Technological advances and the industrial transformation that go along with it—integral as they are to inclusive growth for developing and emerging economies in Asia—motivate people to improve their skills and to search for better life prospects. However, developing human capital and skills to meet rapidly changing jobs has become more complex and involves better matching supply with demand, educational reforms, and governability. As such, evidence-based approaches and tools are needed that enhance worker employability and productivity and inform policy discussions and recommendations.

ADB-Asia Think Tank Network (ATTN) members met in Canberra, Australia on August 22–23 to share research findings and exchange ideas for upgrading human capital and skills initiatives in Asia. It helped improve understanding of how Asia’s developing countries and their institutions can best take advantage of the opportunities emerging in the digital age, while addressing the attendant challenges for labor markets.

**New Technology and Jobs and Implications for Education and Skills**

Structural transformation and technological change are alerting labor markets and the desirable education and skill sets of workers. The speed, magnitude, and challenges that technologies such as automation, information technology, and artificial intelligence bring to labor markets—and the needed human capital and skills development—call for comprehensive educational reform, needs-based vocational training, continuing education, and regular updating of policies and programs.

Governments across Asia and the Pacific have initiated and implemented various policies and programs, and good examples and models exist. But good implementation matters. In the past, developing economies in the region had extensive experience in adapting to changing economic structure formally and informally through education and skill building programs. Today, these efforts must be upscaled not only via states initiatives but also, by private sector.

**Reforming Education and Skills Training**

Both globalization and technology advancement need access to pools of human capital with skills, and jobs involving cognitive and non-routine tasks in many parts of Asia are on rise. Countries are trying to reform education and skills development policies and programs. However, supply and demand are often mismatched in most countries in the region, especially among highly educated cohorts. The lack of a productive learning environment and an inadequate industry–academia–government nexus contribute to low-quality training programs.

As noted, it is essential that education is upgraded to build an appropriate foundation of skills and professional knowledge. Early childhood, primary, and secondary education that nurture ability to learn are crucial, as are other soft skills that enhance employability and productivity. Likewise, training a new breed of educators is needed, especially in science and technology, to ensure the quality of education.
Technical and vocational education and training (TVET) curriculum needs comprehensive review of its skills and their suitability to demand. Blended programs that provide on-the-job training for TVET trainees is found to provide smooth transition from training to employment. While it is important to target skills in demand, too narrow a focus on skillsets may reduce the employability of trainees as the shelf life of skills shortens dramatically. Many countries are trying to destigmatize TVET through better branding and making it available for people to upgrade their skills.

Demand for tertiary education in the region is growing. But skills and information mismatches currently result in high unemployment of graduates, when employers are finding it difficult to find qualified workers in sectors such as information sciences. Skills acquired in higher education must be updated to reflect new technologies. Information on job prospects and career development options is also needed for students (and guardians) to make informed choices on academic discipline.

In addition, especially as working life grows longer as longevity increases, well-designed life-long learning programs should be put in place to suit changing jobs and meet the learning needs of workers of all ages, formal and informal. Countries are encouraged to learn from various institutional models that exist in the region, which are accessible through various networks, such as the Global Development Learning Network.

While women’s participation in the labor force has significantly increased in some countries, wider gender gaps persist in several countries. Women participate less in technology-driven labor markets and they face employment conditions and career prospects that are coming up against “ceilings”. Achieving gender quality, while reforming education and skills training, is imperative for reducing inequality.

Finally, for the employed, policies should be in place to incentivize firms to promote “upskilling” at the workplace by allocating more funds to skills development of employees—through tax exemptions and other means. For workers in informal sectors, including freelancers and those in the “gig” economy, who have no access to these provisions, subsidies or other forms of support are needed that can help workers brush up skills.

**Mobilizing Financial and Human Resources through Tax, Other Policy Reforms and Partnerships**

Resource mobilization through better tax systems and cost sharing are imperative to sustainably advance education and skills training. Funding instruments and financing models should be clustered according to national development priorities in strategic sectors for achieving higher productivity and social welfare.

Public-private partnerships in skills development programs may not only address resource constraints, but also help update and build precise skills that industries require. For example, creation of business advisory boards that provide guidance on what skills are needed can help update TVET curriculums. Private donations and social enterprises matter in building innovative and accessible training platforms using new technologies. International remittances remain a poorly informed and underutilized choice of financing human capital and skills development in many Asian developing countries.

Despite the growing demand for education and skills, resource constraints persist. Many models exist on how tertiary education can be financed—free, subsidized, or those with or without student loans—which are either based on time-bound or income-contingent payment. Such models have their own
merits as labor market and migration scenarios change. If return to education is high, then financing through loans, especially through income-contingent payment, will be a possible solution. But, in developing countries, issues of educational quality and high unemployment among educated groups must be tackled first for such systems to be implemented.

In perusing the diversification of resources and service providers of human resource development, the government must put in place a set of standards and effective certification systems to ensure quality. Service providers must demonstrate ability to provide education and training that consumers have paid for. Regular visits and reporting should be done to monitor quality.

**Improving social protection to mitigate the negative consequence of disruption**

While new technologies boost efficiency and productivity, they can cause unemployment and widen inequality. Technology can replace low-skilled repetitive jobs, such as assembly line workers, threatening the replicability of success stories based on manufacturing and export-led industrialization models. Encouraging acquisition of new skills may cushion the impact of automation, but not prevent disruption. Broader social protection matters.

Empowering the young and ageing work force to adapt to technological advances not only helps social protection, but it is also smart economics. In addition to upskilling workforces through public and private education and skill development programs, alternate learning opportunities for low-income households and youth that addresses particular vulnerability can provide broader safety net.

In many countries, the need for social protection is high in rural or geographically remote and isolated areas. Proposals such as uniform tax hikes and basic incomes are not workable at the regional level, but strategic funding instruments such as subsidies and joint ventures between public and private agencies, targeting rural areas, are needed to create equitable growth.

A growing number of workers in informal and non-standard contractual employment, international, national, and local, pose new challenges in providing social protection, which are traditionally linked to standard contractual workers.

**Strengthening Regional Cooperation on Human Capital and Skills Development**

Potential in the region to collaborate more on human capital and skills development is increasing. This includes developing and sharing educational and training platforms. Evidence suggests that cost-effective, cross-border learning and sharing of experience is possible through networks, such as the Global Development Learning Network.

International migration affects most countries. The availability of information on globalized labor supply and demands, skill set requirements, migration processes, and the social protection levels of migrants themselves, vary considerably across countries. Fostering cross-border labor mobility to help develop skills, benefits the region, especially youth and women, and technical professional with hard and soft skills. As cross-border trading and services are shifting in important ways, this calls for expansion of MRA-mutual recognition agreements of skills and qualification to cover new occupations and skill-training programs. Existing commitments on harmonizing and streamlining employment visas will be critical to labor mobility.
Existing educational networks, such as the ASEAN University Network, the Association of Pacific Rim Universities, and South Asian University, could be looked into—along with regionally based techno-managerial institutions such as the Asian Institute of Technology and the Asian Institute of Management—to combine different regional data and provide appropriate real-time training and credit transfer systems with national universities. Online education by these institutes will provide education to students and labor forces beyond their borders.

The region is moving toward a model in which many individuals no longer work for a single entity, but are self-employed contractors. New approaches need regionally coordinated data management that allow supply-demand interaction across borders. Just as important will be regional agreements on taxation and social safety nets such as pensions and health care premiums.

**Future Research Agenda on Upgrading Human Development and Skills Development**

It is essential that countries closely monitor the labor market based on updated data, such as labor force surveys and active collaboration with secondary and tertiary level educational institutions, industries, and think tanks. Countries need to strengthen official statistical systems to agree how to define and measure market forces to improve human resource development. The research agenda raised by network think tanks include the following:

- What role should educational policy, tax policy, and trade policy play in capturing opportunities and addressing challenges in skills mismatches?
- What suggestions should countries consider in reforming policies toward a coordinated and effective response to the disruptive challenges that new technologies pose?
- How can we effectively evaluate the impact of education and training for quality assurance and evidenced-based policy recommendations?
- What ways can we incentivize employers and firms to upgrade employee skills?
- What are the pros and cons of technology-based education and training? Is there potential for cross-country and regional collaboration in financing them?
- What is the role of social enterprise in fostering education and skills in the region?
- What is the role of trade and its challenges in job creation and skills development?
- How comparable are the labor force surveys and information in the region and how can we best share and make use of the data?

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