable development, including among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development			
4.7.1	Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies, (b) curricula, (c) student assessment		√
4.7.2	Percentage of students by age group (or education level) showing adequate understanding of issues relating to global citizenship and sustainability		√
4.7.3	Percentage of 15-year-old students showing proficiency in knowledge of environmental science and geoscience		√
4.7.4	Percentage of schools that provide life skill-based HIV and sexuality education		√
4.7.5	Extent to which the framework on the World Programme on Human Rights Education is implemented nationally		√

Strengthening Household Surveys for effective monitoring of SDG4

Improving coverage in TVET and skills in HHS

- How population is accessing/ attending TVET and skills development programmes?
- Which programmes to be collected and which programmes not? Contents and duration of such programmes can be varied among the providers

Box no.2:
TVET and skills coverage in MLCS, Myanmar
In Myanmar Living condition survey (MLCS), included vocational education in their highest completed level of education and in the currently attending grade/level.
Q35- What is the highest level of education that (NAME) completed?
00- NIL
01- Below primary
02- Primary
03- Middle
04- Vocational certificate -> Q37
05- High school
06- Under graduate/diploma
07- Bachelor
08- Post graduate
10- Master
11- PhD
Q37- Is (NAME) attending school during the current school year?
1= YES
2= No
Q38- What grade/level is (NAME) currently attending?
01- Kindergarten/grade1
02- Grade 2
03- Grade 3
04- Grade 4
05- Grade 5
06- Grade 6
07- Grade 7
08- Grade 8
09- Grade 9
10- Grade 10
11- Grade 11
12- Vocational school
13- Under Graduate
14- Bachelor
15- Post graduate
16- Master
17- PhD
18- Others
To capture broader skill areas in the survey, the questionnaire also included a separate section on section VII) Training (outside the General Education System) (For person 12 years and above)

Under these section 3 questions have been included

Q51- Did (NAME) ever attend any vocation/technical training for improving/acquiring professional /technical skills?

Q46- during the last year i.e. since (DATE) to today, how many training did (NAME) attend?

Q47- What was the subject of the most recent training that (NAME) attended. (by ISCED level)

Strengthening Household Surveys for effective monitoring of SDG4

Improving coverage on literacy and NFE in HHS

- Question on literacy include is- Can you read and write? – literacy rate

Need to expand to understand

- Population who have been attending literacy and NFE programmmes
- Literacy and NFE programmes can be diverse and can take different forms
- Need a consultation among different stakeholders to decide on which and how to capture literacy and NFE programmes in HHS

Box no.3: Literacy and NFE programmes coverage in Cambodia Socio- Economic Survey, 2015

Q14- What kind of non-formal classes is (NAME) currently attending/did (NAME) attend?

1- Literacy (6 months)
2- Vocational training (tailoring, motor repairing, ,Khmer classical music, heir dressing, poultry etc.)
3- Post literacy (Agricultural trainings)
4- Foreign languages
5- Computer literacy
6- Others

Improving coverage on ECE in HHS

- ISCED (International Standard Classification of Education) is used as the reference to define 'early learning' for Target 4.2 indicators and to collect comparable data. The Early Childhood education (ECE- ISCED) has been categorized into 2 sub types :
- **Early childhood educational development (0-2)**
- **Pre-primary (At least 3 years)**
- Many household survey do not collect education attendance for early years such as 0-2 years age.

MICS 6 expanded the scope included all children

Does (he/she) currently attend [INSERT MENTIONED PROGAMME]? (Source: MICS6 for Children under 5.)

Child - Developmentally on Track and monitoring home learning environment

- Not yet a globally-accepted definition of "developmentally on track."
- At present, the MICS Early Childhood Development Index defines "on track" in 4 main domains
- ***literacy-numeracy*** - if a child can identify at least 10 letters of the alphabet, read 4 simple words and recognise and name all numbers from 1 to 10.
- ***Physically*** - if they can pick up small objects easily and are generally well enough to play.
- ***socio-emotional development*** - if they are able to undertake simple activities independently, get along with other children and do not usually kick, bite or hit other children or adults.
- ***learning*** - if they participate in any type of organized learning including early childhood education, kindergarten or community care.

Children developmentally on track

Based on the concepts, MICS6 includes the following questions to collect data to track the development of a child

Can [NAME] pick up a small object with two fingers, like a stick or a rock from the ground?
Is [NAME] sometimes too sick to play?
Does [NAME] follow simple directions on how to do something correctly?
When given something to do, is [NAME] able to do it independently?
Does [NAME] get along well with other children?
Does [NAME] kick, bite, or hit other children or adults?
Source: MICS6 for Children under 5

Positive and stimulating home learning environments

Following the definition of the indicator on positive and stimulating home learning environment, MICS has included following question:

In the past 3 days, did you or any household member aged 15 or over engage in any of the following activities with [NAME]? (Read books or looked at picture, books; Told stories; Sang songs; Took outside the home; Played together; Named, counted, or drew things)

Setting Up Institutional Mechanisms to Maximize Household Surveys for SDG 4

- Household survey as a data source should be included in National Strategies for Development of Education Statistics (NSDES)
- Mechanism to include required data and information in HHS questionnaires
- Setting up a clear mechanism between NSO and MOE
- Review of education modules of the HHS
- Agree on the additional questions or reformulation of the questions to align with SDG4 indicators
- Quality of the survey for education indicators
- Data Standards and Metadata

Further reading

- UNESCO Methodology. Retrieved June 08, 2018, from http://uis.unesco.org/sites/default/files/documents/guide-to-the-analysis-and-use-of-household-survey-and-census-education-data-en_0.pdf
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- EPDC (Education Policy and Data Center). 2009. “How (Well) Is Education Measured in Household Surveys? A Comparative Analysis of the Education Modules in 30 Household Surveys from 1996–2005.” IHSN (International Household Survey Network) Working Paper 002, World Bank, Washington, DC

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