



**SHORT COLLECTION
OF BEST SKILLS
DEVELOPMENT PRACTICES
IN BRICS COUNTRIES**

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Introduction

Creation of cross-cutting skills development system in BRICS countries is the foundation for building new economies

To achieve the ambitious goal of creating a cross-cutting skills development system for future markets in Russia, there is good reason to consider the experience of skills development in other BRICS countries. This will create an opportunity to build a system based on the practices of skills development relevant to the Russian economy. The present analytical research focuses on this topic, mainly on skilled workers training. Despite some significant differences in the labor market organization and skills development in Brazil, Russia, India, China and South Africa, all the countries face **common threats**:

- **High level of unemployment**, which is caused by unequal access to educational infrastructure (unequal involvement in the education ecosystem) and in the very near future it will be related to the structural changes in the economies of developing countries.
- **Potential lack of demand for unskilled labor** in the future due to complete automatization of manual operations. This will lead to the extinction of an entire class of jobs and even now it emphasises the need for advance training for new tasks.

Thus, the transition of BRICS countries to a new mode of economic systems necessitates the task of building advanced training systems in those countries.

Even today BRICS come across such challenges as:

- **India**: training and retraining 250 million professionals by 2035;
- **China**: providing 140 million skilled professionals to the labor market, at least 2/3 in the high-tech sector;
- **Russia**: creating and upgrading 25 million highly productive positions by 2020.

The risk of resource depletion, as well as low investment efficiency in the innovation sector in BRICS countries, creates a market for a new type of personnel with:

- The ability to quickly adapt to evolving technologies;
- Skills allowing the creation of stable cooperative connections during problem solving (soft skills).



The list of competencies goes beyond those mentioned above. Each BRICS country has its own stakes depending on the economy's particular features and national education system. This information is also available in the given analytical digest, which may be useful for everyone interested in dynamic change of the foundations of skills development.

Brazil

One of **the key problems in Brazil** is the high poverty rate. In 2013, the population below the income poverty line was 9.1% of the total population. Technical education and skills development programmes have become important tools to solve this problem.

Brazil bases its **skills development system** on combining aspects of *work, technology and culture*.

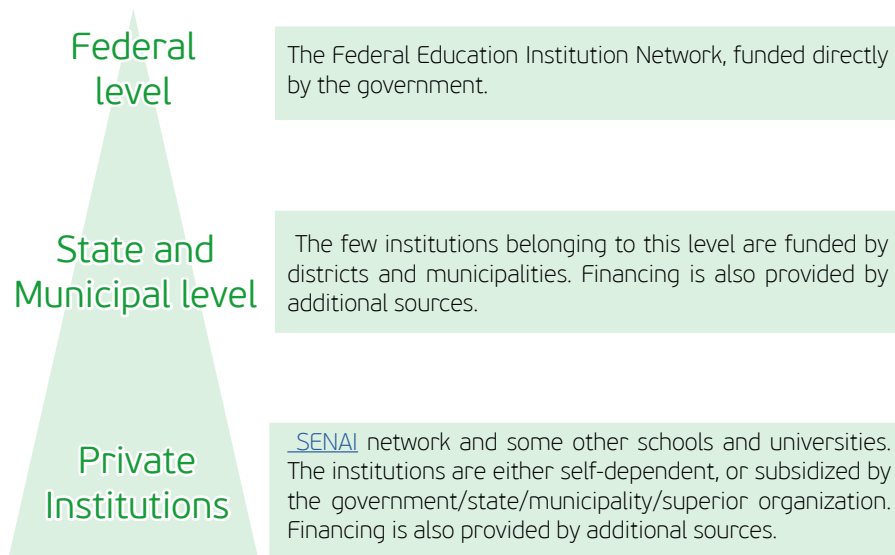
Work is understood as inherent to the human achievement and as an economic practice. It is a principle, overcoming the dichotomy between manual and intellectual labor, aimed at training workers to act democratically as citizens, subordinates and leaders.

Science and technology are understood as the knowledge produced by mankind and that enables the advancement of productive forces.

Culture is a principle which corresponds to the ethical, aesthetic and political values that are the guiding norms of society.

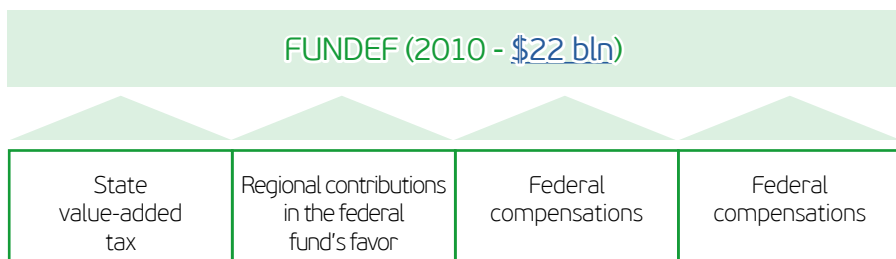
1. Skills development system funding

Skills development system funding is performed **on three levels**: federal level, state and municipal level, private institutions level.



Additional funding sources include:

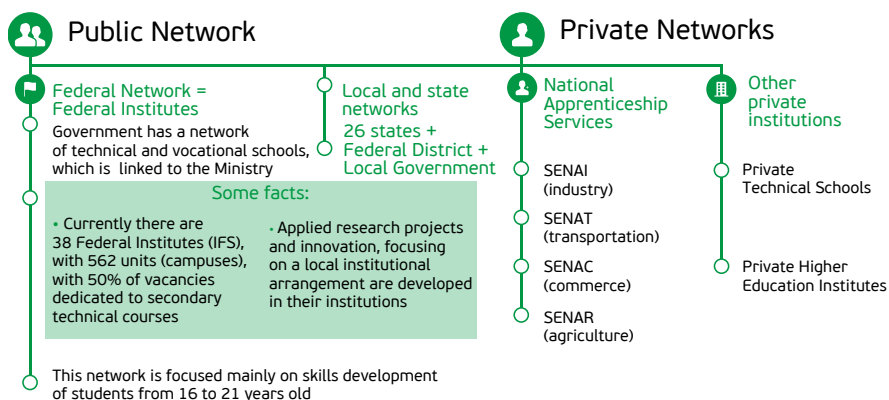
- **FUNDEF** (Fund for Maintenance and Development of the Fundamental Education and Valorisation of Teaching) is involved in the support and development of fundamental education and teaching assessments. It directs funds to the primary schooling sector. Under current legislation, at least 60% of assignment must be directed to teachers. FUNDEF is funded with earmarked revenue.



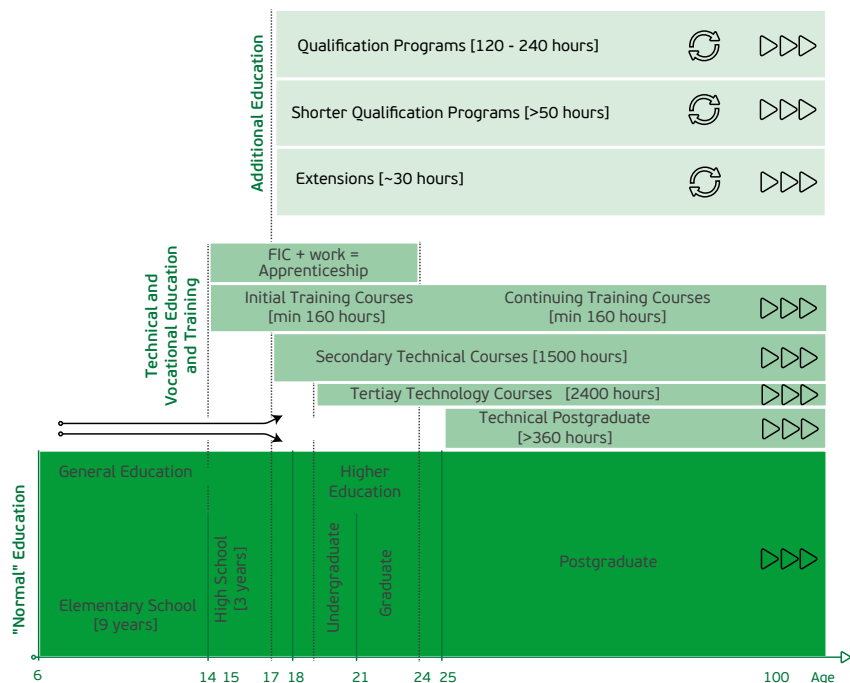
- **PRONATEC** government programme. Its main objective is to make TVET accessible to the widest possible public. Within PRONATEC, funding (in various forms) was suggested for educational institutions.

2. Structure of skills development system

TVET IS PROVIDED BY THE FOLLOWING NETWORKS



Initial and Continuing Training courses can be taken simultaneously with schooling. Secondary Technical Courses are also available from the 2nd year of high school. In addition, there is an extensive set of professional development methods: (shorter) qualification programmes and extensions. Training is the responsibility of such structures as the Ministry of Education and indirectly [CNI](#) (National Confederation of Industry), via SENAI, [SESI](#) (Industry Social Service) and [IEL](#) (Instituto Euvaldo Lodi).



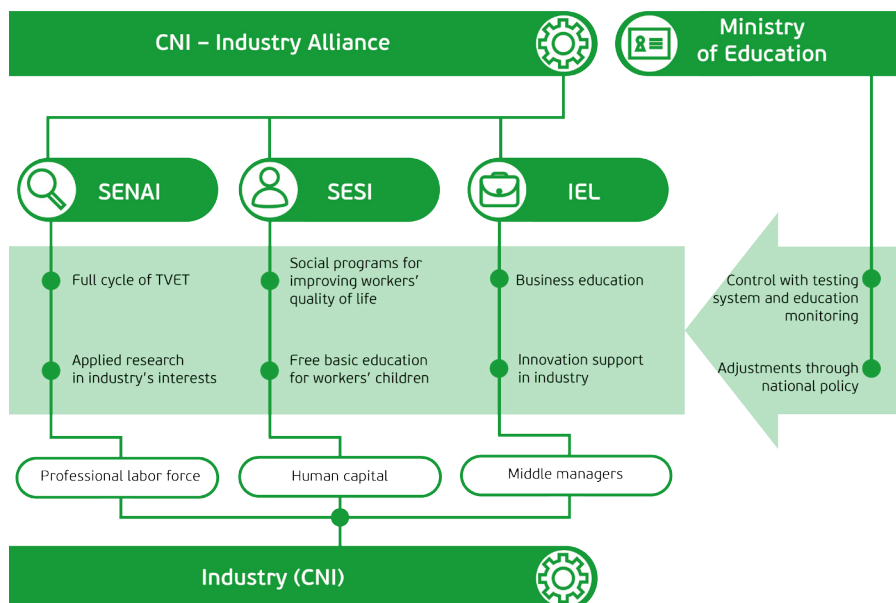
Repeatable format (different courses under one format)



Ability to take part in various programs concurrently



The age of admission is not limited



3. Successful cases of skills development at the national level

The following cases of skills development at the national level can be classified as the most successful:

- The National Programme for Access to Technical Education and Employment ([PRONATEC](#));
- Combining high schooling and technical education;
- Vocational Apprenticeship Programmes;
- combined types of education (lifelong learning, special education, youth and adult education, distant education);
- SENAI;
- forecasting in the area of education and skills development.

3.1. National Programme for Access to Technical Education and Employment (PRONATEC)

Main problem of reorganization of skills development system lies in a significant disparity within population (geographical, economic, cultural and social). The National Programme for Access to Technical Education and Employment, or PRONATEC, was launched to overcome current difficulties. The programme provides funding to educational institutions involved in technical training and aims to provide technical and vocational education programmes to the widest possible public. \$3,8 billion has been allocated for these purposes. Within PRONATEC, a few subprogrammes providing access to education from different perspectives were launched.

Rede e-Tec Brazil	This programme is aimed at launching distant learning courses which will allow one to get the primary training remotely. Within the programme, 958 poles of remote training were set up. The goal of 220,000 students by 2010 was achieved successfully.
Profuncionario	This teacher training programme allows the combination of training with work at school. Through this programme, teachers can undergo basic training remotely.
Brazil Professionalized	A programme of updating, developing, and setting up local technical schools. Within this programme, 300,000 teachers completed retraining. 78 new schools were set up, 232 projects of school enhancement accomplished.
Training programmes funding	8.1 billion of state-funded places in technical and vocational education was offered the period of 2011 to 2014.

As a result of this policy, during the WorldSkills International Competition 2015 in Sao Paulo, Brazil took the first place In comparison by Total Medal points. [Brazil got](#) 32 medals total, including 25 received by PRONATEC programme members.

3.2. Combining high schooling with technical vocational training

Initial and continuing training courses are aimed at increasing the number of professionals and improving their skills at any level of education. Minimal academic workload is 160 hours.

A major plus of these courses is the ability to combine them with high schooling. They accept students aged 14 and older. There are several possible options of combination:

- integrated into the secondary education for those students who completed primary school, the last stage of basic education;
- concomitant to secondary education, offered to those who join or are completing secondary education, with separate enrollments for each course and can be performed in the same or different educational institutions;
- subsequent, offered to those who have completed secondary education.

Advantages of this approach:

- people with a lower income have the opportunity to get an education and a paid job at short notice;
- short cycles of education make the system flexible. It can react immediately to labor market trends, preventing both lack and excess of specialists.

The next stage of education is Secondary Technical Courses and Tertiary Technology Courses. They can be combined with schooling from the 2nd grade of high school.

3.3. Vocational Apprenticeship Programmes ([Apprenticeship](#))

Apprenticeship is a special contract which can be concluded by people aged 14 to 24. According to current regulations, middle-size and major companies have to provide from 5% to 15% of regular places to this programme.

The worker (apprentice) combines his job with training courses. Thus, on the one hand, good positions are offered to young people, on the other hand, it is a way to combine the development of theoretical skills with practical training. Besides that, a contract can be concluded while schooling.

According to [statistics](#), 70% of apprenticeships conclude in full-time contracts with the organization after programme completion. This is because the apprentice acquires the particular skills and competences needed for this company.

Pros of Vocational Apprenticeship Programmes:

- engaging young people in the legal labour market;
- possibility to combine paid job with education;
- development of apprentice's particularly demanded skills;
- lowering educational institutions' compulsory charge level;
- reduction in organizations' salary costs.

3.4. Combining education conceptions

Brazil successfully uses and combines various conceptions of education.

Continuous education

The Brazilian training system is divided into many short blocks up to 3 years. As a result, people can start working as soon as possible. Only people who really need knowledge and skills, acquire it: the next stage of education starts when the employee feels he or she needs it. Specialized programmes allow one to obtain only the necessary skills and competencies, and the short cycles make the system flexible. The problem of anticipatory technological obsolescence does not occur.

Distant learning

The above mentioned programmes Rede e-Tec Brazil and Profuncionario fully correspond to the conception of distant learning.

Training programmes for young people and adults

Covering the broadest spectrum of public, basic and further education allows people to go back to school (to get Initial Professional Qualification, to continue education with a view to promotion) and, in the long term, it allows people who didn't get educated at an appropriate age to do it. Thus, human resource base of the country is used to the full.

3.5. SENAI

SENAI is a national service for on-site training. This network is the largest in Latin America and one of the largest in the whole world. It's goal is to make TVET most accessible to all segments of the population across Brazil.

Key info:

- more than 1800 courses in more than 25 areas related to the industry;
- 3.5 bln students have enrolled during the last year;
- more than 40.000 teachers;
- more than 700 schools.

SENAI is characterized by the following traits:

Distancing from the standard 'school' model

- SENAI has 272 mobile classrooms equipped with teaching materials, laboratories, and workplaces for practical training, to cover the outlying districts;
- 3 ships provide education down by Amazon.

Funding model:

- companies pay a [tax](#): 1 percent of the payroll from the entire industrial sector;
- if a company needs a customized programme, it pays extra money;
- 66% of the budget must be [reserved](#) for free educational programmes for low-income students or workers — both employed or unemployed.

Close cooperation with companies.

- the SENAI schools are completely linked to the companies (ex,for schools inside Mercedes, the company helps define the structure of courses);
- if a company needs a specific technology in a specific area, it brings the equipment and trains the teachers.

The SENAI schools are fully engaged in modern innovative training methods. For example, SENAI acted as WorldSkills Competition 2015 [organizer](#).

3.6. Forecasting in the area of education and training

The following methods are used to analyse current situations and to forecast future situations on the labor market and in the training system:

Vocational Education Map (MTVET)

The Brazilian Ministry of Education uses this tool as a method of balancing supply and demand. The Map is a method to analyze current and future demand on the labor market and compare it to the number of professionals. Moreover, it inspires communication between training systems and organizations.

Vacancies Provision Process

To ensure compliance of education with the requirements of the labour market, PRONATEC plans and organizes activities of the companies, implementing the programme. 15 ministries and various TVET system organizations take part in the process. Ministries provide detailed forecast of technical specialists in their field of work. Then so called Map of Identified Demands is set up. Many organizations use it during enrollment campaign planning.

4. Conclusion

Brazil has an active educational policy in the field of technical vocational training. It is aimed, first of all, at increasing the number of professionals.

Main features of the policy:

- as wide of a target audience as possible. Brazil addresses its vocational training programmes to representatives of all social groups;
- active involvement of the state, supporting organizations of all levels (for example, PRONATEC programme);
- complex approach to problem solving;
- combining education modalities is an example of such an approach;
- Involvement of private educational network potential. SENAI, which undertakes most of financing in technical education sector, is a private network;
- close cooperation between educational institutions and industry representatives.

Russia

1. Skills development problems and challenges in Russia

Today Russia has initiated the transformation of obsolete systems not only in the sphere of skills development, but in the entire production sphere. The core work in this sphere is determined by a number of issues which are urgent for the country.

At both federal and regional levels there is **a lack of communication between the vocational education system and industrial goals**, both current and future. At this moment there is no tested mechanism to monitor and predict the realistic needs of the economy and to give educational organizations a chance to train staff according to these requirements. Included in the educational process, industrial placement for students is a formal procedure and students do not learn essential skills properly.

Taking into account the infrastructure and economic growth rates, educational programmes for skills development should be efficiently updated in compliance with the market demand every year. In reality, however, this is not happening. Cooperative connections are not being funded; cooperation between factories and educational organizations, including mutually backing of training, is carried out locally without any system and without a normative and united methodological framework. Factories themselves educate and train their employees for current tasks and, at the same time, there is a question of whether or not they will still be in demand in the next 10-15 years.

There **is a gap between the Russian quality parameters and the top international standards**, both in production and in skills development. If a company in which students carry out their industrial practice does not measure up to current standards, it cannot ensure modern requirements to skills development level. The majority of colleges are not equipped with cutting-edge technology and there is zero chance of a prompt renovation of material and technical resources.

The period of professional standards implementation is very time-consuming and complicated. It takes up to five years from the beginning of formulation to the adoption and implementation. That is why the methods of prompt standards renovation and the regulation of the efficient distribution of volumes between theory and practice in educational programmes are highly relevant.

2. The activities of key players in the skills development field

The particular feature of the Russian skills development system is that the actions of Federal Agencies of executive authorities and the institutions of development are well coordinated and that the best national and corporate practices are being identified and scaled.

The Ministry of Education and Science is responsible for developing state policy and normative and legal regulation in the sphere of education, scientific,

technical and innovative activity, nanotechnologies, intellectual property, and also in the sphere of upbringing, social support and social protection of students and pupils in educational institutions.

Today the Ministry of Education and Science, in cooperation with national educational institutions, carries out a series of measures regarding the transformation and development of a secondary vocational education system on the basis instructions from the Russian President. In 2013, the [Strategy](#) of development for skills development system and formation of applied qualifications in the Russian Federation for 2013-2020 was developed and adopted. According to the Strategy it is planned to improve communication and strengthen the resources of business, government and educational institutions to ensure compliance with the personnel requirements of the economy.

[The Ministry of Labour and social protection of the Russian Federation](#) (Ministry of Labour) is responsible for developing state policy and legal regulation concerning demography, labour, living standards and incomes, wages, pensions (including private pensions), social insurance, conditions and labour protection, etc. In the sphere of skills development, the Ministry of Labour coordinates and funds the actions to develop 800 [professional standards](#) and supports the development of the [National System of Qualifications and Competences](#). In 2015, it passed the [order](#) 'Concerning the approval of the 50 most demanded new and prospective occupations in the labour market that require secondary vocational education'. Subject to the list, the Ministry of Education and Science coordinates the development of exemplary educational programmes for secondary vocational education on the basis of practice-directed training models.

[The Ministry of Industry and Trade of the Russian Federation](#) is responsible for developing state policy and legal regulation regarding the industrial and defense-industrial sector; in the sphere of development industries (aircraft engineering, shipbuilding, electronics, etc.), technical regulation and ensuring the uniformity of measurements. It is also authorized to carry out special state regulation functions concerning foreign trade activity.

Among the issues on which the Ministry of Industry and Trade focuses its attention are the issues regarding professional standards for industry. In 2014, the Ministry launched the [internship](#) programme for the Regional Ministers of Industry, where the issues of human resourcing in the field of industrial development were discusses, among other topics.

[The Agency for Strategic Initiatives to Promote New Projects](#) (ASI) is an autonomous non-profit organization which was established by the Government of the Russian Federation to implement complex measures in economic and social spheres, and particularly to advance priority projects for the implementation of measures to improve the business environment in Russia and the development of professional personnel. It has been operating since 11 August 2011.

In addition skills development field, ASI carries out following:

- supports system projects in the area of human resourcing and interactions between employers and educational organizations;
- launches and carries out foresight-research in the field of training qualified personnel for the Russian economy in the next 20 years.

Since 2014 ASI has been implementing the special 'Human resources provision of industrial growth' programme. It is a complex of measures designed to provide the Russian industry with the workers and engineers of the next generation by 2020. It includes both the international level ([integration](#) of the Russian Federation into the WorldSkills movement, the movement '[Global Education Futures](#)', dialogue and exchange of experiences at international platforms like [Skills Development Working Group](#) in BRICS Business Council) and the implementation at the federal and the regional levels (the [WorldSkills Russia](#) movement, [dual education](#) and leadership projects).

There are several competitions related to the development of the skills development system. The Ministry of Education and Science is responsible for conducting the all-Russian competition of professional skills of students according to their professions and specialties of secondary vocational education. The Ministry of Labour is responsible for organizing the all-Russian '[Best in profession](#)' competition of professional skill. The Ministry of Industry and Trade, in collaboration with the Agency of Strategic Initiatives, coordinates the branch-wise development of the WorldSkills movement. It holds corporate competitions for the standards of WorldSkills, National Competition National Competition of cross-industry skilled professions in high-tech industries by WorldSkills method [WorldSkills Hi-tech](#), [JuniorSkills](#) Competitions and [Future Skills](#) Competitions.

Certain state and private corporations and enterprises, development institutions and educational institutions throughout the country are also engaged in this process of optimization and enhancement of skills development system.

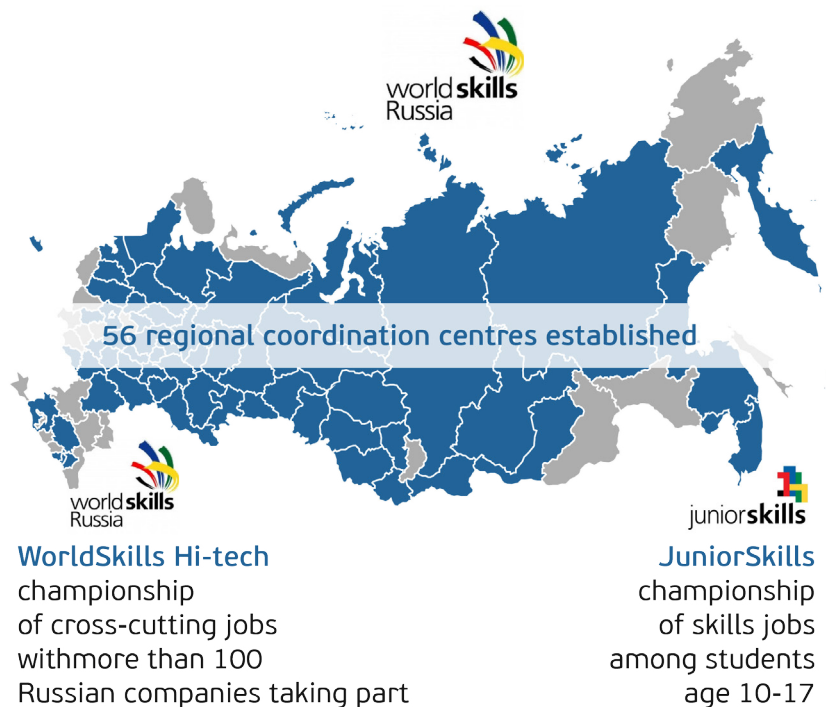
3. Examples of best practices implementation at federal and regional levels

3.1. The development of 'Young Professionals' movement (WorldSkills Russia)

WorldSkills is an international movement which aims to increase the prestige of skilled jobs and the development of vocational education through the harmonization of top practices and global professional standards and by conducting professional skills contests at national and global levels. The WorldSkills International competitions are held every 2 years. During the competition, representatives of various skilled and engineering jobs carry out practical competition tasks related to their specialties. These tasks are based on the most advanced international standards and evaluated by top experts.

For the first time Russia expressed its intention to join the international WorldSkills movement in 2011, upon the initiative of the Agency for Strategic Initiatives. Russia counts on WorldSkills as a well-established system, to ensure production and skills development standards compliance with international standards and to carry out regular development during the process of best experience sharing.

The 45th international WorldSkills Competition will be held in 2019 in Kazan.



More than 500 thousand people participate in WSR

Since 2014, the 'Agency of Professional Communities and Worker Development 'WorldSkills Russia' union, established by the Government of the Russian Federation in cooperation with ASI, the Ministry of Education and Science and the Ministry of Labour, has been the official representative of the Russian Federation in WorldSkills International and the supervisor of professional skills competitions according to the World Skills standards in Russian territory. According to the President's 2015 [Address](#) to the Federal Assembly of the Russian Federation the name of the 'WorldSkills Russia Union' is changed to 'Young Professionals'.

The union was established as the main center for training, professional development and professional retraining of personnel engaged in the preparation of the members of the national team and in the development of vocational education in Russia, in the development of professional standards, training of experts, etc. The immediate tasks are the establishment of 6 inter-regional centers of excellence, accredited according to the WorldSkills standards, training, professional development and professional retraining of 700 teachers, the development of educational and methodical materials, generations of proposals to update educational standards and qualification requirements for workers in the 50 most demanded and prospective occupations. 56 regional coordinating centers have already been created, and the opening of coordinating centers in each region of the Russian Federation is expected.

In addition to the basic national competitions in Russia, there are several WorldSkills Hi-tech competitions of cross-industry skilled and engineering professions

among more than 100 companies of the Russian Federation and the competition of skilled professions among schoolchildren aged 10 to 17 years 'Junior Skills' as well as prospective 'Future Skills' competitions.

3.2. The 'Dual Education' project

Dual education is a type of vocational education in which the practical aspect of training takes place in the workplace, and the theory depends on the basis of the educational institution. A student can be hired into the organization, in which he or she has his industrial placement. Subsequent employment at the same company reduces time costs on the process of adaptation for the young specialist, as he or she is already familiar with the specific equipment of this company and its staff and knows his or her job description. At the same time, the role of the employer is enhanced and moves to the forefront: companies make the order to educational organizations for the specific number of specialists, create job vacancies for students on their territory, provide mentors from current employees and participate in programme preparation.

The dual education project can be considered one of the most effective means of interaction between professional education institutions and companies. On a national scale, this format can become an infrastructure model that provides the ability to predict the needs of production in human resourcing, allowing evaluations of vocational qualifications systems involving education and production, and ultimately leading to effective changes in the national vocational education system.

Since September 2014 ASI has been implementing the 'Dual Education' project that was conducted in 13 pilot regions and students training according to the dual system has begun. This training is carried out under educational programmes which have been developed following the significant requirements of employers.

105
educational institutions —
participants
of the project



1005
companies —
participants
of the project



20899
students
engaged
in the project



5602
mentors
engaged
in the project



3.3. Examples of enterprises using modern methods of skills development

There are several examples of active and effective work in the field of vocational training which are essential for companies:

- OJSC '[United Aircraft Corporation](#)' regulates the development and the approval of the system of graduates' certification and professional accreditation of the educational programmes in the aircraft area, in the framework of the joint project with the Ministry of Industry and Trade of Russia and RUSNANO;
- JSC '[United Engine Construction Corporation](#)'. It duplicates the practices of dual education at corporations' enterprises;
- JSC '[Russian Railways](#)' carries out independent training of the majority of necessary staff in the training centers of JSC 'Russian Railways'. In 2013-2014, 34 special standards were developed for the professions which are specific to the railway transport;

- JSC '[Ruselectronics](#)' makes prediction for needs and vocational training in the framework of modernization of existing industry;
- OJSC '[RusHydro](#)' implements the rapid personnel potential development programme and develops professional standards for the hydropower industry;
- OJSC '[Chelyabinsk Pipe-Rolling Plant](#)'. It conducts educational activity by 11 technical educational at the platforms of the employer within the frame of dual education practice replication.

4. Activity at the international level

In addition to integrating into the international community and gaining the access to top global practices through the WorldSkills movement, Russia strives to participate in global processes and tries to establish a dialogue about the challenges of the future and proper vocational training to deal with them.

Global Education Futures Forum (GEFF)

GEFF is a unique international project, initiated by a group of Russian experts in 2012. Its main goal is to realize the direction of development of the world advanced educational systems and to specify the vector that determines the emergence of the global educational ecosystem. The expert Council of the GEFF consists of 26 leading experts from the USA, Russia, China, Korea, Japan and other countries.

One of the meetings of the GEFF, held in Kazan during the 2015 WorldSkills competitions, was devoted to regular labour force.

Skills Development Working Group under the Business Council of BRICS

The Skills Development Working Group of cooperation in skills development is one of seven working groups of the Business Council of BRICS countries. It is responsible for the exchange of the best practices in the field of skills development. The purpose of the exchange is to overcome the gap between the needs of the growing economies of the BRICS countries and the quality of education in these countries. The main challenges of the working group are to establish a common vision of future competency and to develop joint projects in order to the further implementation.

In the next three years, the group's agenda will include the establishment of the Skills Development Fund to support projects in the field of skills development in the BRICS countries; the organization of a conference with the participation of BRICS countries related to the Dual Education project; the definition of demanded and perspective professions in BRICS countries.

5. Conclusion

Every year, we notice more and more enhancement of large-scale activity related to the development of the vocational education system and cross-cutting skills development in the country. Solutions for a series of accumulated problems were achieved thanks to the organization of close interaction between employers, education system and regulators. Russia aims to integrate into the global community and develop its own capacities on the basis of the best international practices. Furthermore, the future concerns that should define the necessary future skills and tasks of both production and skills development for a new type of economy in next 10-20 years are open for discussion.

India

1. National policy on skills development in India

National Policy on Skills Development in India should be considered in conjunction with the development of the education system and with thought to long-term social and economic effects.

The Indian education system **was developing rapidly** between 1950 and 2015. The number of universities increased from 25 to 700, and the number of students from 200 thousand to 20 mln people, yet the quality of education remains not quite high.

The main challenges of National Policy on Skills Development in India today are related to:

- **the low level of education** (illiteracy rate is still 25%);
- **the high young population rate**: two-thirds of population are ages 15-65 years, by 2022, the average age will be 29 (compared to 40 in the USA and 46 in Europe);
- by 2035, the workforce is expected to decrease by 4% in developed countries, while it is expected to **grow by 32%** in India.

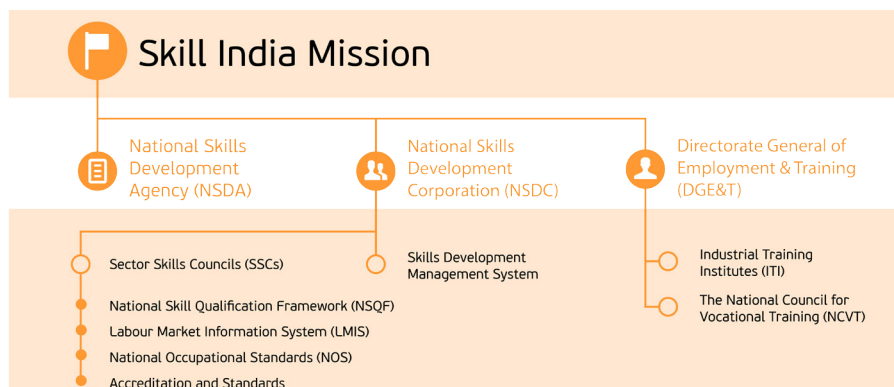
The examined strategic level documents demonstrate that the Government of India isn't setting itself the task of preparing future professions for new technological markets. Prior scope of skills development covers a **wide range of foundation industries**, such as building, retail, tourism, textile fabrication, etc.

Upon an initiative of the Ministry of Skills Development And Entrepreneurship, the Ministry of Labour and Employment, and the Prime Minister's National Council on Skills Development (PMNCSD), the **Skill India** national mission was launched in July 2015. This mission is one of the most promising skills development programmes ever launched in the world. It aims to train **400 mln workforce by 2022**.

2. Skills development system structure

The structure of the skills development system involves three main organizations:

- [The National Skills Development Corporation](#);
- [The National Skills Development Agency](#);
- [The Directorate General of Employment](#).



The National Skills Development Corporation is a **key organization** aimed at supporting a healthy skills development ecosystem for the private sector. The corporation is organized as public-private partnership (PPP).

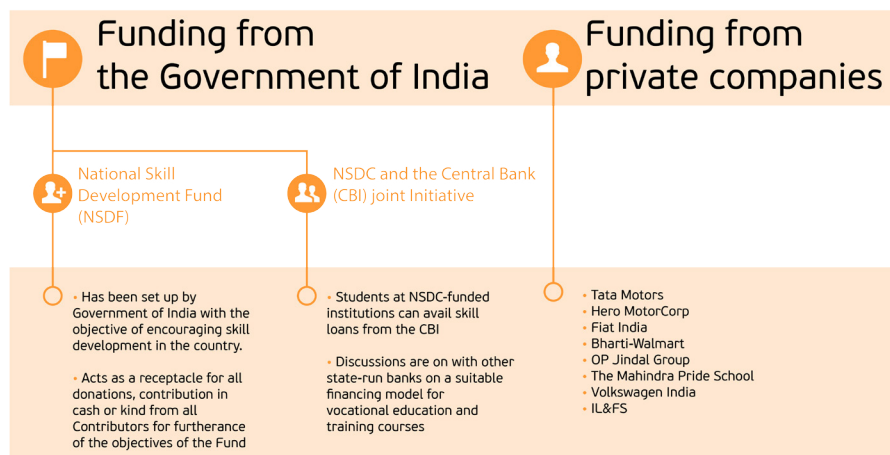
The main functions of the Corporation are:

- involving representatives of the key industries in the education process; to that end, 38 Sector Skills Councils were set up;
- Administration of the Skills Development Management System, which centralizes control and monitors skills development programmes realization among various institutions;
- grant and public loan approval for private educational institutions.

The creation of the corporation under the direct control of Prime Minister made it possible to demonstrate to business representatives, educational institutions and the general public the seriousness with which the Indian Government approaches the skills development system growth at the domestic level. It also simplified the process of coordination among a number of ministries and governmental organisations involved in skills development.

3. Skills development funding

Skills development funding is realized both within government programmes and with **cooperation with businesses**.



4. Successful cases of the skills development system establishment

The following cases in skills development in India may be considered the most interesting:

- involving private companies in the education process;
- the success of niche players in the skills development system;
- the experience of creating and reforming the Vocational Education System;
- the establishment of the National Skills Qualifications Framework;
- international collaboration;
- practice of cross-cutting skills development.

4.1. Involving private companies in the education process

Hero MotoCorp, Tata Motors and Bharti-Walmart may be considered the most successful cases of creating custom skills development programmes.

Hero MotoCorp established its own university to train '**balanced leaders**'. It is focused on offering a practical-oriented education and fostering employability. According to expert Deepak Bur, 'It is a great example of education process organization in collaboration with major business'.

Tata Motors contributes to skills development through a **four-pronged approach**. The company upgrades existing technical training institutes and establishes new programmes through public-private partnership. They also provide special technical training to the economic and the socially disadvantaged through social partnerships and in-house training.

Bharti-Walmart has launched its own **skill** centre in Bangalore, which trains 100 candidates every month and offers them employment. Similar centres will be established in Delhi and Amritsar in partnership with local authorities.

4.2. Success of 'niche players' in the skills development system

Aside from some 'dominators', '**niche players**' also play an important role in the skills development system in India.

While 'dominators' are focused on training hundreds of thousands of professionals among all sectors of the population and throughout the country, niche players focus on the skills development of **particular disadvantaged groups** that require tailored interventions. These groups include women with small children, people with disabilities and traditional sector workers (artisans, farmers, etc).

Using their own unique approaches to interaction and training these segments of the population, niche players **managed to succeed** in involving the most problematic and distant society groups in the skills development process.

4.3. The experience of creating and reforming the Vocational Education System

To develop vocational education in India, several programmes were launched back in the 1950s. However, vocational education system proved **ineffective**. Instead of the planned 25% of 11th and 12th grade students, the plans it could only cover 3% of them in 2012.

The main reasons for low efficiency of the systems are:

- **low demand for vocational training**, caused by an established opinion concerning the low quality of vocational education in comparison to classical education;
- **inability to respond to an industry's changing skill needs**, caused by lack of mechanism for coordinating economic development policy and vocational training up to 2012;
- **top-down** system organization based on goals of the Government instead of organization from bottom to top focused on population needs.

To solve the listed problems, **Resource Integration for Sustainable Employment** (RISE) was created. The system is based on the idea that 'it should be clear that the student wants this particular job and wants to build long-term career in this particular industry'.

The key features of the system:

- **establishment of Sector Skills Councils** to involve businesses in the skills development process;
- **coverage of a broad spectrum of the public** by establishment of career counselling kind of advice system at the village level to explain to people the options that are good for them based on their education or skills;
- **establishment of a Labour Market Information System** which enables the user to categorize training providers based on the performance of their students.

The experience of creating a Vocational Education Network in India demonstrates that it is important to engage in national education projects not only from the top-down, but also from bottom to top. This allows a bridging of the gap between what (young) people themselves want to do and what result the Government wants to receive from a particular education program.

4.4. Establishment of National Skill Qualifications Framework

The National Skill Qualifications Framework was created in order to increase horizontal and vertical mobility between general and vocational education, as well as to popularize vocational education and to implement knowledge and skill certification regardless of the mode of study.

The Framework consists of **10 levels of qualification** based on knowledge and skills of students. The levels do not depend on the number of years of education and are related to skills and knowledge, required from student whether he or she received formal or informal education.

The **key elements** of the Framework are:

- national recognition of skills and competencies at different levels considering their value;
- close connection skill training and technical education;
- partnership with industry / employers;
- a transparent, accountable and credible mechanism for skills development across various sectors;
- increased potential for recognition of prior learning.

The Framework enables a person to acquire desired competency levels, transition to the job market and, at an opportune time, return to acquire additional skills to further upgrade their competencies.

The Framework is beneficial to schools, vocational education and training providers, higher education institutes, accrediting authorities as well as various industries and their representative bodies, unions, professional associations and licensing authorities. The biggest **beneficiaries** of such a framework **are the learner**, who is able to judge the relative value of a qualification at a particular level within the framework and make informed decisions about their career progression paths.

4.5. International collaboration

International collaboration allows India to move forward in the field of skills development of [missing competences](#).

The main partner countries of India in the field of skills development are the **UK, Germany and Australia**.

[The UK India Skills Forum](#) (UKISF), established in April 2002, provides organisations across the technical and vocational education in UK and India with the chance to tap into business opportunities in the sector by exchanging ideas for delivery of skills training through collaborations between the two countries.

Institutes like the [Foremen Training Institute](#) (FTI) in Bangalore, the [National Instructional Media Institute](#) in Chennai or the [Central Staff Training and Research Institute](#) (CSTARI) in Kolkata were all set up with assistance from Germany. Presently, the German side has suggested setting up '[Vocational and Educational Training](#)' in India based on the system of vocational education in Germany.

In 2010, India and Australia also established the [Bureau for Vocational Education and Training Collaboration](#) (BVETC) in order to facilitate connections in the skills area.

4.6. Practice of cross-cutting skills development

Although the cross-cutting skills development and learning system has existed in India for more than 50 years, it has not become the main plan for education and skills development. The system [lacked connection and clear mechanisms of cooperation](#), as well as understanding of the basic principles of the system among entrepreneurs in the field of skills development.

Therefore, in 2012 the Indian Government has emphasized the need for developing a comprehensive policy to guide the systematic promotion of adult learning, as well as the necessity of creating structures and mechanisms for recognition, validation, accreditation and certification of prior learning. The system of cross-cutting learning is expected to [become an educational standard](#) of the skills development system in India soon. An example is the master programme within the cross-cutting skilled professions personnel training system in the University of Delhi, launched in 2014, which will set a positive precedent for the future development of the system.

5. Conclusion

The Government of India initiated radical and ambitious reforms of the education system, concentrating all the efforts on **increasing the number of trained workforce**. Most of the reforms and on-going initiatives **have been initiated too recently** to analyse the efficiency fairly. However, the experience the Government of India has already accumulated and will accumulate in the next 10 years, **may be highly valuable** to all BRICS countries to develop their own skills development systems.

China

In less than forty years since economic reformation and integration into the global economy, China has moved up to the second largest economy in the world as for the GDP volume.

As a result of the expansion of educational programmes and skills development, China won their first gold medals at the WorldSkills Competition in Sao Paulo in 2015. This is the third time a team from China has taken part in the [WorldSkills Competition](#). On top of the 4 gold medals, the Chinese team also won six silver medals, three bronze medals and 12 other awards, which clearly illustrate the **progress in reforming the vocational training system** in the country.

1. National education and skills development policy

The 1996 [Vocational Education Law](#) set the national standard for vocational education reforms, which continue today.

On 29 July 2010, China's Ministry of Education released [guidelines](#) for education reform and development over the next 10 years. The guidelines cover almost every aspect of the education spectrum, from kindergartens to universities, from public to private institutions, and from academic to vocational education.

1.1. Strategic goals for education and skills development

The government of China sees education and skills development as a long-term strategic priority. It has continued to improve quality and expand its focus, emphasizing the need for scientific education and talent development.

According to [China's National Plan](#) for Medium and Long-term Education Reform and Development (2010-2020), several **strategic goals** to be attained by the year 2020 can be defined.

First of all, it is important to establish an education and skills development system that correlates with the socialist market economy and the objective of building a prosperous society.

Secondly, preschool education shall be more or less universalized by 2020, while popularization of a nine-year compulsory education programme shall be consolidated and enhanced. Meanwhile, senior middle school education shall become the norm, with a 90% gross enrolment rate, and higher education shall be further popularized, with a gross enrolment rate of 40%. Illiteracy shall be eliminated among the young and the middle-aged population.

1.2. Skills development plan in China

According to the [National Industrialisation Plan](#), more skilled human resources need to be trained. By the end of 2020, a new supply of 3.5 million technicians and 1 million senior technicians is needed. In order to establish a vocational training system to meet the needs of various types of employers, and to give priority to skills training for the youth and upskill training for employed workers, at least one skills training programme should be provided to every new entrant into the labour market with public financial support. More channels need to be explored to discover and select outstanding skilled workers, and representative skilled workers should be sent abroad to take part in international skills competitions.

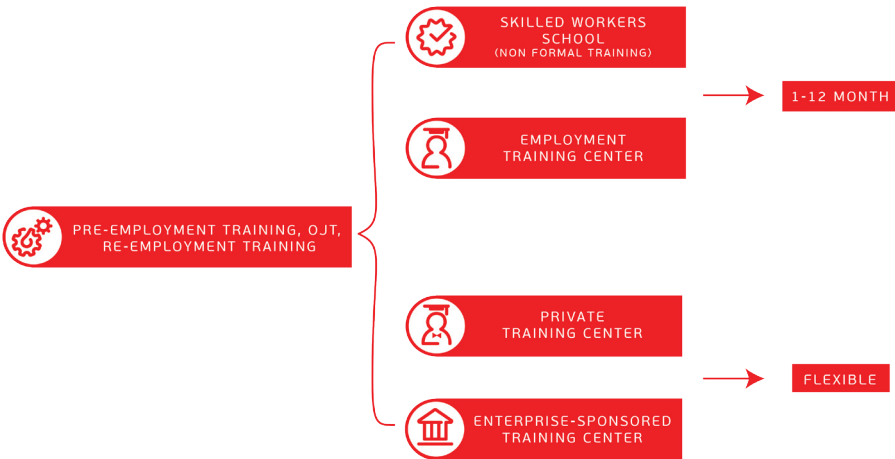
The government should construct skill-master studios and make the best possible use of such high-valued human resources, have highly efficient job agencies to promote the rational allocation of skilled workers, strengthen the technical support and the related legislation, and accelerate the modification of national occupational standards.

2. Educational and skills development system in China

In general, the [Chinese educational system](#) has the following structure:

Levels of education	General education	Vocational education and Training
Tertiary education	Universities Undergraduate studies Graduate studies Post-doctoral studies	Polytechnic colleges Specialized junior colleges Technician colleges
Higher Secondary Education	General senior high schools	Specialized high schools Vocational high schools Skilled worker schools Adult specialized high schools Short-term courses of various types
Lower Secondary Education	General junior high schools	Vocational junior high schools Short-term courses of various types
Primary Education	Primary Schools	
Pre-school Education	Pre-schools	

In China, [vocational education and training](#) refers to technical education and skills training provided by **various programmes**, including pre-employment programmes, job transfer programmes, apprenticeship programmes, on-the-job training programmes, and certificate programmes.

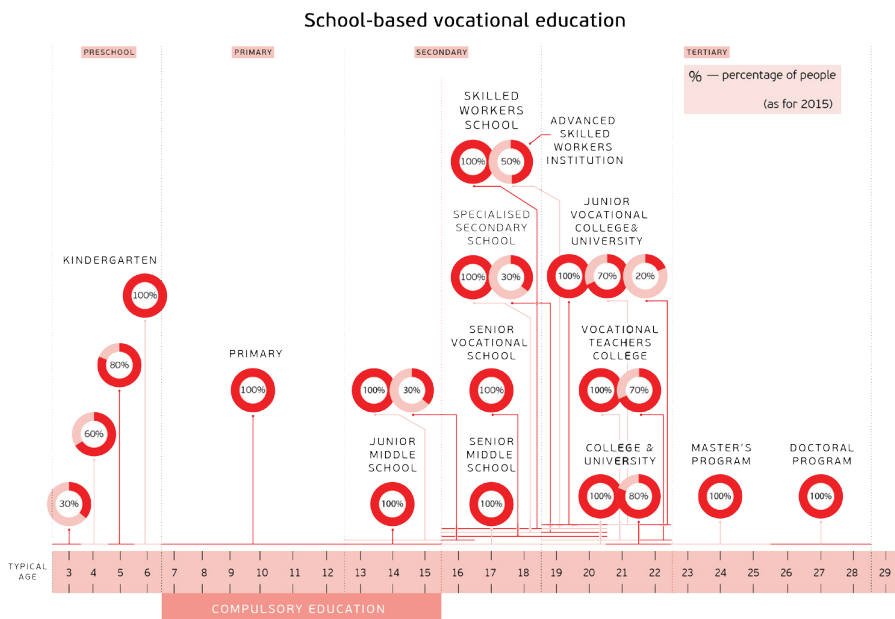


Vocational Education and Training is a **complex of administrative measures** divided primarily between the Ministry of Education, which focuses on occupational and technical education, and the Ministry of Human Resources and Social Security, which focuses on skills training. There are other government entities who are involved as well.

3. Vocational education system

The **strong and simple** model for upper secondary vocational education, involves a range of specializations, a good percentage of general academic skills underpinning all the programmes, and a commitment to workplace training and close relationships with employers.

In order to increase the **professional education availability**, professional schools were established on various levels, from lower secondary to tertiary education. At upper secondary level, about half of the students choose to enter upper secondary vocational schools – with more than 20 million students now in vocational schools.



Despite a great number of advantages, the Chinese VET* system faces a number of serious **challenges as compared to its international counterparts**:

- the curriculum design of VET programmes is limited;
- connections to industry are weak;
- VET has low status in the public mind;
- faculty have limited experience in industry;
- Financial reasons limit access to the education for some population groups.

To overcome these challenges, the Chinese government prepared a range of reforms. Together with the implemented actions in the VET sector, many of these reforms are regarded as some of China's practices.

* VET — Vocational Education and Training.

4. Best practices of the Chinese skills development

Among the [best practices](#) of the Chinese VET system are the following ones:

- financing educational programmes;
- international cooperation;
- establishing standards for vocational instructors;
- increasing the number of vocational coaches-instructors;
- rural vocational education development;
- the China retraining programme.

4.1. Financing educational programmes

A major goal is to narrow the disparities in living standards across rural and urban, ethnic, and geographic lines through equal opportunity vocational education. To that end, test areas have developed financial [aid programmes](#) to target their poorest and most disadvantaged residents.

[Upper secondary and further education](#) typically require fees. However, the Chinese government has introduced a number of measures to try to overcome financial barriers and ensure the availability of education. This includes a national plan to offset their fees CNY 1500 (230 US dollars) per year subsidy to students in VET schools to their fees. In 2009, an initiative was also launched to **make tuition free** for upper secondary vocational school students.

With China emerging as one of the fastest growing economies in the world, a number of privately funded vocational schools have experienced rapid growth on a greater scale.

4.2. International cooperation

Over the past decade, China has [made](#) efforts to **follow practical examples** from several countries including Australia, Germany, Canada, and the United States. To better meet the need for economic development, China has been actively engaged in global cooperation and exchanges in the field of vocational education.

The Chinese government has sent delegations to over 20 countries where vocational education is well developed to [learn from their successful experience of skills development](#).

At the same time, China has also invited foreign professionals to deliver lectures in China on advanced technology in various fields, and sent invitations to other countries' vocational education institutions to establish joint projects in order to promote vocational education systems in China.

4.3. Establishing standards for vocational instructors

China has strong arrangements to [ensure that teachers in vocational schools remain aware of international requirements](#). Teachers in vocational schools are required to spend one month actively practicing in their industry each year, or two months every two years. In addition, many schools employ a significant number of part-time teachers who also work in an industry.

4.4. Increasing the number of vocational coaches-instructors

Each of the [test areas](#) has taken action to remedy the fundamental problem of a shortage of qualified vocational instructors.

In 2008, Guangxi, Henan, and Chongqing all promulgated new measures and standards for the training of vocational instructors. Hubei established a position for technical professionals to teach part-time on two-year contracts for RMB 20 thousand per year (3090 US dollars). More than 50 such positions are opening every year. Since 2008, Guangxi has spent more than 30 million RMB (4,6 million US dollars) on teaching 15 thousand professional instructors and on abroad exchange programmes to further strengthen technical expertise.

4.5. Rural Vocational Education Development

[Rural vocational education reform](#) has been a high priority in each of the pilot areas. Henan increased rural vocational school enrolment by offering each of its counties RMB 1 million (154,5 thousand US dollars) for enrolling a specific number of new students each year. The province increased its enrolment by fifty-five thousand students per year from 2006 to 2009. Guangxi has constructed more county-level vocational schools in an effort to increase rural enrolment, and it has had these schools focus on skills related to its agricultural economy.

4.6. China retraining programme

According to the requirements of the labor employment market in China, the Chinese government has been implementing some massive [retraining programmes](#). There are: 'Three Year 10 Million Programme', 'Training Programme for Starting Your Business', 'High Skilled Workers Training Programme', and 'Occupational Certificates Training Programme for Higher Vocational Education Institutes' Graduates'.

5. Cultural context of the best practices implementation in China

China is a diverse country in terms of the ethnic, cultural, and regional identities. To ensure the success of national reforms, the state has to monitor and consider all the territorial characteristics, meaning that **localization is needed**.

The successes of localization are primarily due to the capacity of motivated local actors to push reforms in ways that are directly responsive to the demands of their economies. The **success of the test programmes implementation**, and the **difficulties of generalizing** them nationally, suggest that local governments themselves should take charge of planning and implementing reforms.

The decentralization of vocational education and skills development reform responsibilities in China has produced a number of important successes, but the country has also been plagued by an inability of local governments to allocate sufficient resources to the reforms to meet centrally promulgated goals and guidelines. Even if local governments spend considerable sums on test projects, their successful implementation can be ensured only with even bigger national investments.

South Africa

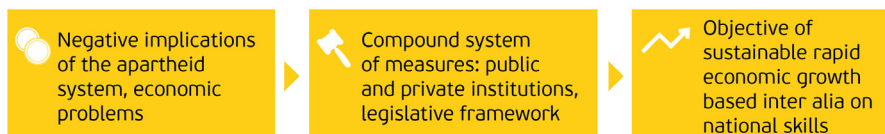
1. Basic principles of skills development system in South Africa

Development of **education** is now one of the [top five priorities of the South African government](#), set by [President Jacob Zuma](#), and one of the core objectives under the [National Development Plan for 2030](#). Numerous **institutions, programmes and policies** have been established to handle the existing challenges and to fulfill key objectives.

The legacy of apartheid still remains a major problem. Extensive efforts are needed to address the huge backlogs left by 40 years of the discriminatory system that separated education based on race, a system wherein white South African children received quality schooling virtually for free, while black children had only so-called '[Bantu education](#)*'. This educational discrepancy was a keystone of the overall apartheid system. Such mistakes of the past have resulted in numerous challenges which currently face the education and training system, including a high adult illiteracy rate, poorly trained teachers, a racial imbalance in education enrollment, etc.

The next problem is directly connected to one of the general challenges of the national economy, namely severe regional and rural-urban economic disparities. There is a considerable lack of basic amenities, infrastructure and learning resources in townships and rural educational facilities.

Another challenge is the so-called 'employment paradox' of the South African labour market. The country has a high unemployment rate and a severe manpower shortage at the same time. This is especially the case among engineers and artisans. The reason is simply that employers are unable to find candidates with the required skills.



Key objectives of the skills development system include:

- inclusivity as a basic principle (universal access to basic education and progressively extending access to further education);
- partnership between vocational education and the economy;
- training of more qualified educators;
- [access to good nutrition for students](#);
- skills development with particular focus on improving the teaching of Mathematics and Science, the role of higher education in addressing skills shortages and adult education and training.

* The Bantu Education Act, 1953 was a segregation law enforcing racially separated educational facilities.

2. Educational system structure

The system is divided into 3 parts:



General Education and Training includes primary school and runs from grade 0 (otherwise known as grade R – ‘reception year’) to grade 9. School education is compulsory for all South Africans from the age of seven (grade 1) to the age of fifteen, or the completion of grade 9. There are both public (94%) and independent (6%) schools. General Education and Training also includes [Adult Basic Education and Training](#) (ABET), which is available to adults who want to finish their basic education.

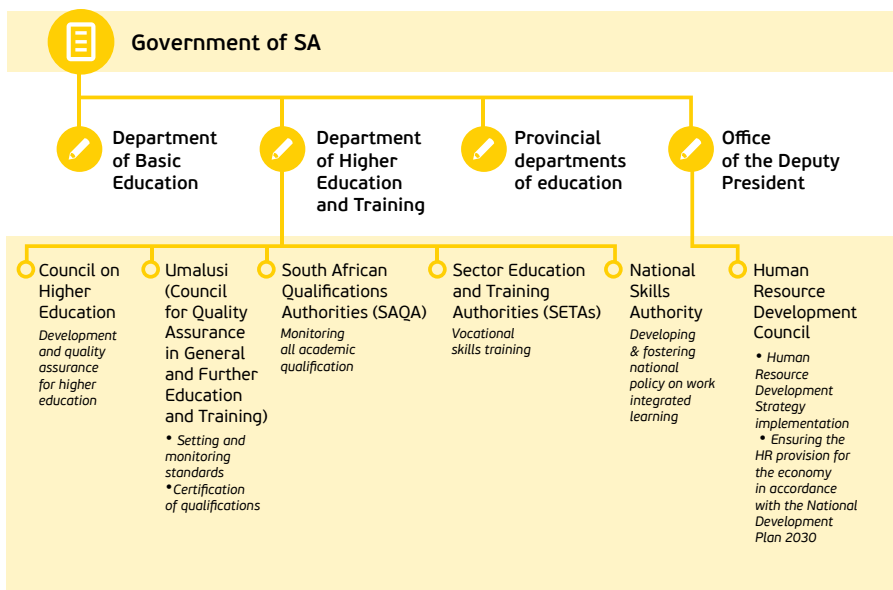
Further Education and Training includes secondary school (grades 10 to 12) as well as career-oriented non-higher education training facilities (Technical and Vocational Education and Training colleges and [community colleges](#)). TVET* colleges provide education at the **post-compulsory but pre-higher education** level to youth and adults who have completed Grade 9 or higher. The main purpose is to train school graduates, providing them with the **skills, knowledge and attitudes necessary for employment** in the labour market. Their emphasis on **vocational and artisan training** is aligned with the key mid-level skills required to develop the South African economy, and tends to concentrate on occupations in the fields of **engineering and construction, tourism and hospitality, and general business and management**. Community colleges are a **new category among educational institutions**. According to the [White Paper](#) for Post-school Education and Training (2013), community colleges are to be established by **grouping together clusters of adult learning centers** in order to cater to unskilled people, those who did not finish their schooling, those who lost their jobs or were made redundant by new technologies, and those who simply seek new or better skills.

Higher Education and Training includes undergraduate and postgraduate education up to the level of the doctoral degree.

3. Education and Training in South Africa: Governance Structure

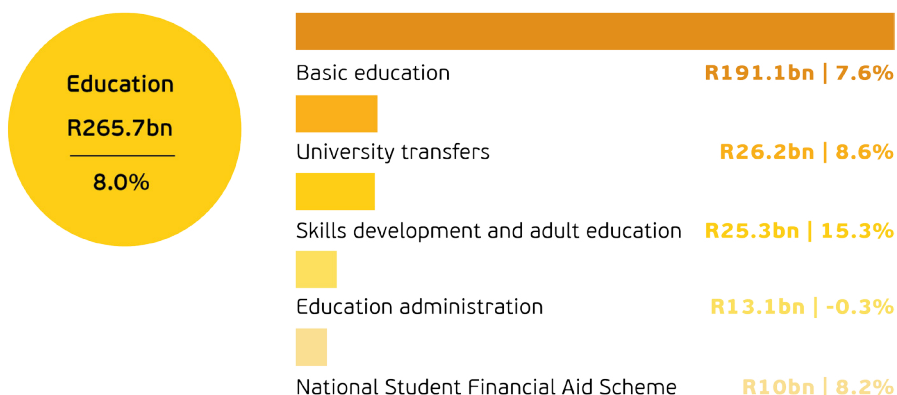
In 2009 two new institutions were established in place of the Ministry of Education of South Africa: [the Department of Basic Education](#) and [the Department of Higher Education and Training](#). In addition, each of the nine provinces has its own Provincial Department of Education.

* TVET — Technical and Vocational Education and Training.



4. Education and Training in South Africa: Funding

South Africa has one of **the highest rates of public investment in education** in the world. At about 7% of gross domestic product (GDP) and 20% of total state expenditure, the government spends **more on education than on any other sector**. In 2015 **the education budget accounts** for R265.7 billion (\$16,8 billion). In comparison to the 2014/15 estimated outcome, it grew by 8%. See the diagram below for the distribution scheme.



5. Best practices of skills development in South Africa























The best practices of skills development in South Africa are:

- SETAs – Sector Education and Training Authority;
- Skills Development Levy;
- Decade of the Artisan, 2014 – 2024;
- Engagement of the Private Sector in Education System and Training;
- Human Resource Development Strategy for South Africa 2010-2030.

5.1. SETAs

'SETA' is an acronym for **Sector Education and Training Authority**. It is a vocational education organization, the key institution bridging education and work. As of December 2015, there are [22 SETAs](#). Every industry and occupation is covered by one of the SETAs. Each SETA is responsible for managing and creating **learnerships, internships, unit-based skills programmes**, and **apprenticeships** within its industry.

Industries and occupations covered by particular SETAs

 agriculture	 banking	 chemical industries	 construction	 culture, arts, tourism, hospitality and sports
 education training and development practices	 energy and water	 fibre processing & manufacturing	 finance and accounting services	 food and beverage manufacturing industry
 forest industries	 health and welfare	 insurance	 local government	 manufacturing, engineering and related services
 media, information and communication technologies	 mining	 public service	 safety and security	 services
 transport		 wholesale and retail		

The members of each **SETA** include employers, trade unions, government departments and bargaining councils (where relevant) from each industrial sector. In 2009 the Department of Higher Education and Training assumed the responsibility for SETAs, which were earlier controlled by the Department of Labour.

5.2. Skills Development Levy. SETAs and the National Skills Fund.

The skills development levy is a form of tax collected from employers on an annual basis. It constitutes 1% of an employer's monthly payroll costs. The total amount is then distributed between SETAs (about 80%) and [the National Skills Fund](#) (about 20%).

* SETA — Sector Education and Training Authority.

Funds distributed to SETAs are then allocated between:

- Administration cost (not more than 10%);
- 'Mandatory grants' paid back to employers upon receipt of the employer's Workplace Skills Plan;
- 'Discretionary grant' paid back to employers in support of the SETA Sector Skills Plan.

The NSF may fund the following:

- skills development projects identified in the National Skills Development Strategy (NSDS) as national priorities;
- skills development projects related to the achievement of Skills Development Act goals;
- any activity undertaken by the Minister of Higher Education and Training to achieve a national standard of good practice in skills development.

Year	Total amount disbursed by the skills levy fund (R '000)	Distribution of levy funds				
		NSF (R'000)	SETAs			
			Administration Costs (R'000)	Mandatory Grant (R'000)	Discretionary Grant (R'000)	Amount disbursed to SETAs (R'000)
2010/11	8 542 521	1 681 140	945 799	3 198 483	2 717 099	6 861 381
2011/12	8 690 375	2 012 837	964 323	3 564 932	2 148 283	6 677 538
2012/13	10 240 111	2 270 798	1 181 809	4 460 329	2 327 175	7 969 313

5.3. Decade of the Artisan, 2014 – 2024

There is a continuous need for qualified artisans to sustain industries and support economic growth within South Africa. In a range of national strategies, the need for artisans has been elevated and identified as a priority area for skills development. According to the National Development Plan for 2030, the country should produce 30,000 artisans per year by 2030. In order to fulfill that goal the DHET has launched the '[Decade of the Artisan](#)' advocacy campaign on 8 August, 2014. The campaign is aimed at promoting artisanry as a career choice to South Africa's youth within the post-school education and training system as well as to highlight skills development opportunities that are available in artisanry.

The focus of the campaign is expected to be concentrated on:

- engaging employers to ensure more workplaces are opened up for artisan learners;
- training of job orientation, community development workers, ward councilors and college career guidance advisors on artisanal careers;
- exposing learners from academic schools to technical and vocational careers and learning from as early as Grade 6 through interactive 'sample a skill' exhibitions.

5.4. The Private Sector in the System of Education and Training

[Adcorp](#) is the largest diversified workforce management and business process outsourcing company in South Africa. The company focuses on three areas of operations: Permanent Recruiting, Flexible Staffing and Business Process Outsourcing.

Adcorp's activity in the sphere of human capital development comprises:

Vocational guidance (career days at TVET colleges, spreading information about the opportunities of participating in WorldSkills Competitions and other competitions and initiatives aimed at skills development).

Apprenticeship agreements between an employer, a student and an educational facility (all the contracting parties carry responsibilities).

Training programmes at educational facilities and workplace education programmes (combining theory and practice).

Professional examination (by an independent organization) and certification (independent competency assessment).

5.5 Human Resource Development Strategy for South Africa 2010-2030

[The Human Resource Development Strategy](#) (HRDS) is a policy-setting document for a two-decade period starting from 2010, designed by the South African Human Resource Development Council. It contains five major strategic objectives in the field of human capital development (and the corresponding indicators monitored), namely:

- improving the foundations for human development;
- improving the supply of high-quality skills (particularly scarce skills) which are more responsive to societal and economic needs;
- increasing employer participation in lifelong learning;
- supporting employment growth through industrial policies, innovation, research and development;
- ensuring that the four strategic objectives of the HRD system are linked.

6. Conclusion

In spite of the fact that more than 20 years have passed since the abolition of apartheid, a system that devastated political, economic and social spheres, the South African nation has made significant efforts to overcome negative consequences of the past in all areas, including human capital development. Notwithstanding the numerous existing problems, which are aggravated by the general economic severities, the Government of South Africa has managed to create a compound system of measures aimed at the development of national education and vocational training. The system represents a comprehensive cooperation between public and private institutions, based on an elaborate legislation framework.

BRICS

1. Skills development overview

Over the last few years, BRICS has extended their collaborations in the social sphere. The association emerged in 2010 after the incorporation of South Africa and has united countries of different regions with the same challenges, needs and ambitions. With BRICS countries intending to further cooperate their governments have started working together not only on trade relations but also regarding knowledge, education projects and practice mutual exchanges.

2. Key documents and agreements

The contractual basis of BRICS collaboration in TVET started to form recently. The main cooperation of BRICS countries is twofold: through National Ministries of Education and within the framework of [BRICS Business Council](#). The first meeting between the Ministers of Education happened in [2013](#) in the UNESCO headquarters and laid the groundwork for close cooperation in TVET. In collaboration with UNESCO, the Ministers of Education outlined a report on a joint vision at TVET as well as education development in the countries and recommendations to overcome obstacles and to support collaboration.

The official meeting of the Ministers took place during the Cape Town BRICS Summit in 2014. As a result of negotiations, the Ministers adopted the Cape Town Declaration, which entailed a signature of [Memorandum of Understanding on cooperation in Science, Technology and Innovation](#). The document gave the official start of BRICS collaboration in the sphere.

In 2015 the BRICS Minister of Education held two meetings – one in March [in Fortaleza, Brazil](#) and one [in November, in Moscow](#). In Declarations after the meetings, the Ministers outlined major working projects in TVET.

3. BRICS TVET projects

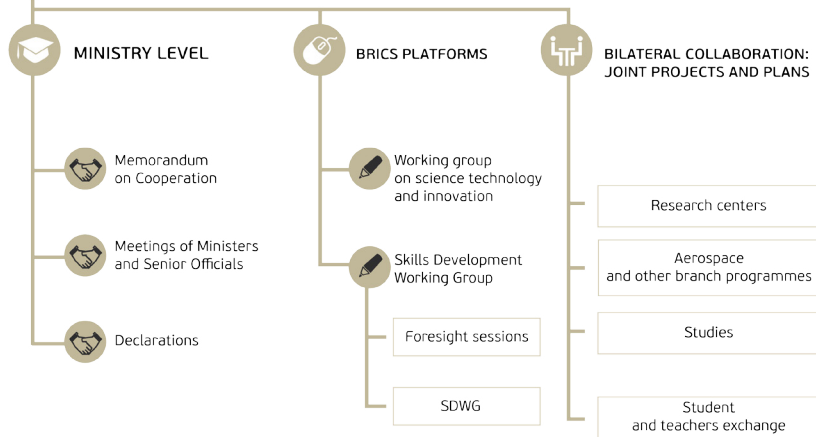
Among BRICS Education projects, we can highlight [BRICS Universities League](#), [BRICS Network Universities](#), mutual degree recognition and encouraging academic and student exchanges. Technical and vocational education and training is emphasized since the rashly developing economics of the countries are in need of qualified specialists. To promote working on this direction, BRICS Business Council established the [Skills Development Working Group](#), which has already held several meetings and foresight-sessions this year.

During the [foresight-session](#) in Moscow, July 2015, BRICS-countries' representatives* defined strengths and weaknesses of their economics, spheres of effective collaboration and weak directions that need more support. All attendees remarked on a need for practice and experience exchange, especially in TVET. The direction became a priority and the Working Group created the Skills Development Working Group Roadmap for 2015-2018. The Roadmap encompasses both TVET and Academic projects.

* Chinese representative was absent at the meeting.



BRICS Academic and TVET Collaboration



4. Cooperation with other organizations and associations

The TVET sphere is at the forefront not only for BRICS; therefore the countries actively collaborate with other organizations and associations and participate in joint projects. Examples of such cooperation are partnerships with UNESCO, ILO and G20. The partnership experience of [IBSA](#) association should be emphasized. IBSA – India, Brazil and South Africa have a long track of cooperation in African and South American development projects*, including educational projects.

5. WorldSkills

BRICS highly values the [WorldSkills](#) Competition and the opportunities it provides in the TVET sphere. This year, Brazil hosted the International Competition for the first time [São Paulo](#), and in [2019](#) Russian Kazan will be the host-city. National teams show steadily improving results in many cases due to intense interest of the governments in developing professional and vocational skills. Moreover, BRICS are planning to use WorldSkills Standards in TVET and according to the Skills Development Roadmap, are going to establish WorldSkills BRICS competitions around the year 2018.

6. Conclusion

Since the active cooperation between BRICS in TVET has begun only recently, the majority of projects are either still on paper or in the early stages of formation. Successful bilateral projects are rare. In addition, the full potential of all five countries is not always used during the realizations of collaborative projects.

At the moment, BRICS countries are occupied with their national TVET programmes and are gradually starting to work on joint projects.

* The so-called South-South Initiatives

Conclusion

Conducted analysis of the best practices in skills development in BRICS countries allows us not only to compare approaches to handling problems and objectives, but also to identify differences which stem from unique cultural, economic and social characteristics of each country. It must be said that the BRICS member-states set goals - to create more new jobs and train an even larger number of specialists for the domestic market as well as for the foreign market. This means the training of hundreds of millions employees up to 2025.

Comparing of problems and goals of BRICS countries

Education and vocational training systems of each BRICS country face their problems and goals, caused by socio-economic context inside the country. India, China and South Africa, for example, face the challenge of increasing literacy rate of their people, especially of those who live in the rural area. India and China also have to deal with employing a large number of young people.

At the same time there are common problems to be solved, and the experience of solving these problems will be extremely valuable for all BRICS members. The problems include the following:

- A weak connection between TVET and the demand of economy sectors;
- Lack of quality educational facilities;
- Incompatibility of national and international TVET standards.

The exchange of experiences in solving such issues can help to overcome problems much more effectively.

Comparison of BRICS's best tools and practices

In order to share an experience, it is interesting to compare best tools and practices applied in BRICS countries for handling the following objectives:

- Forecasting in TVET;
- Compliance with industry demands and education system tools;
- Creating flexible TVET and retraining systems;
- Increasing accessibility of education.

Tool category	Experience of BRICS countries
Forecasting tools in TVET	The majority of BRICS countries use strategies and foresight researches. India's experience in creation of Labour Market Information System and Brazil's development of Map of Identified Demands in technical specialists are quite interesting.
Tools for increasing accessibility of education	In all BRICS countries, there are financial aid programmes for the poor population, the majority of which live in the rural area. In addition, in India and RSA there are programmes aimed at raising youth awareness about available educational and vocational trainings.

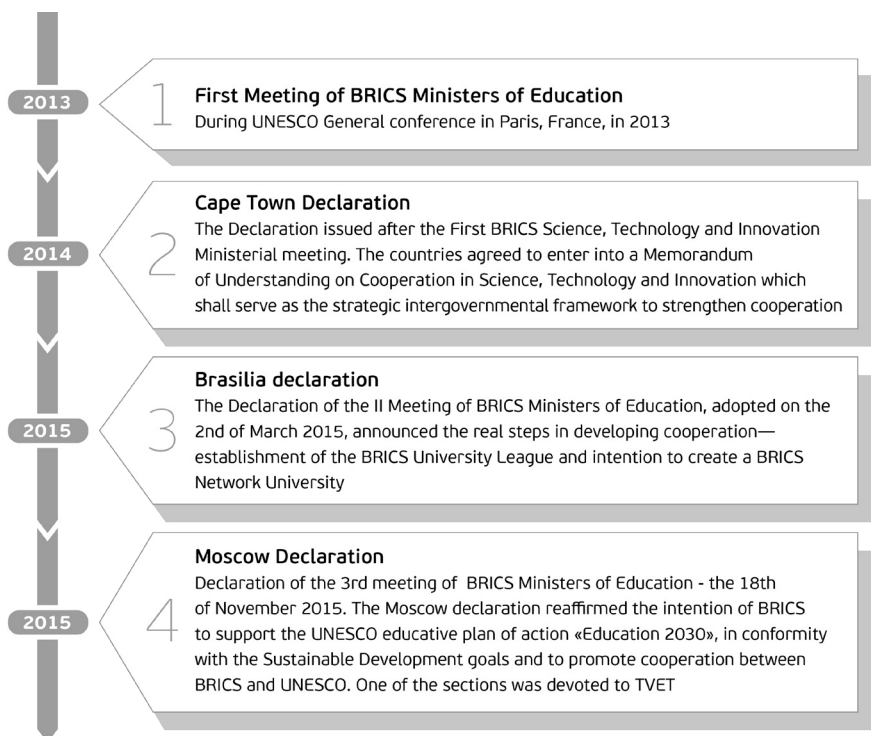
Mechanisms of uniting industry demands and education systems

In India and the Republic of South Africa, such mechanisms are regulated through the net of educational sectorial councils, a useful practice. For the same purposes, a Vocational Apprenticeship Programmes exists in Brazil. Moreover, a curious decision has been made by Chinese authorities when they implemented obligatory industrial practices for the teachers once every 2 years.

Tools for flexible TVET and retraining systems

The most interesting experience is in Brazil and India, where they have created systems of flexible horizontal and vertical mobility between steps and types of education. Almost all of BRICS countries have educational programmes for adults who either do not have any education or have poor qualification, and for those who have lost their job and would like to learn a new profession.

Interaction between BRICS countries



The contractual base for interaction of BRICS countries in the sphere of TVET started to form in 2013-2014. The result of this interaction is the Cape Town Declaration (2014), which lead to signing the Memorandum of Understanding on Cooperation in Science, Technology and Innovation (MoU), which establishes a strategic framework for cooperation in this direction.

By the end of 2015, we can list the best illustrations of BRICS cooperation in TVET:

1. The establishment of BRICS Universities League has a goal: to create a platform for the academic and professional cooperation, conduct joint research activities and implement international education projects;
2. The establishment of BRICS Network University aims at uniting higher education organisations from BRICS countries and raising the quality of education in these countries;
3. Mutual recognition of diplomas and degrees and stimulation of students and faculty exchange to share professional experience;
4. BRICS business council, in the framework of which the special Skills Development Working Group is formed, is responsible for cooperation and joint projects in TVET sphere. The group has already held several meetings, foresight-sessions and developed the Roadmap for 2015-2018.

The organisation has other plans and prospective initiatives, which were identified on the Roadmap for 2015-2018 at the foresight-session in Moscow in July this year. For instance, one of such initiatives is hosting WorldSkills BRICS, tentatively in 2018.

Recommendations

Taking into account the review of the presented best practices of BRICS countries, a number of recommendations can be made in order to improve cross-industry TVET in BRICS and in Russia, in particular:

- Joint support of competitiveness on the market of educational services: supporting various educational formats, platforms, reducing barriers on exchange of educational practices, supporting distant learning formats, including break-through retraining courses;
- Development and implementation of joint guidelines, aimed at solving typical problems in TVET sphere in BRICS countries (implementation of the dual education mode, opening WorldSkills competencies centers , etc.);
- Increasing the number of practices targeted at school age children: early career choice, involving children into preparation for cutting-edge competencies of the future, etc. Supporting children's involvement into international projects;
- Support and spread of proven educational programmes for decision-makers, thought-leaders and future ecosystems leaders;
- Promoting the corporate exchange of TVET practices: generalization and duplication of the best experiences of the private sector in the sphere of technical development training.



Autonomous noncommercial organization
Agency for Strategic Initiatives
36/9, Str. Novy Arbat, Moscow, Russia, 121099
Tel.: +7 (495) 690-91-29, 690-91-39
www.asi.ru

