Innovative Training Methods as a Tool for Improving Quality of Education of the Future Qualified construction Workers

Dear colleagues!

Integration of Ukraine into the global educational environment requires ongoing improvement of the national education system, search for efficient ways to raise the quality of educational services, testing and implementation of innovative teaching systems, actual provision of equal access of all citizens to high quality education, possibilities and freedom of choice in education, modernization of the education content, and its organization corresponding to international trends and requirements of the labour market, providing for lifelong education and training, and development of the public-civic management model.

Therefore, currently, the Regional VET center for construction technologies of Kharkiv region is searching for foreign companies operating in Ukrainian market and have modern technologies and materials, with solid financial support, to conclude contracts on cooperation in training construction professionals.

Out team can address global challenges such as designing e-manuals, e-lessons, webpages, and other IT training materials that provide for the high quality of the educational process. Over the last 12 years, we developed electronic textbooks and were granted the Visa of the Ministry of Education and Science of Ukraine in 3 professions: “Installer of plasterboard structures,” “Bricklayer,” “Electric welder of hand welding.”

Further work was aimed at creating electronic “Module lessons”. The difference of module lessons from an e-manual is in the option in the e-manual for a teacher to model the lesson, depending on the situation, and using the materials of the e-manual. On the other hand, in the module lesson all the learning material is generated into one module, into one topic, and it can be used irrespective of the lesson schedule.

In other words, after the lesson a learner can enter the Center’s website, or enter the cloud and work with the electronic module as long as needed for comprehension. Every time, the education process is accompanied by: stories, motivational exercises, tests for evaluation of learners’ progress for every stage of the material under study. In addition, the study module includes role-play elements that help master the program topics.

Now, let me offer to you an example of the Module Lesson.

Image of the lesson design.
Team of authors for the electronic module lesson.

(We invite for cooperation the best experts of the city of Kharkiv and from all over Ukraine.

Now, you can listen to the motivation to study the topic.

Now, you can see a structure of the lesson and the items to be considered during the lesson. Every item is a separate computer program that operates under certain methodology and the algorithm.

Now, you will see separated elements of the module lesson.
Topic and objective of the lesson.

Types of electrodes for welding small diameter pipes.

Questions for the lesson.
The objective of the training video is to show how the technology for welding elements of the structure on site is implemented, how to choose the materials and tools used for the welding.

The adjusting program “Practical task” included into the module allows to properly select key parameters of the welding modes (electrode diameter, strength of the welding current). To perform the welding from different brands of steel. In the process of performing the operations, the software adjusts the actions and provides comments.

This kind of training program offers more understanding on the peculiarities of pipe welding.

The program for performing practical laboratory works allows to focus the learner’s attention on the key topic of the lesson – sequence of technological actions. It consists of informative and practical parts. The informative part includes the step-by-step guidelines for performing the works. Upon taking this part of the lesson, learners start performing the practical task. It offers to answer questions in the format of tests, while later the performed work is evaluated.
The program “Tasks for Self-Control” offers to learners the possibility to improve their knowledge in gaming. The program consists of 20 questions with 4 multiple choice answers, with one correct option, and the scores are counted. If the answer is incorrect, you can get a tip “50X50”, “Call a friend” or “Group help.” When learners receive the final score they decide themselves what to do next: either to move to the practical work program, or revisit the material if they are not satisfied with the score.

The program to consolidate the study material. Learners need to put numbers into slots in the sequence corresponding to the technological process.
The program includes 4-level tasks: elementary, intermediate, satisfactory, and high. If a learner gives a correct answer, s/he gets a score, and the next question. If the answer is wrong s/he gets an unsatisfactory score, and the program goes off, suggesting to prepare better for the next time. The program allows for better preparation for control tests.

To conclude:

You can see the capacity of the electronic module lesson.

Now, please, compare

- a module lesson and a conventional lesson;
- capacity of the module lesson and the guidance paper;
- capacity of the module lesson and thematic files;
- capacity of the module lesson and regular text-books.

Make a conclusion.

Next this year, we plan to develop another e-lesson and present it in April, 2019, at the All-Ukrainian Competition run by the Knauf.

In my opinion, the future of the VET system is in the innovative technologies and projects.

Thank you for attention!