The Usage of Eduscrum in the Educational Process in Institutions of Higher Education

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October 17, 2020

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IN INSTITUTIONS OF HIGHER EDUCATION

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Abstract.
We are convinced by modern realities that in a changing world, most knowledge, except fundamental, looses its value with incredible speed. The ability to find non-standard solutions, readiness for continuous self-improvement and lifelong learning remain relevant. The demands of the labor market are also changing dynamically, expecting new competencies, skills, styles of work in future specialists. And so, university education must accept this challenge with dignity, adapting those best practices that have proven their effectiveness in other fields. In this context, the IT sector produces new approaches to business processes. Some of them are successfully used in various fields. One such example is the Agile flexible management methodology and its adapted version of eduScrum, which has been effectively implemented in global and domestic educational practice in recent years. This approach does not provide ready-made answers to existing questions, but it helps to form in both, students and teachers, relevant competencies; it will be impossible to survive without them in the near future.

The article briefly covers the history of development and the essence of Agile and Scrum, considers the possibility of their usage during educational process. It is emphasized that this methodology can be quite effective in higher education because it develops a high level of self-motivation in students, increases the productivity of the educational process through improving organizational forms, methods and ways of teaching, iterative interaction between teachers and students. It contributes to the student's professional and personal competencies that is expected from them by the society and the business circles.

Keywords: university education, educational product, flexible management, Agile-methodology, Scrum, EduScrum in higher education, competencies of 21st century students

1 Introduction

Today we hear constantly that the world has changed, that in recent years new trends are rapidly gaining space, which change our daily lives and affect our professional activities. In the global sense, this process is briefly called "NBICS - integration", or convergence (from: N - nano, B - bio, I - info, C - cognitive; S - social).

It is clear that everyone is trying to "find themselves" in new conditions. And the uniqueness of the situation is that this search happens not because we are obliged to do so by the law or administrative orders. Everyone who is serious about their professionalism physically feels that the effectively used in previous years methods almost stoped working today. This is very typical for education in general and the professional competence of the teacher in particular. There is a feeling of their own "incompetence", self-doubt and frustration. Then activity brings less and less pleasure, and most importantly doesn`t bring the desired result. But if you consider yourself a professional and are not going to stuck in "yesterday", you start looking for examples of successful, modern, effective experience that should be integrated into your own professional activity. What industry today demonstrates breakthrough, unique successes, innovation and outpacing growth comparing with the background of a rather modest situation in the domestic economy? An effective industry where advanced changes are taking place today is the IT sphere.

Successes in the IT sphere make us think what this phenomenon is and what practices, approaches, methods, principles should be adopted and, if possible, implemented in other areas, in particular in educational practice. In this sense, the methodology of the so-called Agile-management (agile software development, agile - flexible, fast, smart, agile) and its modifications: "Agile Modeling", "Crystal Clear", "Feature driven development", "Adaptive software development", Scrum combines flexibility of approaches, focused on constant changes in the external and internal environment, taking into account the feedback between stakeholders. This motivates to experiment and find new solutions without limiting by rigid framework of rules and standards. First and foremost its speed, autonomy and teamwork, which aims to unleash the potential of allparticipants.

1.1 Analysis of the latest relevant research and publications

The study of ways and potency of higher education modernization in Ukraine is reflected in the scientific works of V. Andrushchenko, V. Kremen, V. Oliynyk, N. Nychkalo, T. Lukina and others. Adaptation of European and world experience in higher education functioning is covered in the works of V. Lugovoi, S. Kalashnikova, J. Talanova, M. Kyrychenko, I. Regeylo, and others. The research of V. Bespalko, G. Dmytrenko, I. Zyazyun, Z. Ryabova, T. Sorochan and others is devoted to the search for new technologies in education, mechanisms for evaluating educational results, and approaches to developing the potential of students. The developed significant methodological work is the basis for further understanding and consideration of current trends in education, the introduction of innovative approaches for the development of the educational sector. In this way, in our opinion, the adaptation of the principles of Agile methodology in higher education deserves special attention.

Agile Methodology originates from the project method of J. Dewey [1] and gets its current continuation in 1986 with the issuing in the Harvard Business Review of the article "New product development. New Rules of the Game

"by Hirotaka Takeuchi (Professor of Management Practice, Harvard Business School) and Ikujiro Nonaka (Professor, Hitotsubashi University). During seven years after the article was published, the Easel Corporation team, led by Jeffer Sutherland and Ken Schwaber [9, 10], used Agile's ideas to justify SCRUM technology in software development management. SCRUM was presented in 1995 at a scientific conference of the Association of Computer Engineering in Austin, Texas. As the result, The Manifesto of Flexible Methodology was adopted in 2001, what lined out the ideas and principles of Agile. [6]. Since then, the technology has been tested and, thanks to its tangible effectiveness, gained recognition in almost all leading companies in the world and outside the IT industry. In ten years, Dutch teachers, led by Willy Weynands, have adapted Scrum technology to the educational process, creating in 2015 eduScrum - an innovative method of organizing the learning process. [11].

2 Research methodology

During the study we used a number of methods: collecting and analysing scientific publications on the experience of applying different approaches of Agile in business and education; comparing conceptual provisions with the main postulates of the Agile Manifesto. [5,13,15].

Agile emerged as an approach to software development replacing the "Waterfall" approach. The cascade methodology was based on a clear, consistent, gradual execution of tasks blocks: idea, technical task, design, programming, testing, final product. As the water flows along the steps of the cascade, so the task blocks are located one behind the other, which involves the gradual implementation of a pre-approved, detailed product development process and does not involve a return to the previous task block. The transition to the next step (next task) is possible only after finishing the previous one. However, the rapidity of the world has forced us to revise this methodology, and so the Agile methodology has emerged, summarizing existing approaches and practices and accumulating the most effective experience of the world's leading companies over the past fifty years.

Agile's main focus is flexible, rapid response to changes and continuous improvement of the project by receiving feedback from the end user, it is the dynamic formation of requirements and ensuring their implementation through constant interaction within self-organized groups. [14]

The essence of Agile was formulated in The Manifesto, developed by a group of enthusiastic programmers in February 2001 at a meeting of 17 independent practitioners ("Agile Alliance"). [12] The key ideas of the Agile Manifesto were concluded in twelve principles, which we will focus on later, and four positions, which the authors called the values of Agile:

1. People and their interaction are more important than processes and tools.
2. A working product is more important than comprehensive documentation.
3. Cooperation with the customer is more important then the fulfilled terms of the approved contract.
4. Readiness for change is more important than the original plan.

So, the focus of Agile is the role and importance of the team, collaboration, emphasis on the end result, speed, transparency of processes and continuous improvement.

It is important to emphasize that the Agile methodology is a general system direction that combines a number of different practices: scrum; kanban, Extreme programming, Lean software development, etc.

Scrum (the name is borrowed from the vocabulary of rugby players and translates as "fight, fight, rack", an element of the game that is created by players on the field to master the ball and pass the team as a whole, use different tactics to maximize the benefits of teamwork) became the most popular, certain mainstream method. Scrum is often called a framework, meaning a kind of organizational form that allows you to structure the content of activities. [7].

The basic principles of Scrum are as follows. Each project is worked on by a universal team of specialists (from five to seven people) who independently decide how to most rationally perform the task set before them. The team is joined by the Product Owner, who is responsible for the functionality of the final product, for the relationship between the customer and the team of performers. The owner of the product sets the direction of movement for the whole team, he does not interfere in the process, he is rather the curator.

Also, the team is joined by a Scrum-master (senior among equals), who helps to organize the business process, monitors the progress of work, motivates the team and monitors compliance with the Scrum-approach.

The team receives a project backlog that is a list of tasks and prioritizes their implementation.

The scrum approach involves the division of the workflow into sprints - cycles of fulfilled tasks. These are usually periods of a week to a month, depending on the project and the team. The sprint consists of task formulation, planning, discussion of problematic issues, presentation and analysis of results. The team itself evaluates its strength for one sprint and forms the number of tasks that can be performed daily. Each sprint ends with a demonstration of the product.

To keep all participants informed in the process, a Scrum-board is created, divided into columns "must be done", "at work", "done". Tasks are briefly formulated on stickers, which are moved from one column to another as tasks are performed to track the work in the dynamics.

The main meaning of the method is to perform tasks in teams, where everyone has a role and everyone is responsible for their part of the work.

There is an open exchange of information and knowledge in the team, where everyone attached to a common goal. Team members decide themselves how to work on the project, promptly respond to changing requirements, what motivates, guarantees freedom of action and imposes responsibility. The Scrum concept allows each team member to see their own and common achievements on a daily basis.

3 Results and discussion

Analysis of Scrum's experience proves that this is an iterative, team-oriented approach, the effectiveness of which is convincingly proven by the practice of most business structures and companies operating in various sectors of the economy. In recent years, this approach has been used not only to develop a specific product, but also to train the staff, who contributed to the spread of Scrum-methods in the field of education. Currently, elements of Scrum are implemented in the education management system at Cornell University, Northern Arizona University, Blueprint High School, Chandler, Arizona and others. Not to mention the fact that in many institutions (domestic are not an exception) the study of Agile-methodology is included in the curriculum. But introducing students to the advantages of flexible technologies is one thing, and to teach different disciplines according to the principles of Scrum is quite another. And that is why teachers, feeling the potential effectiveness of the Scrum approach, try to find out and apply, if possible, certain elements in teaching their own disciplines. There are not many clear, well-developed recommendations in this regard. The existing ones are very general. [2, 3].

First educators who paid attention to the Scrum framework and adapted it to the school realities were chemistry teacher Willy Weynands and college teacher Jan Van Rossum from the Dutch town of Alfen an en Rhein. These like-minded people experimented in the classroom and by 2015 they reviewed gained experience, and involving other enterprising teachers, enlisted the support of the Dutch business community and proposed a generalized method EduScrum for secondary and vocational education [11]. They adapted 12 Agile principles to education:

1. The highest priority is to meet the needs of students on the basis of lifelong learning.

2. Changing requirements is welcome even in the final stages of the educational process.

3. Cycles of conscious learning should be repeated as often as possible and last from a few weeks to two months, preferrably with shortest possible intervals.

4. Teachers and students should work together every day to make informed learning possible for all participants in the process.

5. Workers of the educational institution should be highly motivated professionals. For the work to be done, create the conditions, provide support and trust the students fully.

6. Direct communication is the most practical and effective way to exchange information both with the team and within the team.

7. Conscious learning is a key indicator of progress.

8. The educational process is built to remain stable. Teachers and students should be able to maintain the constant rhythm of learning.

9. Constant attention to the perfection and quality of the task increases the flexibility of the educational project.

10. Simplicity - the art of minimizing unnecessary work.

11. The best ideas and initiatives are born in self-organized teams of students.

12. The team should systematically analyze possible ways to improve the efficiency of tasks and adjust their work accordingly.

The authors of EduScrum emphasize that this is not a clearly defined process, it is rather a framework, a semantic framework within which the teacher can apply various techniques and technologies, providing the basic values of Scrum, namely:

- The leading role is transferred to the student. The role of the teacher is fundamentally changing. He becomes a navigator and motivator to find the knowledge, a manager and mentor.

- The result of training is the competencies acquired by the participants (competencies are more important than theoretical knowledge). This is especially true of the formation of so-called soft and digital competencies (communication, critical and systematic thinking, emotional intelligence, self-organization, etc.).

- Collaborations are more important than the internal rules. Training takes place on the basis of cooperation: student - teacher, student - student, teacher - team, team - team.

- Quick response, flexibility and readiness for constant change, as well as openness to new knowledge.

The key principles are the conscious assimilation of new material, close interaction with other participants in the educational process, the disclosure of their own capabilities, as well as the stages and tools of joint creativity. This, according to the authors of the EduScrum-approach and will help prepare competent professionals in demand in the XXI century. [2, 3, 8].

How these approaches can be implemented in a higher education institution. The principles are clearly articulated: divide a large learning task into several small ones, unite students into teams and entrust them to plan their own learning. EduScrum involves the formation of teams in which responsibility for the learning process is transferred from the teacher to the student.

As for the teacher, he becomes the manager of the educational process. He is responsible for the implementation of the declared educational (educational-professional, educational-scientific) program, the results of the educational process and the intermediate and final certification. He is the owner of the product. Its functions include: the division of the learning process into a series of short cycles - sprints. Each sprint is a thematically related set of learning material, such as a specific topic, module, or subtopic of a discipline. Sprint is pre-limited in time, preferrably not more than a month or two. Before the beginning of learning cycle the teacher makes the route list (backlog) - the ordered list of the purposes of training and approaches to work which correspond to the main purpose of an educational task, requirements to results of studying theme, tasks for a topic, the recommended

sources, a kind and terms of results presentation. tasks or projects on the topic that students must perform after studying the topic. Backlogs are subtasks that can be completed in a single sprint.

Then the teacher provides a procedure for quality control of the results, organizes consultations in accordance with the educational needs of students, monitors the implementation of tasks. The teacher carefully studies the entire course of studying the material, develops handouts for the lesson.

The teacher in the role of product owner is responsible for:

1) Selection of the required amount of study material.

2) Monitoring the quality of educational results of students.

3) Evaluation of the achievement of the final result by each student.

Students are self-organized into creative teams of performers (4-5 people). They take the route list and continue to work independently: decide how to achieve the goal, break the long way into tasks and distribute them among team members. Everyone chooses from the proposed list of creative work, which he will perform before completing the study of the topic. They choose how to perform the task (sprint), determine the ways to solve the problem and choose among themselves EduScrum-master. Teams independently determine the stages of the task and ways to achieve the goal and are responsible for the result, but can seek advice or ideas from the teacher and other teams. During the sprints, the participants actively interact, discuss problems, find solutions together and help each other. Cooperation between teams is only welcome.

EduScrum-master organizes work on sprint planning; works with the Scrum-board on which the actual state of performance of the task is fixed and coordinates work of group. EduScrum masters of teams are the students themselves, chosen by the team, recognizing their leadership and professional qualities.

Scrum-board - an overview of all the tasks that must be performed to achieve the goal, defined by the customer (teacher). In addition, Scrum -board gives an idea of planning. It shows where the team is now, what has been done already, and what is needs to be done. Accordingly, the Scrum-board is a forecast of whether the team will achieve the goal. The information on the Scrum board must be updated regularly, so it will reflect the current state of the team's progress towards the result. You can move the sticker to the "done" column only if all team members have coped with the task.

The teacher supervises the movement of the stickers on the Scrum board. He can test each team mrmber on the task knowledge from the "Done" column at any time and in any way. If it turns out that at least one of the team members failed, the sticker returns to the "In progress" column.

The sprint ends with a presentation and evaluation of the completed work (both by students and by the teacher), as well as the definition of reserves for improvement.

The sprint is divided into the following stages:

1. Team forming and planning of the sprint.

2. Five-minute meeting before each session to synchronize and prioritize actions.

3. Performing tasks during the sprint.

4. Sprint review - the final presentation of results in the form of tests, independent work, creative task, essay, etc.

5. Retrospective meeting after the sprint review - a meeting of the team for introspection, reflection on the effectiveness of the process. Adjustments are made if necessary. The next sprint is launched.

6. The team must achieve the goal that was set by the product owner (teacher) by the end of the sprint. Students are collectively responsible for the final result of the work.

The teacher decides what needs to be done. The EduScrum master and the group decide how to do it.

There are a real challenge and certain risks for the teacher who implements the Scrum-technology: different level of training, honesty, responsibility and motivation of students in the group, possible lags from the curriculum, restructuring of subject materials and own system of preparation for classes, additional efforts to constantly search for modern, practice-oriented ways to convey information.

Last academic year, we tried to introduce EduScrum elements in the teaching of the "Macroeconomics" subject for students studying towards Master`s degree specializing in "Entrepreneurship, Trade and Exchange". This curriculum is designed for 3 credits. We grouped the main topics of the course into 10 sprints, wrote a backlog for each sprint and identified a list of creative tasks that students had to present at the end of each sprint. (table 1).

Macroeconomics with elements of EduScrum

The purpose of the discipline: students obtain the system of economic knowledge as a base of a modern macroanalysis; acquiring skills in the study of aggregate indicators of economic and social development of the national economy through by using universal tools and macroeconomic modeling.		
Sprints	**Backlog**	**Result of Sprint**
1 Subject, method and functions of macroeconomics	Subject and object of macroeconomics. Methods of macroeconomic research and functions of macroeconomics. Fundamental concepts of macroeconomic theory. Objectives and tools of macroeconomic policy. Basic models of macroeconomic	Understand and use categorical apparatus and methodology (tests, creative tasks) Modern achievements of macroeconomic theory, published in leading professional journals Methodics of building macroeconomic models

	analysis.	
2. Macroeconomic indicators in the system of national accounts	Models of the cycle of goods and income in closed and open economy. Principles of building a system of national accounts. Basic macroeconomic indicators. Gross domestic product and methods of its calculation. Nominal and real GDP. Derivative indicators of national production (GNP, NPV, national income). Limited indicators of GDP and GNP. Indicators of public welfare.	Analysis of the peculiarities of economic relations development and formation between people in the process of economic activity; Application of dialectical methods of economic analysis in the study of elements of the market mechanism Analysis of production and distribution of Ukraine's GDP in 2018-2019 by types of economic activity and sectors of the economy. Analysis of the dynamics of real GDP in Ukraine in comparison with the world leading countries
3. Model of aggregate demand and aggregate supply. National market equilibrium	The aggregate demand essence and structure. Price and non-price factors of aggregate demand. Aggregate supply and its factors. Classical, Keynesian and generalized aggregate supply curve. Changes in the level of prices and real GDP in different parts of the curve. Interaction of aggregate supply and demand. Short-term equilibrium in commodity markets and changes in equilibrium. Long-term equilibrium in the ADAS model: classical and Keynesian approaches.	Macroeconomic problems of market development of goods and services in Ukraine (European countries) Views of the main macroeconomic schools on equilibrium What components of aggregate demand have changed to a greater extent over the last 5 years in Ukraine. Explain such dynamics. Give examples of non-price factors that affected the aggregate supply and shifted the AS curve over the past three years in Ukraine.
4. Consumption, savings and investment	Keynesian concept of consumption. Consumption and savings as a function of current income. Unprofitable factors of consumption and savings. Neoclassical concept of consumption. The latest theories of consumption and savings. Types of investment expenditures. The connection between investment and savings. Basic theory of autonomous investment in fixed capital. Investment multiplier. Multiplicative change in real GDP under the influence of changes in investment. Theory of induced investments.	Analysis of cash expenditures and savings structure in Ukrainian households. Problems of fixed capital renewal in Ukraine. Analysis of the dynamics of fixed capital investment. Problems of foreign investment in Ukraine. Analysis of the dynamics of foreign direct investment in the economy of Ukraine. Accelerator model. Model of interaction of multiplier and accelerator.
5. Fiscal policy of the state	The essence, goals and tools of fiscal policy. Tax revenues as the main source of state revenue. Principles of effective taxation. Government expenditures and their structure. Discretionary fiscal policy. Model of influence of state expenditures and taxes on total production. Automatic stabilizers and fiscal policy constraints. Fiscal policy and the state budget. Concepts of state budget balancing. Public debt and its impact on the national economy.	Analysis of problems related to the development of monetary relations, fiscal policy and government regulation in a market economy; Modern fiscal policy in Ukraine. Analysis of the structure and dynamics of the fiscal burden. Develop a forecast of changes in tax policy in Ukraine Why do we need the state?
6. Monetary policy	Money market. Monetary aggregates. Demand for money and factors. The mechanism of the money market.	Analysis of the structure and dynamics of cash income and expenditure of households in Ukraine.

	The central bank as a subject of monetary policy. Central bank operations and monetary base. Central bank instruments.	Analysis of the structure of revenues and expenditures of the state budget of Ukraine.
	Types of monetary policy and the mechanism of its impact on the economy.	Ukraine's foreign debt and problems of its servicing. Analysis of the dynamics and structure of Ukraine's external debt. Monetary policy of the National Bank of Ukraine.
	The essence of monetary policy. Discretionary and non-discretionary monetary policy. Monetary policy strategies. Consequences of monetary policy according to the ISLM model, coordination of fiscal and monetary policy.	Analysis of the dynamics of the monetary base and money supply in Ukraine.
		Essay "Money and culture are not compatible ?!"
7. Cyclical fluctuations and economic growth	Macroeconomic instability and uneven economic development.	Characteristics of fluctuations in economic development of Ukraine.
	Theories of cyclical development. Models of economic cycles.	The impact of the current global financial crisis on Ukraine's economy.
	State countercyclical regulation.	Modern strategies of economic breakthrough: international experience.
	The essence, sources and factors of economic growth.	Ukrainian breakthrough: modern strategies of economic development.
	Models of extensive economic growth in a closed economy. Scientific and technological progress as a source of intensive type of economic growth.	Your suggestions in solving the problem of the pension crisis.
	State regulation of economic growth.	
8. Inflation and anti-inflation policy	Inflation as a macroeconomic phenomenon, its indicators and types.	Differentiation of incomes.
	Theories of inflation. Fiscal and monetary aspects of inflation.	Analysis of the dynamics of income differentiation in Ukraine.
	Socio-economic consequences of inflation.	Inflation in Ukraine: causes and means of overcoming.
	Phillips curve and its modern interpretation.	Analysis of consumer price dynamics.
	Anti-inflation policy.	Inflationary processes in Ukraine: causes, consequences and means of containment.
9. Unemployment and employment policy	The mechanism of functioning of the labor market.	Employment in Ukraine. Analysis of the structure and dynamics of economic activity of the population of Ukraine.
	Employment rate and unemployment rate. Types of unemployment.	Unemployment in Ukraine. Analysis of the structure and dynamics of unemployment.
	Classical and Keynesian explanation of voluntary and forced unemployment.	Problems of regional unemployment. Analysis of the structure and dynamics of unemployment in different regions of Ukraine.
	Socio-economic consequences of unemployment. Oaken's law and curve.	Demographic crisis in Ukraine. Analysis of the dynamics of the number and composition of the population of Ukraine.
	The relationship between unemployment and inflation. Phillips curve.	Social obligations of the state and pension reform in Ukraine.
	Means of state regulation of employment and social protection.	Social standards and the problem of poverty. Poverty indicators and dynamics in Ukraine.
10. Macroeconomic policy in an open economy.	International division of labor as a factor in the development of the world economy. International division of labor as a factor in the development of the world economy.	What is international economic integration. Its types and factors.
	The mechanism of foreign economic policy. Trade policy instruments. Foreign investment. Comparative and absolute advantage.	Foreign trade policy in Ukraine.
		Analysis of the structure and dynamics of foreign trade. Influence on economic processes of external factors,
		Trends in the world economy.
		Ukraine in the measurement of the human development index.
	Balance of payments and its structure.	Ukraine in terms of the index of

	Exchange rate, types of exchange rates. International exchange rate systems.	economic freedom and the level of globalization.
	International flow of goods and capital. Impact of foreign trade and net exports on GDP. Mandel-Fleming model for a small open economy with a fixed and flexible exchange rate. Globalization of the world economy.	

The group of students formed teams (3-4 people) independently, chose EduScrum-masters and had the opportunity to independently determine ways to solve the problem and look for means to implement them.

Teams were asked, at their own discretion, to choose the order of sprints, provided that at the end of the course, all sprints will be fulfilled by each team. Some teams decided to start working on macroeconomics with "Macroeconomic Policy in an Open Economy", arguing that the main thing is to clarify the global problems of the world economy, others started with "Monetary Policy", arguing that money is the most important tool in economy. It was interesting to observe the process and make the first conclusions about the level of knowledge of previous courses ("Microeconomics", "Money and Credit", or "Business Economics", etc.) and identify gaps in knowledge that require additional attention in the future. In our opinion, it was valuable that some teams after the first week of work on the selected sprint, independently and thoughtfully (without the intervention and advice of the teacher) came to the conclusion that it is necessary to change the order of sprints, consciously preferring to fiish, first of all, "Subject, method and functions of macroeconomics". And this is the best evidence of conscious learning.

When discussing the intermediate results of sprints, team members did not take the teacher's information as dogma, exposing certain theoretical postulates to healthy criticism, citing real examples from history or own practice to support their own point of view. These discussions among the teacher and members of other teams stimulated the development of communicative competencies. The discussions of the essays "Money and culture are not compatible ?!", "Why do we need the state?" and "Your proposals in solving the problem of the pension crisis." were especially heated.

Teams did not receive a pre-compiled list of scientific and methodological sources from the teacher to help perform tasks. It was more important how the team members shared the "findings" of the latest practices and discovered the "classics".

During the time in the classroom, each team had the opportunity to consult with the teacher and demonstrate intermediate results. Only after completing the sprint (each team prepared an individual and test task), the team moved on to the next sprint.

We can state that in comparison with traditional training, studying the course on "Macroeconomics" with elements of EduScrum was more effective, interesting and easy. Everyone felt on the one hand an independent, conscious author of their own educational trajectory, and on the other - part of a team effort, where your success depends on the success of your team members. It is clear that not all students are equally honest, motivated and hardworking, but in general the division of responsibilities, rational use of individual creativity, free choice of non-standard approaches certainly contributed to the transition to a higher level of students` thinking. At the same time, the use of the EduScrum approach forced the teacher to reconsider his readiness to conduct classes in this format and motivated him to seek new ideas for creative tasks, adjust the content of sprints and master a wide range of opportunities for using modern digital technologies in professional activities.

4 Conclusions and follow-up research

Summarizing, the EduScrum methodology offers a wide range of resources that can and should be used today in the educational process. This approach is beginning to be implemented in the management of the learning process, and the organization of research activities of students, and in building an individual educational trajectory, maximizing the effectiveness of learning, changing approaches not only to interaction between participants in the educational process but also their worldview. Proven simple techniques help to solve significant problems in a changing world: change the atmosphere in the educational institution, the level of consciousness of both students and teachers, provide training to prepare professionals for the demands of tomorrow. As a teacher, comprehending the first experience, I plan to continue to apply the EduScrum methodology, as this methodology allows not only to effectively organize the learning process, but also to individualize the components of educational content.

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