APPLICATION OF AGILE AND SCRUM IN EDUCATION

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Agile is the approach to program development described in the Agile Manifesto. This document reveals the philosophy:
- people and interactions are more important than processes and tools;
- a working program is more important than comprehensive documentation;
- cooperation with Customer is more important than agreeing on the terms of the contract;
- readiness for change is more important than passing the previous plan. [1]

Agile manifesto is used rather as a methodological prescription. The values and principles of the Agile Manifesto imply adaptation to each specific situation. Therefore, Agile is embodied in various frameworks. One of the most popular among them is Scrum. According to a 2015 survey by ScrumAlliance, they are widely used and will be used in various business sectors for the successful development of various projects. Therefore, the introduction of Scrum in modern education will be very appropriate.

Agile is usually adopted as a methodology. But the beauty of Agile is that this concept is much broader than methods and practices - it's a way of behaving, it's a culture and a way of thinking. So, Agile can be applied to any organization and any aspect of work. [2]

Flexible thinking is about innovation. It is a question of functioning in the conditions of uncertainty which is more and more in the modern world. And motivated teams that can adapt and respond to changes in a timely manner cope best with this.

In the traditional educational process, the unit of time is the semester. In fact, both students and teachers learn about learning outcomes every 4-5 months, when it's too late to change anything. The introduction of Agile-specific sprints can greatly reduce the feedback cycle, facilitating adaptation and allowing you to respond quickly to any changes. The end of each 2-3-week cycle is an opportunity to evaluate the acquired knowledge and experience, to understand what can be changed and improved. Each sprint begins with a planning meeting, in which students think about future work and assess the effort that will be needed over the next few weeks. The sprint ends with a retrospective: students analyze the work done, identify lessons learned and areas for improvement. Short feedback cycles also allow teachers to quickly identify problems and take appropriate action. In other words, it is better to
run several sprints than one marathon.

Agile involves teamwork and collaboration, putting people and their interactions above processes and tools. On the learning side - where each student faces the task of acquiring knowledge - the division into small, well-interacting teams helps to establish mutual assistance. In parallel with the achievement of individual goals, students pay attention to the development of their teammates. Study groups of 6-8 students should be supervised by a coach (teacher) - something like a Scrum-master [3] in the Agile-team. The task of the trainer is to eliminate barriers to learning that students face, to promote teamwork and cooperation between groups. The team meets with their coach every day, and each student says, “What did I do yesterday? What will I do today? What are the obstacles to my progress?” [3]

Unlike traditional training groups, teams are independent and autonomous - they decide how to plan a sprint, how to organize their work and how to track progress. Practice has shown that such a scheme of work meets the tasks of teachers - it has become easier to control the learning process and timely notice problems.

One of the key principles of Agile is to build projects around motivated people. In the educational process, the traditional motivator and measure of success are grades. Restructuring the educational process, they decided to replace them with points and awards. Students start from scratch and earn them as they study. This reward system allows you to go beyond the assessment of only the acquisition of knowledge. Students receive:

- Points for effort: this is a reward that evaluates the effort (for example, helping another student), not the result.
- Points for success: students also earn points for certain tasks. The better they do it, the more points they earn.
- Points for outstanding work: it evaluates the behavior that teachers want to encourage. For example, teamwork and communication.

Additional incentives that are not directly related to the learning process [4] but promote collaboration between the team and the whole group, were also useful. So, if all members of the team reach the goal of the sprint, students are invited to an unusual dinner, a tour or just organized an evening of movies and pizza. The difficulty with using this reward system was that some students were too keen on earning points and did not consider the main purpose of their studies.

Individual work is built into the structure of the lesson. The lesson always begins with a preliminary self-acquaintance with new material. This allows, first, to develop self-learning skills; and second, it makes lectures more productive because students come to class with a clear understanding of where they need the teacher's help. Upon completion of the previous work, students are interviewed. This gives them immediate feedback and initial calibration of knowledge and allows the teaching team to assess the level of understanding of the topic by students and build on this further work. In practical classes, students first work on tasks independently. And then receive from the teacher the right decisions and requests to compare their work with them, analyze the results and reflect on them. Conclusions are recorded in a short questionnaire; which students fill out at the end of each lesson. In addition, students compare with the sample not only their work, but also the results of teammates. This practice has proven to be a powerful tool for providing feedback and encouraging cooperation. The lesson ends with a list of additional materials for a deeper study of the topic.

A team-level retrospective is held at the end of each sprint. The groups
independently answer three key questions: “What have we done well? What could we do better? What new things can we do to improve our results?”.[3]

To increase the effectiveness of training, it is necessary to share the experience gained at the level of the entire study group. To this end, representatives of each team talk about the main points of their retrospective and share 1-2 recommendations for successful learning, which all students will be able to use in future sprints. Additionally, the exchange of experiences is held monthly at a special meeting for "storytelling", during which teams or groups of students share their experiences in unusual achievements.

References:
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IMPLEMENTATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN TRAINING OF FUTURE SPECIALISTS

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Abstract: The article analyzes the essence of the concepts “technology”, “information technology”; the problem of introduction of information and communication technologies into the training of future specialists is considered; the essence of varieties of modern technologies is revealed; stages of development of information processing (historical stages) are indicated.

Introduction. Nowadays the introduction of information and communication technologies into the training of future professionals is one of the most important and sustainable tendencies in the development of the world educational process.

One of the ways to improve the content of vocational training in higher vocational colleges that ensures the competitiveness of the graduate is the introduction (implementation) of modern pedagogical technologies, including information and