STEP SKILLS MEASUREMENT

The World Bank

STEP Skills Measurement Study

Cedefop International Seminar

"Skills Anticipation and Matching"

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World Bank

Motivation

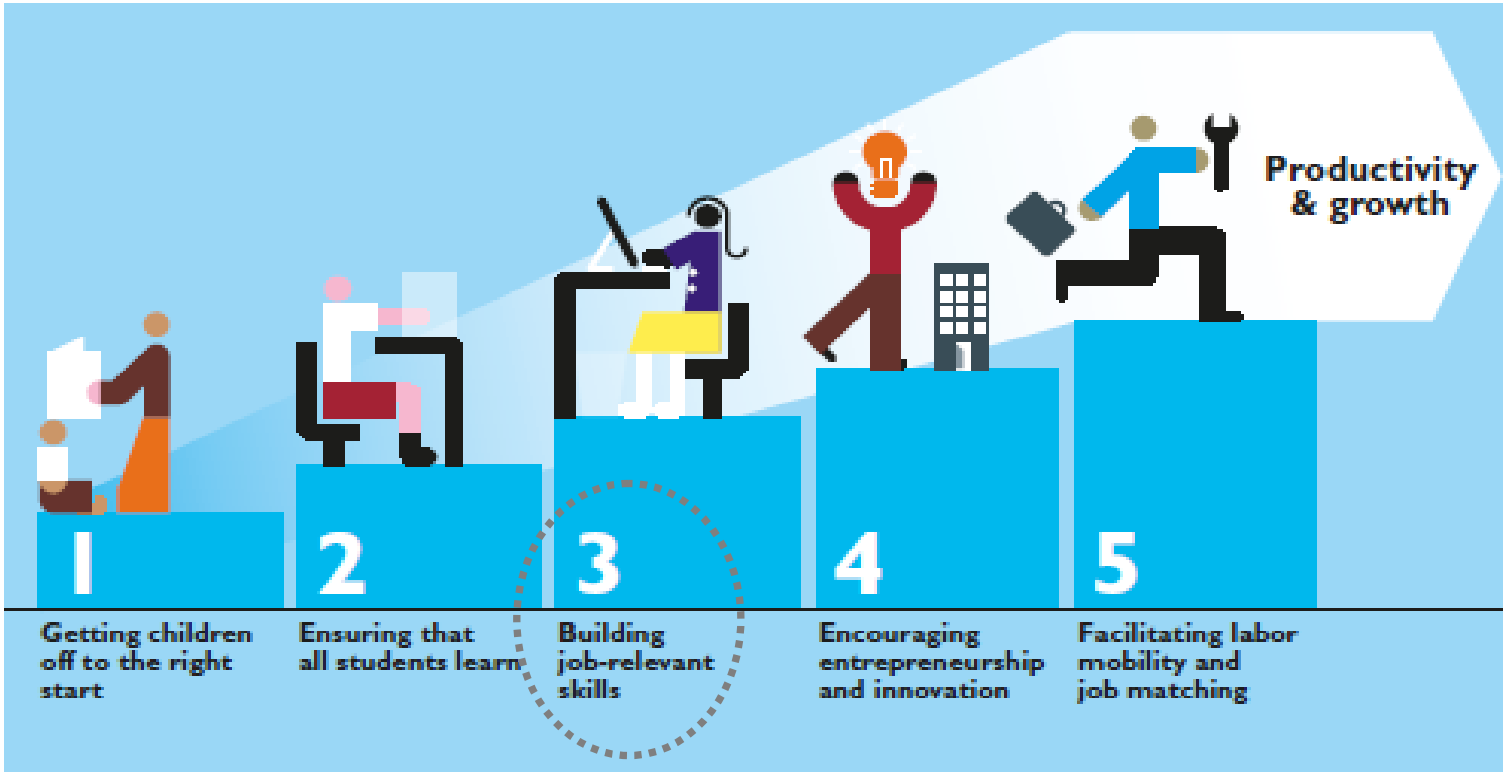
- Skills are at the core of improving employment outcomes and increasing productivity and growth
- Currently, education and training systems not always provide the necessary skills for the labor market.
- Furthermore, the most commonly used measures of education and training capture a small part of what makes an individual's human capital.

Motivation

- Other skills, such as cognitive and socio-emotional, are important determinants of labor market success.
- All of this means that policymakers need better information about the distribution of different types of skills in the labor force and of the demands for those skills from different economic sectors.
- To increase employability and opportunities in the labor market, policies need to be coordinated at various levels.

The STEP Framework

- Skills toward Employability and Productivity (STEP): An Integrated Framework for Skills Development



What skills do we need to measure?

- We often use education and training received or completed
  - Is it just a signal of things the person already knows? (Spence 1973)
  - One hopes that education teaches people new things.
  - In that case, why measure education and not the things people know and can use to improve their welfare?
- Using education and training to proxy for skills doesn't work well
  - Most statistical analyses show, for example, that education and training explain at best 50% of variation in earnings (Bowles, Gintis, and Osborne, 2001)
  - Measuring the skills directly can better capture what people know (not just the part they learned in school)
  - We can see which skills actually matter most

Defining different types of skills

- Cognitive skills: "ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought" American Psychological Association (APA)
  - Literacy
  - Numeracy
  - Ability to solve abstract problems
- Non-cognitive skills: characteristics across multiple domains (social, emotional, personality, behaviors, attitudes, etc.) not included under cognitive skills
  - Work habits (effort, discipline, determination)
  - Behavioral traits (self-confidence, sociability, emotional stability)
  - Physical characteristics (strength, dexterity, endurance)
- Technical skills: Combinations of cognitive and non-cognitive skills used to accomplish specific tasks (skills used @ work)

How do these skills affect outcomes?

- Can influence success in education
- Can affect career opportunities and choices
- Can determine ability to find and perform different types of jobs
- Employers hiring, promotion, and wage setting decisions depend on these skills (Borghans, Duckworth, Heckman, and ter Weel (2008); Cunha (2008); and Heckman, Stixrud, and Urzua (2006))

Why is a new type of instrument needed?

- There are important knowledge gaps
  - Which skills matter?
  - How do they matter?
  - How do people obtain needed skills?
  - How do skills enter into employer decisions?
- Existing surveys don't collect the necessary information all in one place
  - Skills
  - Labor market outcomes
  - Instrumental variables
- Policy makers need information to make good decisions
  - Restructuring curricula and changing standards
  - Where to invest
  - Improving matching

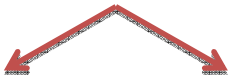
Why is a new type of instrument needed?

- The vast majority of household surveys only asks about education
  - Some ask about training (but rarely specific technical skills)
  - A very limited subset will ask about IQ or other specific proxies for cognitive or non-cognitive skills
- Psychological studies that measure these skills almost never look at labor market outcomes
- Almost no employer surveys ask for any measure of skills beyond education
  - Some specifically designed surveys may ask about ICT use, but rarely anything else

WB STEP Skills Measurement Objectives

1. Create harmonized instruments to measure the distribution of skills in the labor force across several developing countries;
2. Support countries to analyze data related to skills mismatches; and
3. Identify policy interventions to address skills-gaps and mismatches

The study applies two survey instruments:



(1) Household Survey

Supply of skills

- Sample size: 2500-3500
- Length: 120-150 minutes
- Representative of urban areas
- Population aged 15-64

(2) Employer Survey

Demand for skills

- Sample size: 300-500 enterprises
- Length: 45 minutes
- Geographic or economic sector based
- Formal and informal sectors

Research Questions

- What are the current levels and distribution of skills in the labor force?
- How do these skills affect labor market outcomes?
- What is the nature and size of mismatches between skills supply and demand?
- What affects investments in skills by individuals and firms?
- What interventions should countries consider to improve employment and productivity?

Participating Countries

Innovative Features

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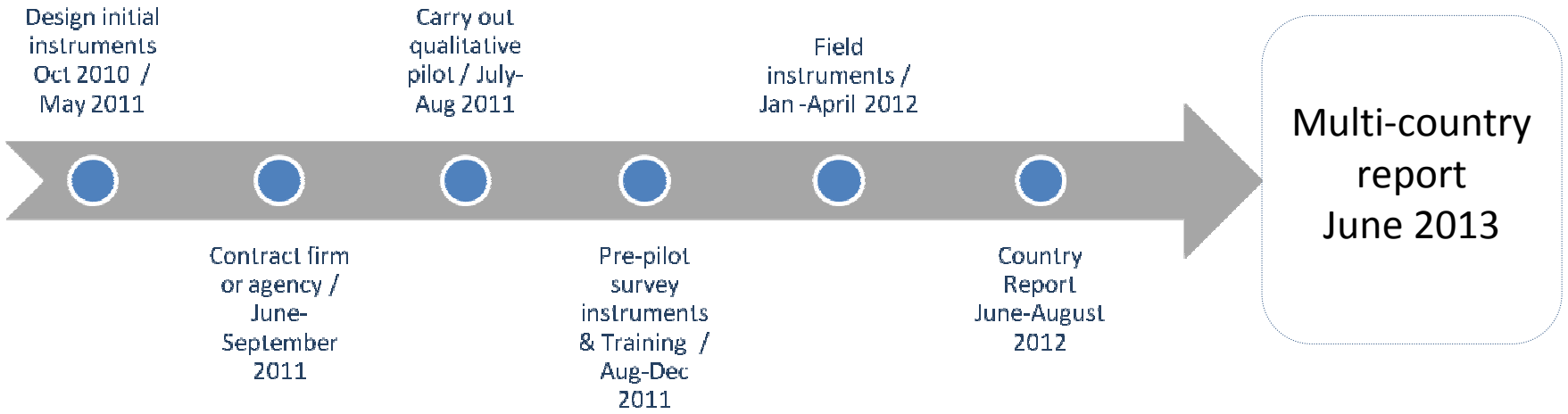
- Unpacks the definition of "skills"
  - Cognitive (literacy and numeracy)
  - Non-cognitive (personality, behavior and preferences)
  - Technical (skills used at work)
- Moves beyond traditional measures of skills
  - Cognitive test on same scale as in the PIAAC survey
  - Non-cognitive test goes beyond the traditional Big Five Inventory (BFI)
  - Skills of everyone sampled (ages 15-64), whether or not employed, and regardless of sector of employment
- Includes a survey of employers
  - Matching questions on skills to those in the individual survey
- Provides cross-country comparability
  - Countries follow strict implementation protocols to ensure cross country comparability
  - World Bank offers capacity building for national teams and survey administrators

Timeline

Process began in October 2010



Overview of World Bank Program to Improve Policy Dialogue

Measurement Gap

- **STEP Study**
- Surveys adults (ages 15-64) and employers
- Measures skills supply and demand
- Currently piloting instruments, with rollout planned in 13 countries

Policy Design Gap

- **SABER-WfD program**
- Focuses on countries' policies and institutions for workforce development
- Currently prototyping instrument in 5 countries, with a pipeline of new starts

Evidence Gap

- **Rigorous impact evaluations**

  Focuses mainly on ALMPs; for some examples, see www.worldbank.org/sief
- **South-South Exchange**

  Examples: Feb 2009 Study Visit to India (Skills for IT Industry); Nov. 2010 study visit to China and India on TVET systems

Thank you

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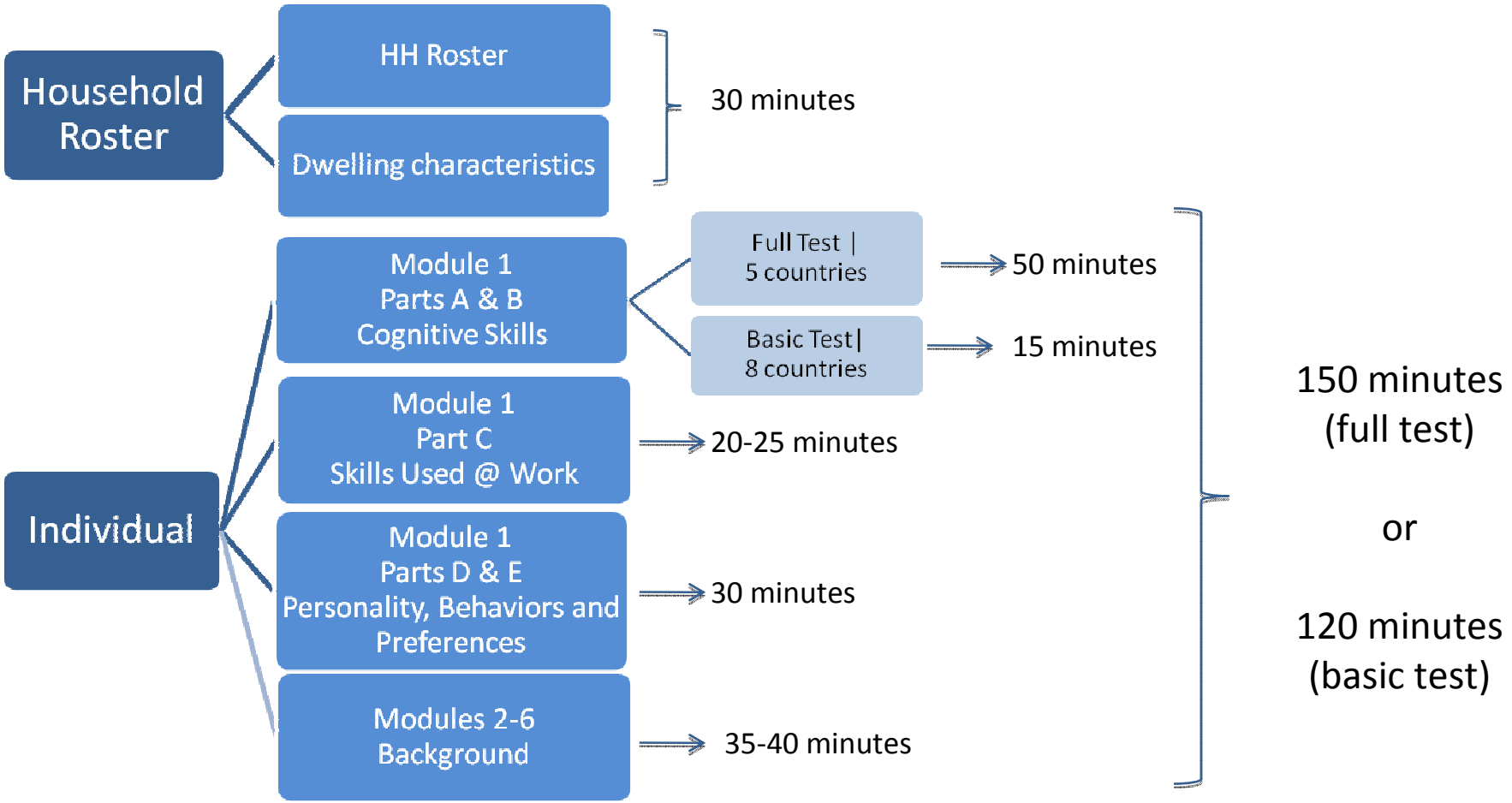
Structure | Household Survey



Measuring Cognitive Skills

- Two approaches:

  - Direct Assessment
    - Test of reading literacy; linkable to the PIAAC scale (survey currently underway in OECD countries)
    - Module developed by the Education Testing Service (ETS)

      Examples

      - **Prose Items-** Read the label on a medicine bottle and answer "What is the maximum number of days you should take this medicine?" and "List three situations for which you should consult a doctor"

  - Self-Reported Assessment
    - Measures of literacy and numeracy

      Examples

      - Do you ever use or calculate fractions, decimals or percentages?
      - Do you ever use more advanced math, such as complex algebra, geometry, trigonometry, calculus, or inferential statistics?

Measuring Non-Cognitive skills

- Non- Cognitive Skills
  - Assessment of social literacy, including personality traits and behaviors
  - Big Five Inventory, Self-Control, Core Self-Evaluation, GRIT
  - Time and risk preferences

Examples

In a scale of 1 to 5, I see myself as someone who:

— Pursues my goals in spite of setbacks

— Is inventive

Measuring Technical (Skills Used @ Work)

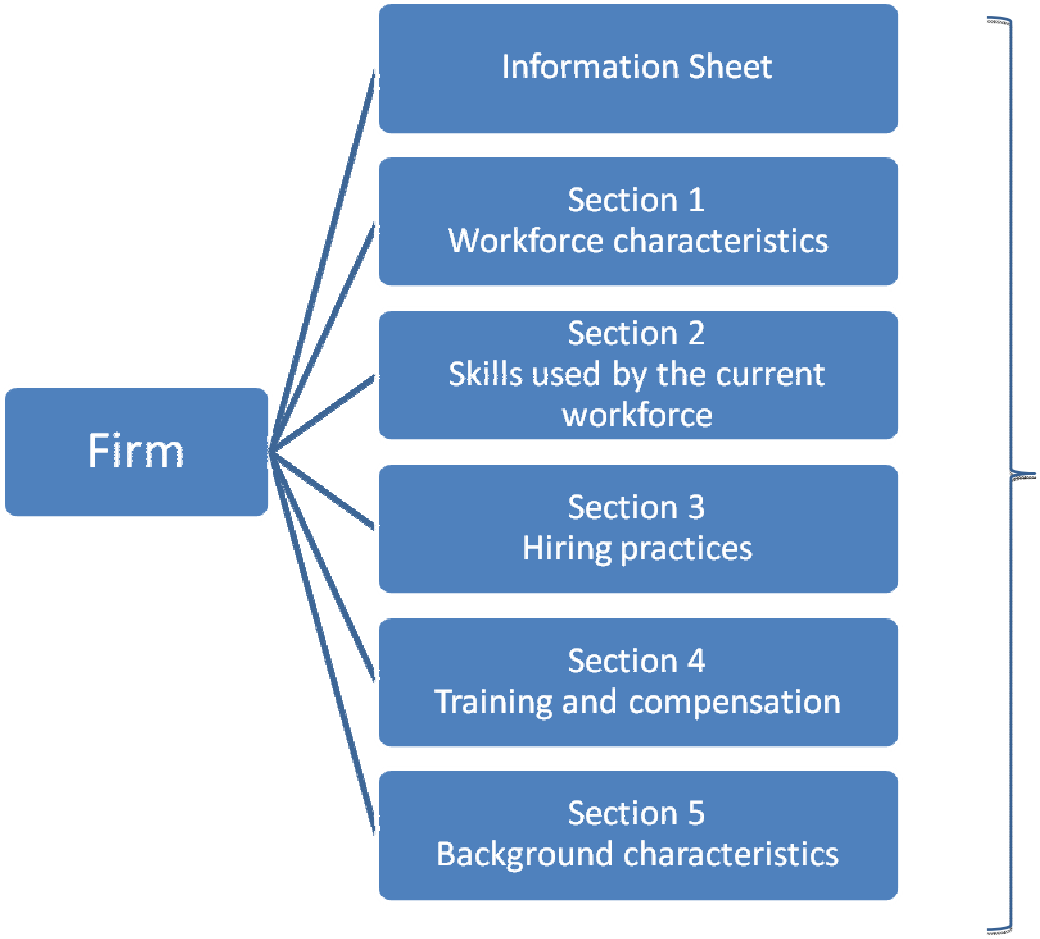
- Self-reported
  - Measures of competence to perform defined tasks

    Examples

    —As part of your work, do you use a computer to do data entry or fill out forms?

    —How much of your workday is spent doing physical tasks such as standing, handling objects, operating machinery or vehicles, or making or fixing things with your hands?

Structure | Employer Survey



45-55 minutes

Employer Survey Questions

- Skills Used- Examples

  Example

  - What is the highest level of computer use needed in this job? (5 levels)

- Hiring practices

  Example

  - Includes quantitative evaluation of hiring difficulties, methods and selection criteria