Australian Government

Department of Foreign Affairs and Trade

Diplomatic Academy.

Education Learning and Development Module

EDUCATION SECTOR WORKFORCE PLANNING

Foundation Level

2019

CONTENTS

ACRONYMS

DFAT Australian Government Department of Foreign Affairs and Trade

ICT Information Communications Technology

LPPA 2009/10 Annual Progress Report, SEDIA Program

ODE Office of Development Effectiveness, DFAT

SD Primary (Indonesia)

SEDIA Support for Education Development in Aceh

SMA Senior High (Indonesia)

SMK Vocational High (Indonesia)

SMP Junior Secondary (Indonesia)

TK Kindergarten (Indonesia)

1   INTRODUCTION

The purpose of this module is to provide introductory information about the structure of the education sector workforce, critical roles and steps required for education sector workforce planning, and key challenges. It provides a foundation to engage in this topic and apply advice from staff with operational or expert levels of knowledge in education. On successful completion you will be able to be an informed participant in forums related to education sector workforce planning.

2   EDUCATION SECTOR WORKFORCE

Defining the education sector workforce

The education sector can be broadly defined as all formal and informal learning opportunities provided by government and non-government agencies from early childhood to tertiary level education. The education sector workforce comprises of all the women and men who work in this sector. The education sector workforce is divided into two main categories:

- teaching personnel – mainly teachers and principals, but sometimes including supervisors, advisors, and teacher trainers/educators

- non-teaching personnel – employees with responsibilities for education management, oversight and administration.

Workforce governance and levels

In some countries, the education sector may be governed centrally, with administrative functions performed at the national level. However in many countries there will be two or three or even four layers of decentralisation e.g. national, province or state, district or city, sub-district, cluster or village. In decentralised education management, the chief responsibility for policy, planning and regulation is usually retained at the national level, with service delivery, program performance and some budget functions – including personnel management – administered at other levels.

Specific categories of the education workforce are discussed in turn.

The role of teachers

Teachers assist students to learn. To do this, teachers must know how to inspire, motivate and challenge pupils and promote good progress on learning outcomes. If this is to be done well, teachers must have: good subject and curriculum knowledge; be able to plan and teach well-structured lessons; assess students' learning; and provide a constructive learning environment.

Most countries have developed teaching standards to direct the way teachers perform their role. In many developing countries teaching standards are highly ambitious and may lack effective monitoring and quality assurance systems. The extent to which teachers

meet these requirements may be very low. Improving the capacity of teacher education institutions to prepare teachers (pre-service training) and strengthening the capacity of in-service providers to continue teachers' development, are key tasks of teacher workforce planning.

> *'It is clear that the standards need to be: owned by teachers themselves rather than imposed if they are to work effectively in improving teaching and learning; perceived as fair, challenging, and helpful in providing feedback to teachers on their performance; capable of affording due recognition to teachers when they improve their performance; valued by employers; used in key teacher management decisions; and respected by the public as an authentic measure of what teachers know and are able to do'.*

Source: Allemano E, Baumgart N, Chapman D, Craig H, Kraft R, Rawlinson R, Thornton H 2009, Teacher development and management: overview of policy briefs.

The role of principals

Principals have overall responsibility for a school including: the learning outcomes of students; the quality of teaching; the performance management and professionalism of teachers; school and community relations; managing all the resources of a school; and reporting on their school and students' progress.

The specific responsibilities of principals can be divided into professional leadership and school management, although it is clear that the two areas often overlap.

Principals' professional leadership tends to focus on:

- the quality of the teaching and learning process
- leading their school's improvement through identifying and supporting student and teacher development needs
- recognising and valuing teachers and their work
- aligning teachers' work with educational priorities and standards.
- ensuring that both teachers and the school are accountable for what they do.

Principals' school management tends to focus on:

- managing the human, physical and financial resources of the school
- ensuring a safe and secure learning environment
- reporting on student and school performance to the community
- using data effectively to continually improve the school.

The role of teacher educators

Teacher educators generally provide pre-service training/education and in-service continuing development as part of the overall responsibility of the national or provincial education department/ministry. These programs are usually provided through government

and private (including faith based) colleges of education.

The broad role of pre- and in-service teacher education programs is to:

- ensure up-to date knowledge of specific subjects
- provide pedagogical (teaching and instructional methods) knowledge, skills and experience
- provide opportunities for teaching practice or observation of teaching practice
- develop professionalism and particular values
- provide educational, intellectual and personal development.

Pre-service Education for teachers may take various forms. For example, a tertiary level program may consist of a bachelor degree followed by one year of professional training (3 + 1), or an integrated 4-year program including study of education theory, subjects and curricula and teaching methodology. Many governments use scholarships as a way of increasing the supply of teachers. This can be an effective way of improving gender equity and representation of minorities in the workforce. Provision of scholarships for pre-service training also helps to ensure that institutions receiving the funding conform to national standards.

In-service education refers to qualifications and skills gained by practicing teachers. In service education can occur formally, by obtaining a qualification, or informally though ongoing training and in-service experience.

Non-formal learning comprises of the development of skills and/or expertise through ongoing training (non-qualification) for teachers. Teachers learn from the practice of teaching itself (for example when stopping to consider a struggling student's response to a homework question); conversations with other teachers; observing in a peer's classroom; results from a supervisor or mentor's visit; reading; attending conferences; district workshops and other informal modes of skills acquisition.

There are two main circumstances in which teachers may be required to obtain a *qualification* while working:

1. Aligning qualifications with new policies or laws on new minimum requirements for serving teachers. For example, elevating a certificate qualification to a diploma.

2. Meeting government qualification requirements in countries that have employed untrained teachers to cope with expanding student enrolments.

An activity for you

Think about your country program or a developing country known to you and answer the following questions.
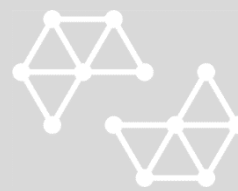
What types of teacher education programs are you familiar with?

Do you know if principals (or head teachers) are given training in leadership or management?

Does the Australian aid program support either of these?

The role of ministries (or departments) of education

Ministries of Education and their staff have core functions, some of which are shared by other levels of government or institutions depending on the level of decentralisation, the governance structure for private education and the capacity of tertiary institutions. Core ministry roles include the following elements listed below.

- Education regulation, policy, monitoring and review covering all aspects of the sector, including: curriculum development; assessment; special programs; education standards; and education workforce management.

- Education financing: the education workforce is in all countries the largest expenditure item in the education budget.

- Education planning, including: workforce projections and planning.

- Human resources, including: provision of teachers and non-teachers; standards for teacher qualifications, competence and management; in-service and performance assessment.

- Provision of school infrastructure, including: buildings; equipment; furniture; and transport.

- Information and data management, research, and innovation.

Most staff in ministries and sub-national offices are public service staff (public servants). They may enter the ministry via an entrance test, through promotion within the education workforce, or internal transfer. Many countries struggle to build the capacity and skills of their ministry staff, and public service reform is high on the agenda in many country contexts.
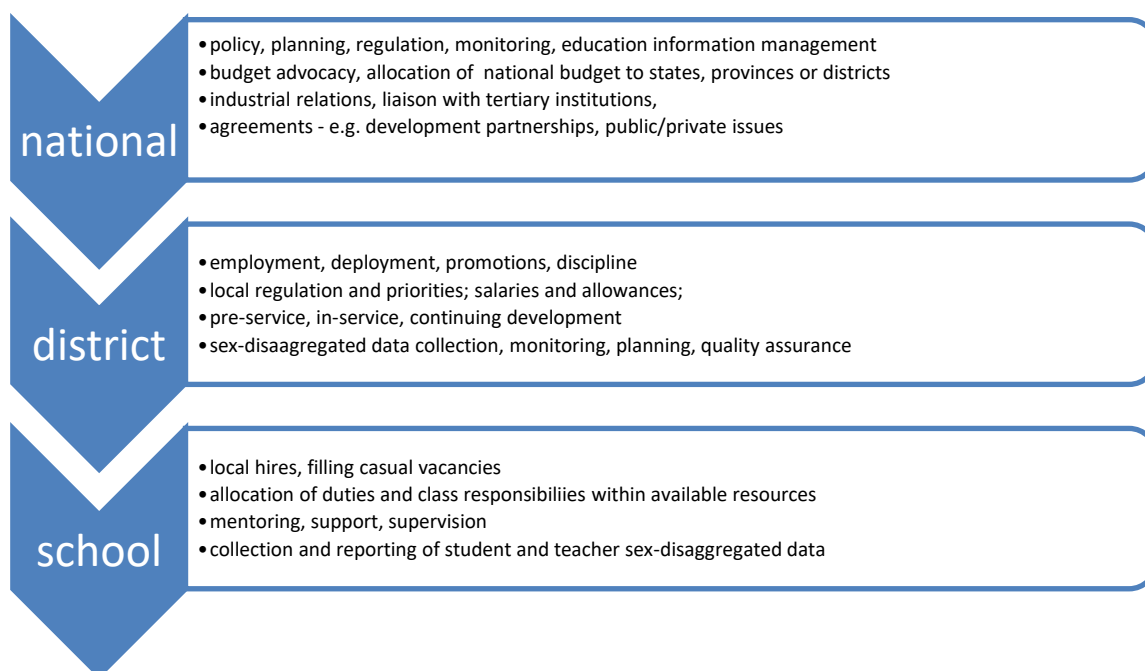
Ministry working environments may have little infrastructure or professional support, and often offer low salaries. Some countries have established a Public Service Commission to oversee policy, conditions, performance management and capacity development of the public service across all sectors of government.

3 CRITICAL GOVERNMENT ROLES FOR EDUCATION WORKFORCE DEVELOPMENT

Sharing of responsibilities for education sector workforce planning and management

The relationship between the different parts of the education workforce depends on the degree of decentralisation, how functions have been distributed between the levels of government and the capacity of personnel. How well these systems interact is a critical issue for successful workforce management and planning. The flow chart below outlines typical responsibilities at national, district and school level:

national
- policy, planning, regulation, monitoring, education information management
- budget advocacy, allocation of national budget to states, provinces or districts
- industrial relations, liaison with tertiary institutions,
- agreements - e.g. development partnerships, public/private issues

district
- employment, deployment, promotions, discipline
- local regulation and priorities; salaries and allowances;
- pre-service, in-service, continuing development
- sex-disaagregated data collection, monitoring, planning, quality assurance

school
- local hires, filling casual vacancies
- allocation of duties and class responsibiliies within available resources
- mentoring, support, supervision
- collection and reporting of student and teacher sex-disaggregated data

Understanding how the different parts of the workforce intersect is an important precursor to assessing five important functions that affect the development of the education workforce. These may be directed from the Ministry of Education, although some functions will fall to other government ministries.

1. Finance

The national Ministry of Education has the role of advocating for education finance as a share of the overall budget of the government, preparing budgets, distributing funds and monitoring expenditure. Depending on the form of decentralisation, the education authorities at a sub-national level may also have budgets and undertake financial planning, disbursements, procurement, grants and monitoring of expenditure.

Note: Please see modules *Education Financing.*

2. Paying teachers and principals

The teachers' payroll may be managed and maintained at the national or subnational level – and can even be managed at the individual school level. In some countries, for example in Papua New Guinea, all teachers are employed and paid by the Teachers Service Commission. In many developing countries, there are ongoing challenges in the timely remuneration of teachers and principals.

3. Human resource management and development

Managing and developing the human resources for education is a complex set of tasks, including:

- appointing – and managing – teachers, principals and non-teaching personnel

- re-training teachers for new and evolving roles

- managing the deployment of teachers across the system

- liaising with tertiary institutions about the nature and provision of pre-service education and training – particularly during periods of curriculum reform

- the selection of applicants for teaching, non-teaching and ministry positions

- managing teachers' welfare issues

- providing in-service training.

An important human resource management and development issue is teacher performance, especially systems to deal with underperforming teachers and high levels of absenteeism. It is equally important for human resource management to have systems for identifying and rewarding excellent teacher performance.

4. Monitoring and reporting, including quality assurance

The timeliness and accuracy of school level data (including sex-disaggregated data and data on disability inclusion) is very important to effective education sector workforce planning. It enables governments to track trends in pupil numbers, monitor staff: student ratios, and use the data for planning purposes and for budgeting.

5. Communications and community engagement

Formal communication with stakeholders at various levels is a key function of an education system. This can include mandatory reporting, public relations products, formal meetings and community consultations. These all play a key role in ensuring parents and other stakeholders are aware of expected education standards, and the progress of their school.

An activity for you

Think about your country program or a developing country known to you and answer the following questions.

Does the Australian aid program support capacity development of staff in the five policy areas identified above? Is support provided at the national or sub-national level?

What are some of the key challenges you think need to be addressed?
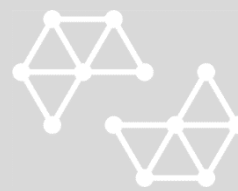
4   EDUCATION WORKFORCE PLANNING

Why is education sector workforce planning important?

Provision of education is one of the highest priorities for all countries. The fast pace of change in aspirations, achievements and human resource requirements means that countries require an education and training workforce that is:

- highly literate and numerate

- adaptive and flexible

- equitable

- able to renew itself professionally to keep pace with development objectives, including economic growth aspirations and the Sustainable Development Goals.

Education workforce planning is necessary to achieve an equitable, effective and efficient education system. This will help to ensure:

- the efficient management of the education system, at all levels

- enough teachers – now and in the future – who are qualified, supported, supervised and paid appropriately.

Teachers' salaries typically comprise the biggest proportion of expenditure in an education budget, requiring careful management for its provision. Effective workforce planning allows for realistic planning and provision of investment in teachers.

Effective workforce planning in the education sector requires strategic thinking about the development aspirations of a country, underpinned by accurate data and the effective use of technology (for planning). Good planning and collaboration across levels of government, private stakeholders, development partners and non-government organisation will also enhance the ability to mobilise human and fiscal resources.

A model for workforce planning

Education sector workforce planning represents a comprehensive approach to ensuring the sufficient supply of qualified teachers and education personnel for current and

projected needs. The workforce must be affordable and sustainable, and provide education opportunities equitably and with equal levels of access.

Planning requires accurate data from several sources, projection of various scenarios, and financial modelling. Relevant, recent and comprehensive data will provide the evidence base for governments to phase in desired changes to achieve their objectives of improving or expanding education. Development partners often take a significant role in helping to meet the investment costs and to support capacity development of teachers, principals, teacher educators, education planners and administrators.

The following diagram shows the typical workforce planning cycle. This is followed by a discussion of important data and processes needed for planning.
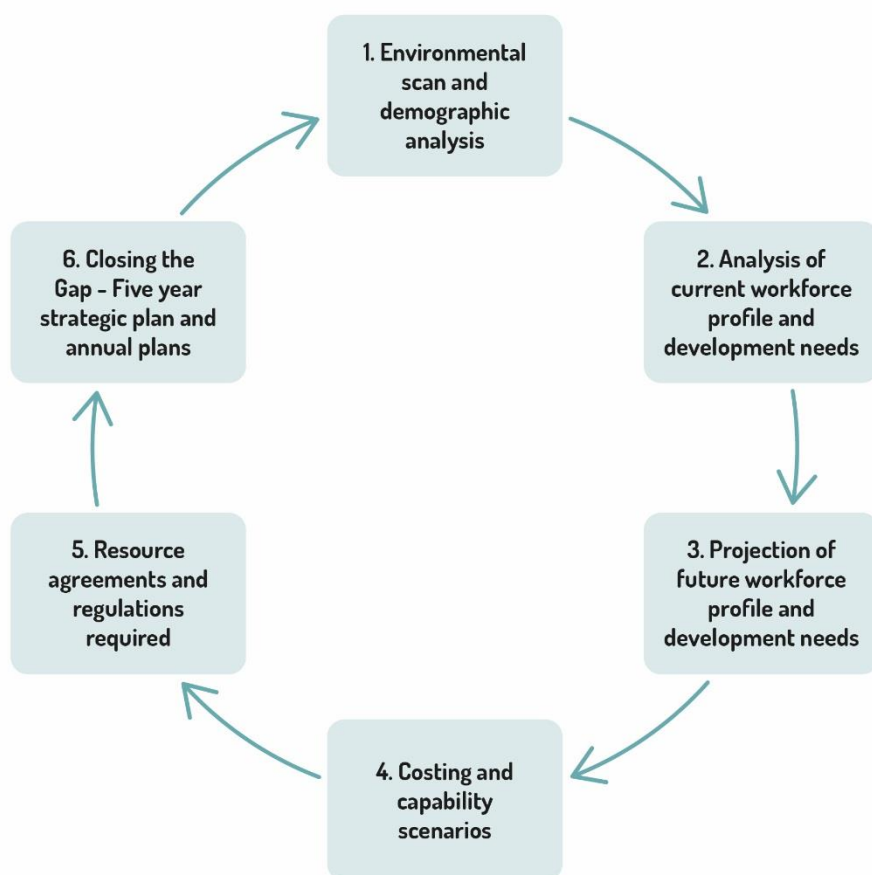
Figure 1: Typical workforce planning cycle

Table 1: Data processes needed for education sector workforce planning

| Phase in cycle	Processes and data required
Environmental scan and demographic analysis	Analysis of: Census data; socio-economic data; current achievements; regional disparities in inputs and outputs; access and student attendance, drop-out, transition; expenditure patterns; results of assessments; relevant studies e.g. World Bank Public Expenditure Review; and the regulatory framework. Public/private trends and issues; audit assessments; economic forecasts; employment outlook.
Analysis of current workforce - profile and development needs	Analysis of: Workforce profile by age, gender, qualifications, status, language/ethnicity; analysis of public service capacity and needs; analysis of teaching and public service regulations and employment practices. Numbers and distribution of teachers; qualifications; estimated needs for upgrading; for development; access to professional development modes.
Projection of future workforce profile and development needs	Demand side: Demographic projections, census data, birth-rate trends, infant and child mortality rates and projections, population pyramid. Supply side: projections from workforce data above
Costing and capability scenarios	Unit costs; program costs; escalations; scenario planning; risk analysis; institutional and organisational capacity assessments; governance assessments.
Resource agreements and regulations required	Governance requirements for all levels: draft regulations; memoranda of understanding; management training.
Closing the Gap: Five-year strategic plan and annual plans	Medium-term planning and consultation.

An example of education workforce planning – determining whether more teachers are needed

The two graphs that follow show historical data from a World Bank Indonesian Education Public Expenditure Review. The growth in numbers of students compared with growth in number of teachers in the Graph 1 makes it evident that the teacher workforce has increased more rapidly than the student population. In Graph 2, this affects the teacher: student ratio in subsectors of the education workforce.

Note: For the primary subsector, (SD) in Graph 1, there was only a small growth in student numbers between 2004 and 2010 but almost 30 per cent growth in teachers. This is clearly shown in the big drop in student: teacher ratios (blue line on Graph 2) which has been a trend since 2001. The average teacher ratio reached about 17:1 in 2010, a drop from 23:1 in 2001.

These ratios can be compared with the required standard specified by law. In Indonesia official policy is for student teacher ratios of 32:1 for primary and 28:1 for junior secondary levels.

Graph 1: trends in growth of students and teachers

Index (2004 = 100)
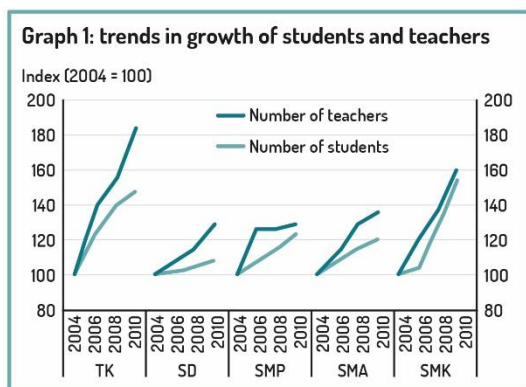
TK = Kindergarten; SD = Primary; SMP = Junior Secondary; SMA = Senior High; SMK = Vocational High

Graph 2: student teacher ratio trends by sub–sector
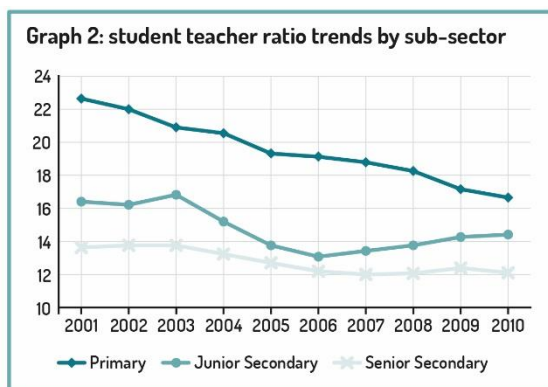
Source: The World Bank 2011, Indonesian Education Public Expenditure Review

An activity for you

Using the previous World Bank graphs above answer the following questions.
Which sub-sector/s have an increasing student: teacher ratio?

Assume that the Indonesian Government does anticipate growth in student numbers from enrolment campaigns or demographic trends – does Indonesia need to train more primary teachers?

5   EDUCATION SECTOR WORKFORCE PLANNING CHALLENGES

Three major education sector workforce planning challenges

Countries face many problems and challenges in planning and managing the education sector workforce. These are most keenly felt in remote and difficult-to-access areas.

Gender equality in education sector workforce planning

Education workforce data tends to show women are frequently concentrated in specific segments of the education labour force. Women are less likely than men to be in senior professional, managerial and policy making roles at both the national and sub-national levels. Women are less likely to be principals, head teachers or members of school committees.

Addressing the lack of female teachers is a significant element in making education more acceptable for girls, especially at secondary level. In South and West Asia only one third of teachers are female, decreasing further at tertiary level. A global survey shows that the absence of women teachers is perpetuated by the lack of opportunities for girls and women to access the required skills and training. Those women who do enter teaching can suffer significant gender discrimination. In contrast, regions where the teaching profession is feminised are characterised by low status and pay for the profession.

Source: Global Campaign for Education 2012, Gender Discrimination in Education: the violation of rights of women and girls

Low system capacity

The ability of education systems to undertake effective workforce planning at both national and local level is seriously hampered by the variable quality of data on students and teachers. This is especially so from isolated schools and districts. It is also due to:

- the low level of staff with sufficient analytical skills
- the frequent omission of sex-disaggregated data
- the low capacity of district staff to collect data
- difficulties in visiting schools to solve problems and provide support and supervision to schools
- uneven funding flows from national to district and school levels
- delays in paying teacher salaries and allowances.

The sometimes incomplete or too rapid decentralisation processes can result in conflicting regulations, the creation of data ambiguity, unclear levels of oversight and policy loopholes.

Regional disparities

Uneven distribution of qualified teachers means socio-economically disadvantaged areas can become more disadvantaged, due to a lack of qualified teachers. Small or isolated schools have special problems in that they may not have many qualified staff, they may be cut off from professional support, and they may face the more difficult challenges of providing multigrade teaching.

In many remote areas, teacher absenteeism is high and various forms of financial incentives (e.g. teacher housing) may not be effective in attracting or retaining qualified teachers.

An activity for you

How would you describe the gender balance in the education sector workforce for your country program, or a developing country known to you?

Please consider the gender balance amongst the Ministry of Education, administrators, teachers, school principals and school management committees.

6   CASE STUDIES

The Office of Development Effectiveness (ODE) Brief 'Investing in Teachers' provides useful discussion and case studies that demonstrate education workforce planning. The ODE Brief should be read as a companion to this module.

The following case studies present some additional education workforce examples.

Case study 1: How workforce analysis influenced local decision-making in Aceh Province, Indonesia

In 2008 – 2012, the Aceh provincial government was supported by the Australian aid program, through the Support for Education Development in Aceh (SEDIA) program, to use evidence for policy and management. The production of the 2009/10 Annual Progress Report (LPPA) was the first comprehensive picture of the education workforce. The LPPA compared Aceh province with national data and other provinces and found that the ratio of students to teachers in Aceh primary schools was 11:1 compared with a national average of 17:1.

The LPPA compared the situation between districts within the province and the differences in the supply of specialist teachers at junior secondary level, highlighting both teacher over-supply and uneven distribution of teachers within the province. These were critical factors impacting on the efficient and effective use of budget.

The following graph is taken from the 2010 Annual Progress Report. It shows the numbers of junior secondary subject teachers in Aceh compared with estimated requirements.

Graph 3: Numbers of junior secondary subject teachers in Aceh compared with estimated requirements
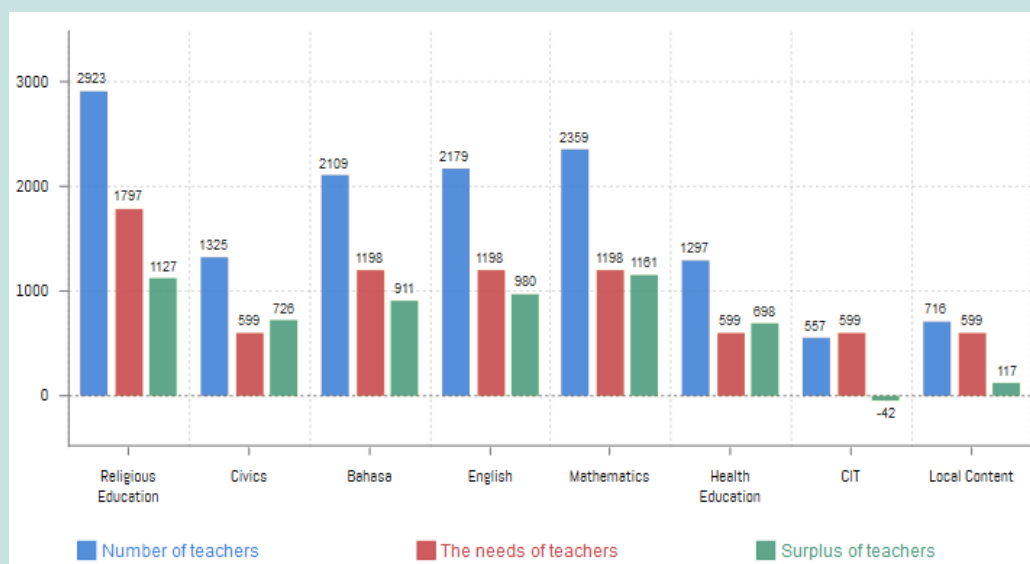
What do we learn from this presentation of data?

Only in one area, Information and Communications Technology (ICT – shown as CIT in the graph), will more staff be needed. On the other hand, by comparing the red and blue bars (number of teachers, need of teachers), in many other subject areas there is an over-supply of up to 50 per cent.

What happened?

Initially there was resistance to the findings from district elected officials and staff. The provincial planning group responded to this with a Road Show, consulting with district staff to validate the data and explain the findings. The Road Show was a watershed event that established the legitimacy of **data for decision-making**. It also demonstrated the importance of monitoring to improving management. In response to these findings, four districts in Aceh froze teacher recruitment and immediately began to prepare regulations on teacher recruitment and distribution to increase efficiency. Nine mayors issued a press statement to the effect that they would be taking action to improve the distribution of teachers.

Case study 2: A comprehensive approach to education sector workforce planning in Indonesia

Indonesia provides an interesting case study of a reform program that addressed many aspects of teacher workforce planning. Since the introduction of decentralisation in 2000, district governments have been responsible for the delivery of education services. However, reviewing the situation in 2004-5, it was clear that effective management of the teaching workforce was uneven across the country, especially in the many new districts that had been created. The government was concerned at the high percentage of teachers who were under-qualified or not qualified and the lack of any systematic plans to improve the situation. Over 45% of primary teachers did not have education qualifications beyond high school graduation.

What did the Indonesian government do?

In 2005, the Indonesian government passed a law (Teacher and Lecturer Law 14/2005) containing a comprehensive set of reforms to improve the quality of teachers and, by extension, the quality of learning. It defined the competencies required of teachers and the roles of universities and levels of government in ensuring that teachers were able to meet these. The reform package included plans to ensure:

- all teachers had the equivalent of a four-year bachelor degree

- establishment of competence standards and processes for up-grading teachers

- certification of competence

- quality assurance

- continuous professional development.

- a doubling of salary for teachers who were both qualified and certified.

In the first stage of implementation:

- A special Directorate-General was established in the national Ministry of Education to drive the reform process (2004).

- The data base of approximately 2.7 million teachers was reviewed and a new system with a unique ID for each teacher established.

- An analysis of the current workforce was undertaken to provide data on qualifications held, service classification (civil servant or other, public/private), subjects taught, age, gender and years to retirement.

- Costing studies were undertaken on the impact of certification and how this could be phased in, taking account of the age of teachers and retirement dates.

- Studies were conducted on the variations in student: teacher ratios across the country and between different types of schools.

What happened?

The implementation of the reform package was planned in detail and targets established for each year to 2015 when it was planned that every teacher on the public payroll would be qualified and certified.

The improvement in teacher qualifications and certification has been proceeding on track. However, the level of qualifications held by teachers in rural areas was far lower than teachers in urban areas; and there was evidence of overstaffing in urban areas and understaffing in rural areas.

In a study of the effects of these Indonesian education reforms, De Ree *et al* found that there was a permanent doubling of teacher salaries and reforms significantly improved measures of teacher welfare. Teachers benefiting from the reforms had higher income, were more likely to be satisfied with their income, and were less likely to report financial stress. Yet, despite this improvement in incumbent teachers' pay, satisfaction, and time available to focus on their main job (due to a reduction in second jobs), the policy did not improve either their effort or student learning (student test scores in language, mathematics, or science were not affected by the reforms).

De Ree *et al* conclude that their results do not imply that salary increases for public employees would have no positive impacts on service delivery in the long run through extensive-margin impacts but contribute to a more informed discussion on the cost-effectiveness of such a policy.

Source: De Ree J, Muralidharan K, Pradhan M, Rogers H 2017, Double for nothing? Experimental evidence on an unconditional teacher salary increase in Indonesia

7   TEST YOUR KNOWLEDGE

Assessment questions

Answer the following questions by ticking 'True' or 'False'. Once you have selected your answers to all the questions, turn the page to 'The correct answers are...' to check the accuracy of your answers.

Question 1

The primary objective of education sector workforce planning is to recruit teachers for the future.

Is this statement true or false?   ☐ True   ☐ False

Question 2

The teachers' payroll is always managed at the national government level.

Is this statement true or false?   ☐ True   ☐ False

Question 3

Understanding future education demand is often drawn from census data.

Is this statement true or false?   ☐ True   ☐ False

Question 4

Gender inequality is a wide-spread problem in the education sector workforce.

Is this statement true or false?   ☐ True   ☐ False

Question 5

Education systems in developing countries have adequate data on teachers and students to inform their workforce planning.

Is this statement true or false?   ☐ True   ☐ False

The correct answers are...

Question 1

The primary objective of education sector workforce planning is to recruit teachers for the future.

This statement is false. The objective of workforce planning is not only to recruit teachers, but covers all people needed in the sector.

The education sector workforce plan covers all the people who currently work in the sector including principals, teachers and non-teachers (such as administrators, casual hires and volunteers). Education workforce planning also provides a forward workforce plan.

Question 2

The teachers' payroll is always managed at the national government level.

This statement is false. Teachers' payroll can be managed at national and sub-national levels, and can even be managed at the individual school level.

Question 3

Understanding future education demand is often drawn from census data.

This statement is true. Understanding future education demand is often drawn from census data. Census data and demographic analysis such as birth rates, population projections and population movements (e.g. urban drift) are important tools in understanding the future demand for education, which in turn informs education workforce planning.

Question 4

Gender inequality is a wide-spread problem in the education sector workforce.
This statement is true. Gender inequality is a wide-spread problem in the education sector workforce. Evidence shows that women are less likely than men to be in senior education

professional positions; this is perpetuated by the lack of opportunities for girls and women to access the required skills and training to be competitive for senior roles.

Question 5

Education systems in developing countries have adequate data on teachers and students to inform their workforce planning.

This statement is false. Education systems in developing countries often do not have adequate data to inform workforce planning. Education sector workforce planning is often made more difficult by the poor quality or availability of workforce and student data, insufficient details on gender and disability, and the limited analysis of available data.

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World Bank 2011, Indonesian Education Public Expenditure Review

United Nations n.d, Sustainable Development Goals, https://www.un.org/sustainabledevelopment/

Learn more about…

- *Workforce development, found at,*
  http://saber.worldbank.org/index.cfm?indx=8&pd=7&sub=0

- *Teachers' standards, found at,*
  http://www.education.gov.uk/schools/leadership/deployingstaff/a00205581/teachers-standards1-sep-2012

- *The Aceh Province Education Annual Education Report (2010) was used as a basis for the case study, found at,*
  http://www.protectingeducation.org/sites/default/files/documents/country_report_-_aceh.pdf