T6_63 THE USE OF INFORMATION TECHNOLOGIES WHILE STUDYING LAWS OF RECTILINEAR MOTION

Shylyn Tsydypov, Svetlana Sambueva, Tatyana Mamunova, Nikolai Chekmarev, Vitalii Parfyonov, *Buryat State University, Ulan-Ude, Russia* (shylyn@mail.ru)

The development of education is in continuous progress all over the world and is connected with such innovations as intensification, intellectualization, and individualization. Recently one has started solving the problem of creative skills on the new level – the competence approach to the meaning of education. The competence approach puts in the forefront not student's being kept informed, but his\her skills to solve problems. In order to realize the above-stated approach we have computerized the installation known as the Atwood's machine for studying rectilinear motion. To increase the accuracy of time measurements, linear and angular displacements we added photo gauges which register the change of black-and-white sectors put on the block. The signals form photo gauges move through the device of interface to the computer where the data of the system timer for each signal are being recorded into the file of variables. The instructions for managing the process of measurements are shown on the display in the interactive regime. As a result of the experiment the dependences of φ, ω, ε, s, v, a values on time are shown on the computer screen in the form of the tables. The students are offered themselves to construct the graphs of these values dependences on time with the help of tabular processor Excel where there is the opportunity to transfer initial data. Using opportunities of the tabular processor the students must receive the approximating equation and correlate its coefficients with the characteristics of the rectilinear motion. Thus, with the help of the given installation one can get average and more exact meanings of kinematics values by using student's self-constructed graphs of these values dependences on time. This installation also helps to check up the laws of rectilinear motion including the dynamic laws of rotational and translational motion.