Monitoring of productive skills formation and development in teaching chemistry

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Until nowadays, the quality of the educational process was mainly assessed in the final student certification that always took place at the end of the academic term. The constant process of forming awareness and skills was totally ignored. Despite this, not being considered at the right time of learning, the exactly identified anticipated difficulties will provide the further changes for students, taking into account the individual circumstances that will definitely lead to higher academic results.

According to the Federal Educational Standard of Russia, students of all grades must develop the meta-skills (cross subject skills). Students are expected to be able to solve the problems among disciplines. The productive skills formation still remains to be the essential part of learning. It allows students to follow the previously anchored patterns. Also helps to apply the same procedure in newly occurred learning situations and successfully solve cognitive, creative tasks.

The purpose of the work: is to develop a digital toolkit that allows to track all the stages of productive skills formation based on the given chemistry algorithm in high school.

The work is based on the hypothesis that monitoring the productive skills formation process will increase the mobility of the feedback and determine the "zone of proximal development" for each student. It will be beneficial in the majority of the aspects: to build up the individual academic tracks; to ensure the individual approach whilst teaching chemistry at all stages; to promote awareness of the studied subject; to encourage students to solve high-level creative problems.

To achieve these goals, the digital toolkit was developed and tested. The toolkit allows to monitor each algorithmic component formation process; allows to determine the productive skills formation for solving further complex problems; and, to increase the usage of the feedback to make the learning process more efficient.

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