

## **Research on Innovative Practice of Coordinated Development between Higher Vocational Education and Regional Economy in Krasnoyarsk Krai**

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**Abstract:** As one of the stratagem for social-economic development, the Russian Federation now is carrying out new policy of industrial activism, making great efforts to develop its own innovative economy as well. Krasnoyarsk Krai, a Russian federal subject with only a very few, had already met the development requirement and possible. In recent years, various ongoing activities and competitions under the guidance of the government are prosperous, the focus is on discussing and analyzing the necessity of constructing new modern educational system in a new situation and puts forward some thoughts and countermeasures, eventually realize the coordinate development between higher vocational education and regional economy.

**Keywords:** Krasnoyarsk Krai; vocational education; regional economic; coordinated development

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### **INTRODUCTION**

Interactive relationship between education and the economy seems to be a watershed in the change of tradition educational form to modern ones. Economic growth driven by education development is quickly becoming a measure of modernization which really starts and advance toward the right direction [1].

Vocational education, the most powerful resource to directly promote regional economic and social development, has been got attention widely by the community. The full play given to the modern function mainly reflected in the following aspects: first, to ensure as a launch pad for youngster career and boost the occupation flows perspective. The second is to eliminate the imbalance of labor force, improved product quality and production efficiency, reduce labor intensity and production costs. All the efforts are so conducive to social and economic development as well as regional peace and development. In the long process of vocational education, however, some problems often occurs in actual operation. The order-based cultivating mode of high vocational institutes does not guarantee growth in commercial; the general allocation of existing capital resource cannot meet the basic needs of the development of vocational education; from the perspective of residents and employers, critics will still find its transparency lacking; The existing external evaluation system, which is by no means faultless,

cannot pave the effective way for educational institution activities and the talent training qualities with thorough, systematic and objective assessment. When faced with the challenges to economic development, vocational educational systems are hard in time and effectively adjust themselves in the course of operation. Therefore, only by working hard to build up the modern vocational educational development pattern- it should serve and be placed in the service of the overall requirement of social development- can eventually achieve a virtuous circle of professional training and economic development.

From the perspective of methodology, within the scope of this paper, studies focus on the vocational education development in Russia Krasnoyarsk Krai. In the process of research, not only limited to the area as a geographical concept or political-administrative system, but more on it as a relatively independent economic society of its own features and characteristics, collecting and sorting all kinds of research material even the educational policy document in different period, try to conclude its evolution discipline in the course of description and analysis.

### **GENERAL SITUATION OF ECONOMIC DEVELOPMENT**

Krasnoyarsk Krai, lies in the middle of Siberia, long one of the traditional export of raw material suppliers and economic region, has built up a strong

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industrial potential. However, as Krai Governor Alexander HeLuo Bonny claimed: "So far, the era of the Soviet Union resources have been exhausted, Siberian industrialization era has come the second time, must be on the premise of the basic economic development, leading the new economy, new technology into the 21st century [2], ..."

After entering the 21st century, for the Krasnoyarsk region, the main problems in the industrial economic development are the result of years of bad management, which are lagging behind industrial development with single structure, almost all production activities concerned with the supporting industry basically related to energy production and primary processing technology, compared with a large share of 80%. The direction of economic development is often determined by one or two large enterprises, the integrated power of internal competition is lower than other regions. In the whole industrial economy structure, due to the dynamic energy industry and transportation industry is on the high side, thus leading to high production costs continue to rise. On the whole, the management is still relatively extensive, low labor productivity.

With the passage of time, fixed assets will be gradually loss; its value will gradually decrease. The craftsmanship does not keep up with the modern production requirements, just because the course of production takes more time, so the equipment utilization rate is low, the production efficiency is not high, innovation abilities lacking, all of which has resulted in weak core competence of corporations. Over the years regional and inter-regional business links did not tight along with economic development, the greatest obstacle restricted the major enterprises' further development is the lack of qualified managerial and technological personnel.

In view of the overall situation, efforts to support national commodity producers should also take into account.

It can be said that, Krasnoyarsk economy is in post-crisis phase of development, and the main task to be solved is to achieve economic diversification, form and develop PPP Mode, thus preserve and enhance the competitive advantages of the region. In accordance with the requirements of this task, it will focus on economic development in the following four aspects: First, to keep good relationship with big mining companies in local area, including with the necessary service facilities especially in the oil, gas industry; Second, making maximum use of raw material deep processing in the field of traditional (forestry complexes and nonferrous metals) and new (associated with oil and gas exploration) industrial areas; Third, to improve the efficiency of energy use in industry,

agriculture, housing and transportation and other sectors of the economy; the forth is to try to establish innovative economic sector on the basis of developed mining and raw material processing.

## **STRATEGY RESEARCH OF INNOVATIVE DEVELOPMENT**

In order to promote the steady development of the regional economy, accelerate the process of urbanization, increase budget revenue, narrowing the gap in residents' living standards, Krai government has formulated a series of regional social and economic development suited to innovative strategies, such as "2010 Krasnoyarsk Krai Economic and Social Development Program "," Krasnoyarsk Krai Development Strategy (2007 - 2017) "," 2020 Krasnoyarsk Krai Innovation Development Strategy "and so on. Especially in the "Regional Development Strategy (2007 - 2017)", a clear plan of its implementation steps and the mission statement and objectives was given for frontier economical development zoological environment, the last decade of this century. This development strategy is followed by phased development or initiatives for these specific domains [3].

## **ADAPTATION AND ACCUMULATION PHASE (2007-2009)**

This first phase of the objective is to call for processing enterprise to adopt policies that will promote effective innovation by encouraging competition and open markets. These efforts, which have facilitated the construction of infrastructures, help improve the investment environment and discourage further outflow. The goal is to ensure that the enterprise can operate effectively in accordance with modern production systems and the managers can exert their abilities normally, doing a good job of various preparations for a better economic future, covering laws and regulations, evaluation of investment items, infrastructure construction and other services.

## **ACCELERATE GROWTH AND MODERNIZATION PHASE (2010-2012)**

The task of this stage mainly is composed of four levels: first of all, all kinds of investment activities should be organized to the real economy; there was great change and elevation in industrial structure and technological structure. Next Realizing the modernization of technology and process by way of science and technology is implementation management to develop diversified scale economy as to fulfill the demand of local residents and businesses as well as international and domestic market. Small and medium-sized as well as private enterprises among others will occupy a leading position. At the same time, make great efforts to strengthen economic ties on raw material use and reuse. The third level is the joint attaches' great importance to the development of production and

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technology, especially in the machinery manufacturing, non-ferrous metallurgy, national defense industry and petrochemical industry in the field of joint. Last but not the least, working on and summing up the features and development process of the border region in the south, west and east constitute an important aspect in understanding and grasping the relations with the implementation effect of investment project.

### **THE DEVELOPMENT OF HIGH-TECH PRODUCTION AND SOCIAL ORIENTATION ECONOMY STAGE (2012-2017)**

At this stage, the first is on the basis of the information industry basic realize the modernization of the mechanical manufacturing industry; Second is to ensure that the most economic syntheses are able to take advantage of resources and knowledge intensive technology. The third major strategy is to fulfill the strategic tasks in this historical period attention should be paid to take corresponding measures to thoroughly change the structure of regional economies. Forth, the Krasnoyarsk region should make good use of their geographical advantages so as to open the international transportation lines. Fifth, the fundamental goal of economic development is to uplift the living standards and quality of life of the people.

The above different strategy implementation phase of the mission objectives, with a focus in the border region government, mainly includes: eliminate the regional gap, regulate population migration, however, human's personality developing and reasonable of the group behavior are the two important aspects in developing human resource, great efforts should be made to develop vocational education and training, and to establish an education system featuring vocational education with general education. Functional department concerned would help Krai northern areas develop its transportation, energy infrastructure. Mining prospecting efforts was further enhanced than before; actively attract strategic investors interested in mineral mining and processing production. How to convert management methods from closed system where supports the company's mission statement or a new business initiative to a comprehensive, systemic and coordinative regional production complex (cluster) maybe was a key consideration from the start also connect with developing fundamental infrastructure. To strengthen collaboration with the federal central, the new industrial policy priorities is reflected in the field of the electric power, coal industry, petroleum industry, wood processing, metallurgy, agro-industry and building materials production and construction, the innovation process synthesis in areas.

### **THE MODERN NEW SYSTEM OF VOCATIONAL EDUCATION IN KRASNOYARSK REGION**

As the most powerful resource to directly promote regional economic and social development, vocational education has been widely given attention. The full role in the modern vocational education is mainly manifested in the following several aspects: one is to ensure a successful career starting for young people and promote occupational mobility among adult residents. The second is to eliminate the problem of imbalance in the labor market, this idea is to boost efficiency, quality, and responsiveness by giving rank-and-file employees more say. Now, vocational education is in a very important period, which is conducive to social and economic development as well as regional peace and development. At present, the Krasnoyarsk region is committed to constructing a new modern vocational education system to promote education and combined closely with the regional economic development, in this way the road of its own to the availability of skills can be gradually explored, and eventually form an effective development mechanism by connecting with leading industry and pillar industry.

### **TO ESTABLISH A FLEXIBLE NETWORK OF VOCATIONAL EDUCATION INSTITUTIONS**

As mentioned earlier, Krasnoyarsk Krai region, in the economic sphere, one of the main tasks at this stage is to develop diversified economies. Development of diversified economy calls for the education system should be in accordance with the new direction of vocational and professional training to match the technical personnel. Since 2011, Krasnoyarsk Krai region began to create a new type of modern vocational education institutions.

The first type of vocational education institutions refers to a different focus on professional career teaching institutions, both for local communities to implement short-term, targeted education and training programs, and also offer a number of specialized programs in accordance with an order plan. In addition, lots of further educational service for adult (including those who did a job in local area) is being carried out in full swing. According to the actual situation of education, it is necessary and workable to implement the programs of higher vocational education just by means of opening the divisions or starting individual programs in addition to the elementary and secondary vocational school education. Some of typical action plans usually contains various fields. The unemployed and retired residents retraining program, immigrants integrate into the community and cultural promotion program, small, medium and large enterprises ordinary professional personnel training programs, corporate training programs and industrial Incubator program, students and adult residents of entrepreneurial skills and communication quality development plans, social counseling and appraisal program with disabilities, SMEs staff skill level joint certification program, and so on. The plan with the support of the municipal

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organizations, individuals and their families by the learners and even some employers to implement. Different professional educational institutions have different emphases on disciplines. The establishment and improvement of socialist market economic system has brought about new challenges and demand to the professional orientation in colleges which are better to develop personalized training programs accurately and changing educational content rapidly with the characteristics of flexibility.

The second type of vocational education institutions is a high-tech education center, which is created in the education industry on behalf of the Consortium. Supported by the Center's education program, training vocational ability is required and determined by their education goal, teaching program, and discipline and majors. This high-tech vocational education center gathered a large number of unique resources and advanced production technology, which includes a variety of institutions to implement relevant vocational education programs, as well as focusing on the implementation of professional teaching general education school students and adult residents of the region. In this type of vocational education institutions, vocational training activities are characterized as professional as possible, training objectives existing here are the aim location of personnel training, concerning many fields in housing and urban public utilities, construction, metallurgy, machine building, oil extraction and transport, wood processing industry, transportation and energy sectors. High-Tech Education Center also in the same case. What students learned is consistent with the training content for colleges and universities. Graduates are facing much more opportunities for graduates to show their ability to continue further study as they wish as long as they got a diploma or certificate. In vocational education center, high-tech professional and technical training in large part is in the charge of the employer, they participate in the syllabus design, modification and renewal, while the employers Council, industry professional league, or the employer himself can also be involved in the purchase and installation of equipment or even provide the necessary maintenance services, offers practical occasions for production practice. Meanwhile, regional government also carry out its duties in making preparations, through providing workshop, equipment, take responsibilities to strengthen the system of staff development and provide opportunities for professional advancement and retraining. What is more, with the help of a resource advantage from financial syndicate in educational industry, the authority could integrate the given resource creatively in order to achieve their integrated development for Krasnoyarsk elementary and higher education. Or put elementary education directly incorporated into education complex for integrative development. Any attempt to look for the best combination of general education in higher level and

specialized education from the angle of professional service in teaching and learning. On the other hand it can also offer an effective help for youth professional training and career orientation.

Considering the regional economic leading industry departments (such as machinery manufacturing, oil and gas industry, ferrous metallurgy, information engineering, etc.), in addition to create a new type of vocational education institutions, Krasnoyarsk's secondary vocational schools is currently working with Siberian Federal University, design and promote the applied undergraduate training plan, based on the continued implementation of secondary vocational education outline above, the secondary technical schools and secondary colleges incorporated Siberian Federal University. This kind of vocational education plan system provide a smooth and effective method for the following activities: ①to construct major which have a competitive advantage in the market. ②to introduce new foreign talents and intelligence will be beneficial to teaching, researching and talents training. ③to gather together with the best human resources, the best students and the most powerful research strength have focused on groundbreaking research on. ④to establish a research base for the regional economic leading industry and promising industry departments to carry out applied research and project research.

#### **To implement systematic procedure to comprehensive protection**

Construction of new modern vocational education system, in the Krasnoyarsk Krai region, based on the following system solutions to security: ①to establish a flexible and effective vocational education institutions network. ②to introduce the conception of state and society co-management and develop public-private partnership. ③to create a regional evaluation system which meet the economic talents' needs. ④to improve and implement reforms to the fiscal budget and taxation mechanisms. ⑤to strengthen its attraction and appeal to training program of vocational education organization. ⑥to finish and improve the system and mechanism to monitor, evaluate and control the education quality, make the environments and conditions for quality education better.

The conception of state and society co-management are introduced into the national vocational education system, then attract employers and enterprises to participate in education management process, the purpose of which is to improve the management efficiency of vocational education institutions. And the effective operation of public-private partnership mechanism, employers and enterprises not only should be actively involved in the formulation, implementation and monitoring and evaluation of vocational education

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plan, at the same time also willingly have more advertising money to spend on the vocational education system.

Talents structure and scale of the vocational education system must adapt to the requirement of regional economic development, to ensure that consistency happens, specifically relating to the training programs for vocational education and the entire social talented person's raise. Now, Krasnoyarsk Krai is via institutional (institutional) change to form a regional economic evaluation system with the service function:

- ① Personnel committee. Some specific features are, establishing vocational education development priority strategy, research regional order plan for talents and organize their implementation after approvals, all measures provide suggestions for optimization of regional vocational education institutions, formulated and implemented a series of industrial policies and special plans designed to improve and upgrade the industrial structure.
- ② the center for vocational education development. Its specific functions including monitoring changes in regional Krai labor markets, personnel demand forecast study of employers on the quality of personnel training requirements and analyze the requirements whether consistent with actual demand, provide scientific methods for implementation of the policy orientation of the vocational education, The municipal administrative organization shall organize training and qualification test for young graduates' professional skills.
- ③ Marketing services department for education. Its concrete function includes monitoring and analysis the local labor market dynamics, making a research on the educational needs from businesses and residents with the full-blown advertising campaign kicking off in recent years, put forward some suggestions on the educational program and enrollment plan, internationally, in many different programs of educational reform, more and more contents of education plan have been introduced.
- ④ career planning center. Its specific function is to ensure that residents can get all the relevant information clearly and early about regional talents demand, resources of human talents structure and a school or any other institution of education shall, in civil activities.
- ⑤ Employers Council. This organization mainly fulfill its duties in specific functions through participating in the education administration and providing requested information for employers on the quality of vocational education in different sectors, they melted into the education and organize supervision and inspection of the implementation of relative laws and regulations and provisions, joining and forming industry resource center, arranging playground、practice and science research reasonably.

In Krasnoyarsk Krai, on the path of modern financial appropriation institution of vocational

education system is ongoing, a main directions of the reform is the introduction of a standard fixed-sum allocation mechanism. Through the financial allocation reform and the competition in distribution, expected to achieve the following objectives:

- ① In order to ensure a smooth implementation for this system, the government adopted a series of effective measures. Some specific measures were put forward to ensure the implementation of pre-university vocational education plan and development planning for education institutions provides financial support.
- ② many people interpret through competition and division as part of the manifesto to remit money for update solution in terms of material wealth and technology in the middle region of China.
- ③ basic conditions conform to the requirements of the modern standard for education services. While another focus on the reform is to improve and perfect the incentive mechanism. In concrete terms,
- ① according to work and personal achievement, distribute the difference in labor remuneration should be put into practice among agency heads、teaching staff and educational experts in different levels of technology.
- ② formulating the quality evaluation criteria for teaching staff worked at vocational institutions.
- ③ increase the ratio of performance pay in the total remuneration payment and offer an opportunity to participate in the distribution for customer representative (trustees, administrators, supervisory board and other social organizations)
- ④ based on the principle of open and competitive, some money can be transferred to support to carry out applied research and project development.

With the development of Cross-type modern production and management, together with complex information flow and technology, the requirement for technical workers is better. In the development environment, the most important quality of a worker is to have the freedom to learn, to adapt to external changes as quickly as possible. Vocational education institutions in Krasnoyarsk Krai region always pay more attention to consider the recommendations from the universities before formulating and modifying plans on training. Because colleges and universities have more excellent professional teachers and ready be equipped with the most advanced technological installations, and already has established stable cooperative partnership with employers. To give some necessary vocational guidance for students in schools is the focus of Krasnoyarsk Krai, all vocational institutions. Every work has to be preceded by the stage of planning, embracing

- ① offering labor course in vocational educational institutions.
- ② Scientific and technological creation cannot exist without organized team work.
- ③ provide short-term training opportunities and access to vocational skills.
- ④ establish a compulsory course that put particular emphasis on the major.

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Creation and update of the system and mechanism to vocational education can be provide a guarantee for the effective implementation of various activities of educational institutions. Therefore, on the necessity and possibility of establishing modern vocational education system must set the very foundations of the evaluation index system of education quality. That system of evaluation mainly is as cuts into the spot update program of professional qualification authentication organized and practiced by the federal and regional employer unions. Being a center link of all, there are specific applications in the process, with a particular emphasis on bringing in and adopting different evaluation indexes and the education quality standards, and note from the perspective of social occupation role to support the formation system.

### CONCLUSION AND DISCUSSION

The early twenty-first century, facing the single industrial structure, industrial growth as complex economic situation, Krasnoyarsk Krai began to go through the formulation and implementation of strategic planning to seek survival and further to development. It is undeniable that Krai's economic restructuring will also bring more opportunities and inject new vitality to the educational system growth. Just as a good joint to link economy with education, a new direction of vocational education has been explicitly set for the future development, which is characteristic of something to embody modern education policies are social, adaptive, and diverse. It is necessary for administrator to adjust the macroscopical policies properly, improve the supply structure, and set up the innovative mechanism in brains and skills which successfully achieved effective combination with regional leading and pillar industry.

Modern economic growth began with the industrial revolution, and is closely related to the development of modern education, workforce education and training, technology innovation, skills has become critical factor in sustained economic growth and competition promotion [4]. The formation of "Education must serve economic and social development, economic and social development must rely on education" and other similar views suggested that education played a fundamental role in the modern economic and social development. Krasnoyarsk Krai, a profound understanding of the relationship between education and economic interaction, aims to develop and implement a range of innovative programs and ideas to build a new modern vocational education system, ultimately pledge to accomplish the magnificent goal of construction of a comfortably-off society smoothly. It is necessary to hard establish and perfect the new mutual educational development mode. What efforts and attempts Krasnoyarsk did is worthy of our attention and thought.

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