Gifted adolescents are distinguished with bright, obvious, sometimes spectacular achievements (actual giftedness) or have inner potential background and mental abilities for sucn achievements (potential giftedness) [1]. Teaching and developing intellectually gifted children is one of the main tasks of modern education. The importance of this tendency can be defined by several factors: the first is the society's awareness of the importance of "human capital" as a background and a main asset of our development; the second is the escalating mode of life, increase of information and emotional pressure on a person, lots of problems, the solving of which requires much intellectual efforts; the third is the society's demands to personality development, that should be not only highly educated, but also creative. Educating intellectually gifted children plays a special role in the process of developing such a personality, under the conditions of additional general education as well. The problem of developing an intelectual persoality has been brought up many times in pedagogical publications. The folowing issues have been considered: the notion of "intelligence" (D. Veksler, J. Guilford, V.P. Zinchenko, M.A. Kholodnaya, M.D. Shtern and others); the nature of intelligence (A.V. Brushlinskiy, L.S. Vygotskiy, Z.I. Kalmykova, A.R. Lutiya, S.L. Rubinshtein, O.K. Tikhomorov and others.); the possibilities to change intelligence (G. Aizenk, R. Amtkhauer, D. Veksler, J. Raven, Ch. Spearman and others); connections between intelligence and personality's abilities (A.A. Bodaliyev, L.S. Vygotskiy, V.V. Davydov, V.N. Druzhinin, D.N. Zavalishina, A.N. Leontyev, B.M. Teplov, V.D. Shadrikov, M.A. Kholodnaya and others). In some researches interconnection of intelligence and thinking process is shown (A.V. Bassov, L.S. Vygotskiy, E.A. Golubeva, V.P. Zinchenko, A.N. Lebedev, A.N. Leontyev, B.M. Teplov, O.K. Tikhomirov, P. Tulviste and others). In some publications of foreign (D. Veksler, T. Gasser, J. Millar, D. Hendrickson, J. Ertl and others) and our country (D.B. Bogoyavlenskaya, L.S. Vygotskiy, Yu.Z. Gilbukh, V.N. Druzhinin, N.S. Leites, A.M. Matyushkin, Ye.I. Tcheblanov, V.S. Yurkevich and others) scientists research results are presented on the phenomenon of gifted children, and the importance of abilities in this phenomenon deveopment is identified (A.V. Brushlinskiy, N.S. Leites, V.A. Krutetskiy, A.N. Leontyev, B.M. Teplov, V.D. Shadrikov and others) [2]. Creation of favourable conditions for forming a highly educated and competitive personality is becoming a strategic trend of education development [3]. Kazakhstan's political and economic status is increasing dynamicly and it creates the society's demand in intellecually developed, gifted people, who are able to think creatively, to put forward progressive ideas to change the reality and to encourage the increase of the state's competitiveness. Kazakhstan society's desire to reach worldwide educational standards stipulates the strategic goal of educational system reformation that is to create the most favourable conditions to develop gifted children and to implement their intellectual and creative potential [4]. Analyzing support system (organizational, psychoeducational and socio-economic assistance) of gifted children in Kazakhstan, we have to admit that this is a problem of our society in general. Only since 1996, when the President of the Republic of Kazakhstan N.A.

Nazyrbayev paid attention to this problem (The Decree “About Government Support and Development of Schools for Gifted Children”) [5], education of intellecually gifted children has been stimulated intensively. “State support program of young talanted people” is being worked out. In 1998 a new educational and research institution, Republican Theoretical and Practical Centre “Daryn” was founded. The main goals of the Centre are psychological diagnostics, support and development of gifted children personalities and young people. In 1999 “The Concept of Government youth policy of Kazakhstan Republic” was worked out. [6]. Kazakhstan Repulic Government Resolution approved “The Functioning Rules of Special Institutions for Gifted Children” [7]. At present in Kostanay Region there are 4 special educational institutions for gifted children, where 1209 students study. It is possible to enter these institutions on a competitive basis. In the region there are 12 innovative educational institutions (7 gymnasiums, 4 gymnasium-schools and 1 physico-mathematical lyceum). 8 045 students visit these educational institutions. In 2007 Regional Theoretical and Practical Centre “Kostanay Daryny” (hereinafter referred to as Centre) was founded to discover gifted children in the region, including children gifted in natural and math sciences, to continue developing their abilities. At present the database of the Cetre includes information about 4 384 gifted cildren of the region. To have students adapt to getting engineering education, it is necessary to pay attention to studying subjects of natural and math sciences (Mathematics, Physics, Chemistry, Biology, Computer Science) at school. To bring out gifted students good for engineering education the Centre arranges Regional rating olimpiads for pupils of 5th -8th grades in Mathematics, Physics, Chemistry and Biology. Distance rating olimpoads are carried out for students of 8th-11th grades. 3586 students participated in these olimpiads in 2012 (Table 1). Tab1e 1 The amount of students who took part in distance olimpiads in different subjects № Month Subject Amount of students 1 February Mathematics 578 2 March Computer Science 502 3 April Physics 335 4 May Biology 572 5 October Geography 682 6 November Chemistry 302 7 December Foreign Languages 615 Total 3586 The employees of the Centre visit different parts of the region to bring out intellecually gifted students, who will able to get engineering education in future. Off-site rating olimpiads among students of 9th -10th grades are carried out every month. Within a year 212 students became prizewinners in this knd of olimpiads (Table 2). Tab1e 2 The amount of prize-winners in off-site rating olimpiads among students of 9th -10th grades № Month Amount of prize-winners 1 February 34 2 March 29 3 April 28 4 May 26 5 October 29 6 November 23 7 December 25 8 February 18 Total 212 Republican olimpiad of schoolchildren in general subjects includes several stages. Schoolchildren of Kostanay region take an active part in all stages (Table 3). Tab1e 3 The Amount of schools and students, taking part in different stages of Republican olimpiad in engineering subjects Stages Total Including rural ones schools partici-pants schools partici-pants I (at schools) 403 18615 330 9972 II (municipal) 307 4135 237 2285 III (regional) 109 469 71 119 The Centre opened the Natural and Math Sciences School

(NMSS) to give advanced knowledge to the most gifted and talanted students of schools, gymnasiums and lyceums, to give students a chance to show good results at olimpiads at different stages in natural and math sciences and to prepare students to enter Higher Educational Engineering Institutions. Extra classes in Mathematics, Physics, Chemistry and Biology are arranged at the Natural and Math Sciences School. The classes are conducted by teachers of Higher Educational Institutions of the region. 196 students of 8th -11th grades go to this school. Training sessions are carried out for intellecually gifted children of Kostanay Region. The sessions last 5 days (4-5 times within an academic year). Classes are conducted by teachers of leading educational instititions of Kazakhstan and Russia and trainers of Republican academic competitions' teams. During such sessions studnts are deeply involved into the subject and they are trained for olimpiads at different stages. Psychoeducational trainings are carried out for the team of students who are going to take part in reginal olimpiads. This kind of preparation system allows students to participate effectively in republican olimpiads in general subjects (Table 4). Tab1e 4 Effectiveness of Kostanay region's students in republican olimpiads in general subjects № Year Amount of participants Amount of prize-winners Team place 1 2010 31 12 third 2 2011 48 20 second 3 2012 68 35 first 4 2013 71 33 first In 2012-2013 students of Kostanay region participated in different International olimpiads in natural and math sciences: All-Russian Team Competition of Schoolchildren in Programming — 3 medal places, International Zhautovskiy Competition in Mathematics, Physics and Computer Sceince — 3 medal places, Asian and Pacific Math Competition — 3 medal places, International Competition in Mathematics (IMO-2012, Argentina) — 1 medal place, Eurasian Competition in Computer Science — 1 medal place, International Competition in Mathematics «Tuymaada» 2 medal places, etc. The students of Kostanay region were prize-winners of International Math Olimpiad (IMO), International Chemical Olimpiad (IChO), International Physical Olimpiad (IPhO) in different years. Stumulating research activity is one of the modern innovative educational technologies, which is aimed at developing creative potential and personality's abilities, to form and encourage research skills, to cultivate independence and social activity. When working at a separate project students learn to use the gained knowledge in a real practical activity, which has social significance. Reginal Republican competition of research projects has some sections devoted to engieering: Technology, Physics, Earth and Space Science, Mathematics, Applied Mathematics, Computer Science, Environmental Protection, Ecomomics and others. The effectiveness of the regional and the republic scientific projects competitions' winners at the international level indicates that the very students will become the scientific élite of the country and will promote social and economic development in future. In 2013 the winners and the prize-winners of the republican competition of scientific projects in natural and math sciences took part in the following international scientific projects competitions: International Tournament "Computer Physics" (Protvino, Russian Federation), International Competition of

Schoolchildren Research Projects in Mechanics and Mathematics named after U. Dzholdasbekov (Almaty, Kazakhstan Republic), International Scientific Competition in Space Research “Descovering the World of Science” (Baikanur, Kazakhstan Republic), International Olimpiad of Young Inventors (Tbilisiy, Georgia), International Olimpiad-Project in World Supply (Energetics, Engineering and Ecology, (Houston, Texas, the USA), Math Competition of Scientific Projects “EuroMath” (Gothenburg, Sweden), International Competition “Mathematics and Designing” (Moscow, Russian Federation) and others. For the last five years the students of the region have effectively participated in different olimpiads and scientific projects’ competitions in Russia, Czech Republic, the USA, Germany, Brazil, Greece, Cyprus, Hungary, Turkey, Azerbaijan, Georgia, China, Bulgaria, the Netherlands and other countries. School leavers, who get medal places at republic olimpiads and research projects competitions, and who take part in competitions abroad, are given educational grants to study free in Kazakhstan and abroad. The students of the region get grants for free education at educational institutions of Russia, the USA, Great Britain, Turkey, Korea, Czech Republic, and other states. Having finished school this group of students usually chooses higher educational institutions in engineering field. Teachers’ work with gifted children is a complicated and a non-stop process. It requires teachers and educators to self-improve themselves, to enrich their knowledge and experience regularly and to improve their knowledge in the field of educational psychology of gifted children. The Centre arranges training sessions for teachers, who are going to teach intellecually gifted students, who have special abilities in natural and math sciences. Every month travelling seminars “Psychoeducational Aspects of Teaching Gifted Children” and “Modern Approaches to Teaching at a Modern School” are carried out in different parts of the rigion for teachers, directors’deputies, educators of educational departments, who monitor work with gifted children. These seminars are arranged for methodological support of those who are interested in developing intellecually gifted children that want to get engineering education in future. Psychological trainings are carried out as well. 243 teachers visited these seminars in 2012. Training seminars in solving olimpiad tasks, conducted by teachers of Higer Educational Institutions of Kazakhstan Republic and Russian Federation, take place to improve professional competence of teachers in natural and math sciences. 138 teachers of the rigion participated in such seminars in 2012. The reflection carried out at the end of the training seminars shows the high level of teaching and satisfaction with the content of the seminars The Regional Theoretical and Practical Centre “Kostanai Daryny” signed cooperation agreements with Kazan National Research Technical University, South Ural State University and others to direct professionally and to prepare school-leavers and vocatinal school-leavers for continuing education and getting engineering education at higher educational institutions. Since the Center started its work thousands of intellecually gifted and talanted students have had a chance to reveal their intelligent portential and have got an opportunity of free education at the best educational

institutions of Kazakhstan, CIS states and abroad. Hudreds of teachers have had a chance to develop their professional skills in teaching gifted students. To reform engineering education, industrial development, it is necessary to have a potential represented by younger generation. It is very important to improve material and technical resources of schools. Each school of Kostanai region has specially-equiped rooms in Physics, Chemisry and Biology with interactive facilities. Teachers work out and use flip-charts in class. Each school has an access to high-speed Internet. Interactive lessons are carried out in which any student can take part from any part of the country. An innovative component is to be introduced to develop engineering education. Only then it will be possible to design and create new equipment and technologies that will be marketable products. And that will be able to ensure new social and economic effects and will be competitive.