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**Annotation:** The results of the review to determine the operational indicators of machine and tractor units are presented, and the guarantees for the introduction of new technology based on their operational indicators are substantiated.

**Key words:** hitch, hook, power, implements, turning radius, trailer, working width.

1. Maximum traction (hook) power of the tractor in a given gear, kW,  $N_{kp}^{max} = \frac{P_{kp} \cdot V_p}{3.6}$  где  $P_{kp}$ - rated traction force on the hook, kN.

2. The power expended by the tractor to overcome rising terrain,  $N_a = \frac{Pa Vp}{3.6}$ .

3. Tractor traction efficiency  $\eta_{тяг} = \frac{N_{kp}}{N}$ .

4. Specific fuel consumption per 1 kW of traction power  $g_{kp} = \frac{G_T \cdot 100}{N_{kp}}$ .

Engine fuel consumption per week  $Q_{cm} = G_p \cdot T_p + G_x \cdot T_x + G_o \cdot T_o$ , Where  $G_p$ - mass fuel consumption by the engine when the unit moves, kg/s;  $G_x$ - mass fuel consumption of the engine when the unit is operating at idle turns and runs, kg/s;  $G_o$ - mass fuel consumption by the engine when the unit is stopped, kg/s;  $T_x$ - time spent on idle turns and runs when working on paddocks, h;  $T_o$ -time spent stopping the unit per shift, h.

If  $W_n < W_b$  and the new machine is used during busy periods, then the formula does not take into account all the losses associated with a decrease in productivity and an increase in work intensity, which will be different in different farms. We can say that the economic effect in this case is the maximum possible and cannot serve as a guarantee for the introduction of new technology. To ensure guaranteed implementation, it is necessary to proceed from a minimum economic effect, which does not depend on operating conditions.

**Conclusion:** The resulting expression makes sense not only for  $W_b > W_n$ , since otherwise the effect of a decrease in work intensity is clearly visible. The minimum annual economic effect serves as an indicator of the guarantee of the introduction of new equipment (machines). When  $E_{gmin} > 0$ , the machine will be implemented in any farm, since this effect is guaranteed regardless of the conditions of its use.

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**ORGANIZING THE SCIENTIFIC-RESEARCH WORKS OF STUDENTS ON GENERAL ENGINEERING IN INSTITUTIONS OF HIGHER EDUCATION****Nazarov Ortiq Tursunovich***Teacher of Djizzak Polytechnic Institute.*

**Annotation:** *Currently, in the higher education system of the Republic of Uzbekistan, great attention is being paid to the research work of students, which is one of the main forms of the educational process. It helps the student to improve his knowledge level in all aspects, the ability to apply the acquired knowledge and experience, and to develop his creative and scientific thinking.*

**Key words:** *In the system of higher education, great attention is paid to the educational process, students, scientific research.*

**Introduction:** The participation of students studying in higher educational institutions in scientific-research works and Olympiads prepares them for scientific activity in master's and doctoral studies, to study and choose methods of solving scientific problems effectively, at low cost and in a short time. gives the opportunity. The main tasks of students' scientific work are as follows: a) development of creative, scientific and analytical thinking; b) development of the skills of sustainable conduct of independent scientific and research work; In one sense, all university students are doing research because they are doing simple research while writing theses, doing coursework and graduation work. However, in addition to these general works, serious scientific and research works that are not included in the curriculum can be carried out. Such work, of course, covers a very small number of aspiring students, and there are certain difficulties in its proper organization. The traditional ways of organizing students' research work are scientific laboratories, clubs, student scientific societies and conferences. Working in such scientific associations requires the student's personal time, develops important qualities for the future researcher, such as creative thinking, responsibility for deadlines, and the ability to defend one's point of view. However, no matter how gifted a student is, he needs to be guided and supported by mentors, especially a junior student who does not want to engage in "boring science" when starting to master any subject ( and simply cannot). One of the main problems for students starting research work is choosing a research topic and formulating expected results. Choosing topics for students' scientific works is usually a problem for teachers.

Limited financing of scientific and research works in universities, lack of equipment to conduct real scientific research with students does not allow quality implementation of the planned work. Of course, one of the best options is to involve students in scientific-research work on the basis of state grants or economic contracts, but most mentor-teachers do not have the opportunity to organize work in this way. Thus, the

problems that arise when choosing a student's research work can be expressed as follows: a) the topic should be interesting for the student, and this research work can be carried out with the help of calculation or computer simulation; b) it should be provided that the results of scientific research work on the topic will be published at least at conferences of students or young scientists (because the research activity of each teacher - with the presence of his works published in mass media evaluated). At the same time, mentors-teachers who lead scientific work should not make the following mistakes: Based on the experiences of the "Materials Science and Mechanical Engineering" department of Jizzakh Polytechnic Institute, it is possible to express the following points. Items 2 and 3 of the above are of particular interest, as they provide for individual research topics. In order to carry out scientific and research work of students in the Department of "Materials Science and Mechanical Engineering", "Checking the changes in the indicators of the crank mechanism by changing the length of the crankshaft", "Possibilities of reducing the mass of the material by changing the quality of the material for the shafts", "Module and studying the possibilities of reducing the mass of the reducer by changing the distance between the centers", "Studying the effect of the use of correction coefficients on the quality indicators of gear wheels" and similar topics can be given for more than a year, because research on them can be carried out on the example of various machines, devices, equipment and mechanisms, so they are updated for each subsequent group of students. The use of computer programs with the ability to receive visual materials usually increases the interest of students in conducting research, facilitates the understanding of problems and helps to formulate new findings, and in addition, reduces the possibility of technical errors in calculations. After the scientific research work is completed, the graphic materials obtained with the help of the program can be used to create a report, create a presentation or write an article. These works have been carried out for 2 years at the "Materials Science and Mechanical Engineering" department. Within the framework of the "Young designer" circle, during this period, computer programs were developed for the topics "Design of a James reducer", "Design of a transmission consisting of a pair of cylindrical wheels" and "Calculation of indicators of a worm gear reducer", for laboratory training On the topic "Determining the kinematic parameters of the gearbox of the Spark car", various visual aids were prepared for the device and the educational process. Several articles were published in the collections of the conferences held in our Republic based on the results of some research works. In the future, it is planned to introduce the following scientific-research works in addition to the department.

**Conclusion:** In conclusion, it can be said that the proper organization of students' research work not only increases the level of knowledge of students, but also increases the efficiency of the educational process.