



Improving Training of Modern Leaders Utilizing it in The Administration of The Higher Education System

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ABSTRACT

This paper aims to discuss the problem of organizing students' independent educational activities using IT projects and task management system. The concept of "independent learning activity" is formulated based on the studied domestic literature on this issue. The methodological potential of IT (e.g. the JIRA platform) is considered in the example of practical tasks of project management and organization of interaction between participants by analyzing the functions of the program and correlating them with the tasks being implemented. The data obtained indicate the expediency of using the JIRA project and task management system as a means of implementing independent research-level learning activities when organizing a group project. The content of the research level of the system for improving independent learning activities is disclosed with consideration of preparatory measures and the first form of practical application, mastered and updated, which is a "group project". The psycholinguistic content of independent learning activities of students at the level of higher education is analyzed. The results of a methodical analysis of the JIRA project and task management system, which allows you to coordinate the interaction of users, students, project managers, and teachers are presented. A variant of preparing students for the group implementation of specialized linguistic independent educational activities by using the JIRA project and task management system is proposed.

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1. INTRODUCTION

The concept of continuous education involves the formation of a professional who seeks to expand their areas of knowledge and improve their skills, which implies providing university students with the necessary means. Modern educational strategies focus on the development of internal potential, the elements of independent learning activity being introduced are aimed at the development and expansion of professional interests. Speaking of independent learning activities (SUD), we rely on the analyzed studies on the "learning activities" of V.V. Davydov (Reznik & Fomin, 2013), M.Ya. Basov (Liu, 2006), J.V. Atkinson (Joo *et al.*, 2014), M.A. Lonely (Zhdanov *et al.*, 2019). We share the vision of I.A. Winter (Rosser, 1990), I.Ya. Lerner on the hierarchy of the concepts of "independent work" and "independent activity".

The study allowed us to define SUD as "a purposeful, motivated process of actively expanding knowledge, developing skills and abilities in finding solutions to a problem, by performing educational and cognitive actions performed by a student in the allotted time and the prescribed amount, without the direct assistance of a teacher, guided by known and developed strategies, as well as formed skills and ideas about the order and correctness of performing actions, adjusted according to the result" (Legon *et al.*, 2013). When using extracurricular hours, students have unlimited time resources, which allows them to complete tasks at their own pace. In addition, the choice of topics meets current needs, contributing to the acquisition of new knowledge in the current real situation. When carrying out independent learning activities, students face many difficulties that can be solved by updating the implementation of training effective measures and the use of an Internet resource that helps to eliminate the difficulties of working communication.

According to the system in the higher education of the third generation (known as FSES HE 3++), university graduates must master a set of universal competencies, among which should be noted the ability to critically analyze problem situations based on a systematic approach, develop an action strategy (UK-1), the ability to manage a project at all stages of its life cycle (UK-2), the ability to organize and manage teamwork, develop a team strategy to achieve the goal (UK-3) and the ability to apply modern communication technologies, including in a foreign language for academic and professional interaction (UK- 4)1.

These universal competencies reflect the components of the EMS. The redistribution of the relationship between the responsibility of the teacher and the student justifies the emergence of independent learning activities to a new level of understanding of the essence of this component of education. The purpose of our study is to consider the issues of organizing students' independent learning activities using the JIRA project and task management system.

The topic of key competencies of the management staff of universities and research institutes, despite the seemingly narrow industry specifics, occupies a strong position in both foreign and Russian discourse, which is due to the serious transformation of education and science under the influence of globalization and increased competition. The manager's functionality is changing, therefore, the requirements for his professional skills are becoming more complicated: he must be competent in matters of institutional promotion of the organization, in the field of public relations, mobilization of funds, relations with alumni, employees and government organizations (Liu, 2006; Joo *et al.*, 2014; Rosser, 1990). An equally important task is the distribution of powers between different levels of management (Legon *et al.*, 2013). Many works are devoted to studying the factors that determine the leadership model, the management style of rectors, and assessing the

impact of their previous professional experience on the success of a university (Cook, 2008). Researchers focus on the family and gender characteristics of the manager. The Uzbek studies mainly consider the key areas of activity of rectors, which ensure the competitiveness of the organization in the global scientific and educational market, features of their career path (Reznik, 2009; Reznik, 2012), the influence of general competencies and personal qualities of a manager on the stability and competitiveness of an organization (Reznik, 2012; Reznik & Fomin, 2013). Among the actual characteristics of modern leaders, the authors name the media and publicity (Zhdanov *et al.*, 2019) - a consequence of the changing role of universities in the region. In the context of the commercialization of the processes of generating and disseminating knowledge, competencies in the field of entrepreneurship are becoming in demand.

Along with the theoretical understanding of the problem, there is a process of developing and implementing practical models and tools for assessing the competencies of existing managers, as well as preparing a reserve of managerial personnel (a project of an integrated evaluation of university rectors, implemented by the Analytical Center under the Government of Uzbekistan, the Leaders of Uzbek project of the ANO "Uzbek - a Land of Opportunities", the School of Rectors of the Economic Education Transformation Center, etc.). The logic for selecting "reservists" in most projects is based on indirect measurement (evaluation of proxy variables: scientometric indicators and documents confirming the education, experience, and academic degree of candidates) and psycho-diagnostics focused on testing cognitive abilities, motivation, value systems (using tests, personality questionnaires, business games). However, at the same time, the professional competencies of candidates, and their readiness to solve current and future tasks that face the heads of scientific and educational organizations remain beyond the scope of an objective assessment. Meanwhile, they must be resolved immediately after the appointment, because there is no adaptation period for the manager, and the effectiveness of his activities directly affects a significant number of people.

The formation of a reserve of managerial personnel for universities and research institutes, and the advanced training of existing managers are one of the system tasks of the Ministry of Education and Science of Russia, especially since today 96% of the heads of scientific organizations and organizations of higher education are faced with a lack of competencies in solving issues related to raising funds (77%), material and technical equipment of the organization (63%), the formation of effective development programs, digital transformation, motivating employees to accept the introduced changes, attracting qualified personnel (80%). 91% of heads of universities and 76% of heads of scientific organizations express a desire to be trained in the development of managerial competencies.

2. METHOD

Empirical and theoretical, including observation of the educational process, analysis, and generalization of domestic scientific papers devoted to current platforms for organizing projects and improving the DMS within the framework of the discipline "Foreign Language". The study was organized in several stages:

- (i) the formation of a competency profile (requirements for competencies) of the leaders of the educational and scientific organization; organizations;
- (ii) expert approbation of the competency model with the involvement of the management staff of universities and scientific organizations;
- (iii) development of tools for assessing candidates for the personnel reserve;

- (iv) approbation of tools for evaluating candidates for the reserve of leading personnel of educational and scientific organizations;
- (v) expert and analytical processing of the results obtained with proposals for updating approaches to the formation and management of a personnel reserve in the field of science and education.

The validity of the results was ensured through the use of a representative list of information sources on the requirements for the competencies of the management staff of universities and research institutes, as well as a set of methods for their determination, description, evaluation, including:

- (i) analysis of academic and expert publications;
- (ii) study of the provisions of professional standards of the head of an educational organization of higher education and the head of a scientific organization, descriptors of the Framework of General Competences, developed by the National Agency for the Development of Qualifications based on the analysis and systematization of scientific, methodological, expert literature, corporate and industry practices, analysis and structuring of big data, the results of a specially organized monitoring study (Galazhinsky, 2017);
- (iii) functional analysis of activity;
- (iv) adaptation of the method of formation assessment tools for independent assessment of qualifications.

When creating the competency model, it was extremely important to include the professional community in the process of proactive change with a proposal to analyze its activities and values. This approach to the formation of qualification requirements for senior management positions was used for the first time.

To implement it, a structured online survey was organized for the management of universities and scientific organizations according to a questionnaire posted on the electronic platform of the Resource Center "Center for Sociological and Internet Research".

The mailing was carried out to all heads of scientific organizations and organizations of higher education subordinate to the Ministry of Education and Science of Uzbekistan. (59% of the total number of heads of universities and research institutes, representatives of organizations from all regions of Uzbekistan. The minimum age of respondents is 30 years old, the maximum age is 74 years old, the average is 51 years old, and 40 people (10.3%) are respondents under 39 years old. 305 men (78.2%), 85 women (21.8%), 146 (37.4%) candidates of sciences, 244 (62.6%) - doctors of sciences, 214 (54.9%) associate professors, 176 (45.1%) professors Representatives of scientific organizations and higher education organizations from all federal districts of Uzbekistan took part in filling out the assessment form.

3. RESULTS AND DISCUSSION

When considering the organization of students' research activities, we use the JIRA software, the main tasks of which are to track errors and organize interaction with users. The choice of this project management tool is due to its high rating and customer satisfaction (over 90%), JIRA is determined to be the leader in the field of management products, and foreign and domestic companies declare possession of this system as one of the fundamental skills of personnel management in modern conditions. The competitive advantage of this program is free to use in groups of up to 10 people, as well as the intuitive use of all the functions offered, which vary depending on the given conditions. We are based on the system of improving the SUD proposed in our study, which is based on the

stages proposed by Raymond Corsini, and is also adapted to the conditions and specifics of a foreign language [8]. At the university, students are at the level of research activity, which is due to the requirements for school graduates (Cook, 2008).

In our system, the SUD of this level is a sequence of preparatory measures and the following forms of implementation: group project-individual project dilemma. The Internet provides a wide range of project management tools, however, an analysis of current online management tools made it possible to determine the methodological potential of the JIRA platform (Reznik, 2009; Reznik, 2012). It can be considered as an example of practical tasks of project management and organization of interaction between participants (Reznik, 2012; Galazhinsky, 2017). At the stage of understanding the global goal, JIRA provides for the inclusion of the main goals and the ones necessary to achieve tasks, the available deadlines for each of them are reflected on the timeline. Built-in backlogs are also effective, which indicate errors, requiring corrections and course corrections. To formulate the expected results and evaluation criteria, the platform allows you to include these components when describing tasks. In addition, there is the possibility of distributing obligations with the creation of an individual task map. A personalized itinerary allows you to track the degree of development of the task in the case, for further study, the student needs to use the solution received by a colleague.

Observation is carried out utilizing regular automatic notification of participants about available individual plans, as well as the status of their implementation. Introspection and adjustments provided during the activity are possible in comments with the choice of the addressee (@mention). Additional benefits of JIRA are a shared list of references generated by participants, along with individual and group activity reports provided by the platform. This contributes to the observation of students over the entire process of the DMS, as well as control of the time spent on completing tasks for further optimization of processes. The functionality of the platform meets the requirements, presented to the means of implementing group research, which confirms the optimality of using JIRA when organizing group project activities. The preparatory stage of the research group activity will be a series of measures introduced into the ordinary educational process, the optimal time interval of which is four sessions **Table 1** Note that the preparatory actions do not duplicate the topic of the current study, but are only a simulator for improving skills.

In the first lesson, it is justified to get acquainted with the types of projects and their goals, with the strategies for conducting this form of activity, as well as working out a suitable project for the given goals. The universal wording of the task here can be: "Match these research titles with proper project types. Justify your choice". During the implementation of the main envisaged actions, we rely on the existing skills of students, which are formed according to our type at school during the passage of the previous stages of the SUD and are not updated before the research stage (for example, visualization and formatting of results) see **Table 1**.

In the second lesson, the tasks for hierarchizing tasks, calculating the time for implementation, and splitting tasks into equal time-consuming tasks will be recommended. At the same time, primary training can be implemented in person with the removal of the most effective ways to achieve the goal, and for the secondary, actually independent, it is worth giving preference to work already on the platform itself with practicing the skill of organizing thoughts following the functionality (goal, tasks, limitation). Each is listed in **Table 1** Its action can be transformed into a task. For example, "1. Review the following tasks and organize them in increasing order (0 - takes a little time; 7 - takes a lot of time)", "2. Divide these tasks into micro-tasks (each should take about 15 minutes to solve)", "3.

Implement a multilateral (from the point of view of different disciplines) review of the basis of the study. Describe the tasks of each participant". JIRA is a tool capable of visualizing the entire course of activities. However, due to the lack of intuitive control, we include a block of acquaintance with the functions and the order of their use. In this case, the teacher can monitor and stimulate the activity of students when necessary, correct and update the necessary skills, and evaluate the progress of each student see **Figure 1**.

Table 1. Progress in the implementation of project activities as a component of the research phase of independent learning activities.

Preparatory measures	<ul style="list-style-type: none"> • familiarization with the types of projects and their goals; • familiarization with the strategies for conducting project activities. 	<ul style="list-style-type: none"> • development of the ability to hierarchize tasks; • development of the ability to draw up a map of equal time-consuming tasks; • development of the ability to distribute responsibilities. 	<ul style="list-style-type: none"> • familiarization with the forms of analysis of opinions and data on the issue (survey, conversation, questionnaire). 	<ul style="list-style-type: none"> • Debate • development of skills: • search (including polls, questionnaires...); • argumentation on the issue; • presenting your point of view; • vision of conducting scientific discussion/observance of scientific ethics; • team activities.
Practical use	<p>Group project:</p> <ul style="list-style-type: none"> • selection of research topics/problems; • choice of project type; • choice of activity strategy; • formulation of goals, objectives; • determination of deadlines for completing tasks; • formulation of expected results and criteria for evaluating the result at each stage; • allocation of liabilities; • adjustment of the course of activities/reallocation of obligations; • registration of the result of the activity; • discussion of performance results; • introspection and adjustment (if necessary); • visualization of results; • distribution of roles in the presentation of material; • creating a script. 			

The third lesson is devoted to familiarization with such methods of obtaining statistical data as a survey, test, or questionnaire. As part of face-to-face training, mastering the strategies for their creation and implementation is realized, and following the existing thematic, textual framework, questions are created with a test of understanding by the environment of their semantic content. We envisage complications of tasks from “Which

of the following does not answer the research topic?”, “Arrange the questions in the order determined by the structure of the questionnaire” to “Make a questionnaire on the following topics. They give the questionnaire to a friend and ask him to answer questions and evaluate it. They analyze what questions did not allow you to receive the expected answers and change them. During independent practice, we integrate either suitable Internet resources (SurveyMonkey) or teach how to format the results obtained offline in a format convenient for the participants. The result should be a standardized trial report uploaded to the JIRA rehearsal account.

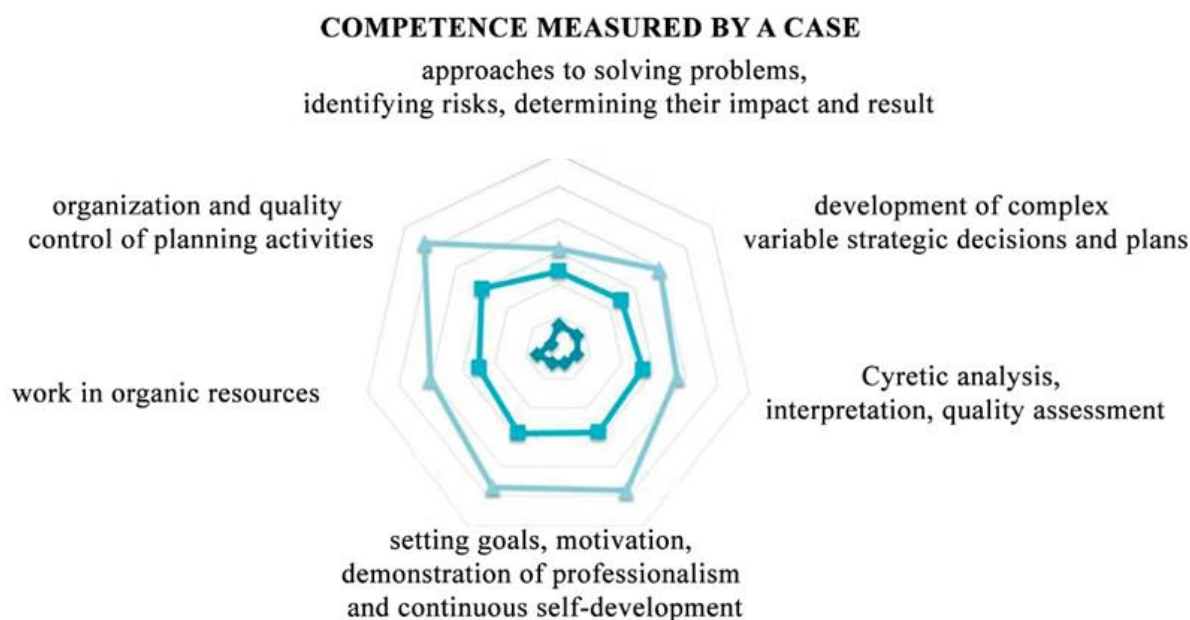


Figure 1. Example of an assessment tool for diagnostics of competence set development.

The last task of the preparatory stage is the actualization of the skills and abilities of logical formulation opinions based on the data received. This can be worked out in the format of a debate. When preparing for a debate, you can use game forms of work that contain the direction of anticipating the thoughts of opponents and finding counterarguments. During the preparatory stages, it is possible to use "brainstorming" and other forms that activate collective thought-creation, while the composition of the groups should be changed at each lesson to obtain the most complete bank of approaches and ideas.

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Upon completion of all stages, the student is ready to implement a project in a group on the JIRA platform. The project manager can track student activity using reports generated automatically by the platform. In the event of a decrease in the activity of activity or its absence, it would be optimal to conduct a "brainstorming" with the identification of problems, as well as the inclusion of a backlog on the platform for adjusting the progress of the project.

The specified procedure contributes to the formation of universal competencies, and the Internet space, as a familiar universal environment, becomes an alternative platform for joining efforts. The JIRA platform satisfies all of these research-level self-learning needs and can be a suitable tool for implementing group projects.

An analysis of the professional activity of heads of universities and research institutes, factors that determine the development of a professional trajectory and, in general, the functioning and development of organizations, requires serious scientific approaches to the formation of a system for cultivating future leaders and improving the skills of existing ones. The model of forming a reserve of leading personnel of scientific and educational organizations is based on the principles of taking into account the current strategic agenda for the socio-economic development of the Republic of Uzbekistan and national goals and involves an integrated approach to the selection of a highly qualified personnel resource. Approbation of the model made it possible to update the qualification requirements for the heads of universities and research institutes, develop a system for objective diagnostics of the formation of their professional and general competencies, and prepare recommendations for creating a multi-stage personnel reserve system.

The successful solution of national tasks depends to a large extent on the effectiveness of the administrative corps. The distinctive feature of the proposed model is the reproduction of the full cycle of qualification management: from determining the bar of requirements to objective confirmation of the specialist's compliance with these requirements, and his readiness to perform labor functions. A similar principle was used in the development of a staffing model for knowledge-intensive companies: from idea to preparation specialists.

4. CONCLUSION

The organization of students' independent educational activities utilizing an IT project and task management system is discussed in this study. Based on the reviewed domestic literature on this topic, the idea of "independent learning activity" is developed. By examining the program's features and comparing them to the tasks being carried out, the methodological potential of IT (such as the JIRA platform) is taken into account in the example of practical project management tasks and the arrangement of participant interaction. The results show how quickly independent research-level learning activities may be implemented utilizing the JIRA project and task management system while planning a group project. A "group project" is the first type of practical application that has been mastered and updated, and it serves as the research level for the system for developing independent learning activities. The psycholinguistic content of students' autonomous learning tasks at the higher education level is examined. The JIRA project and task management system, which enables you to organize the interaction of users, students, project managers, and professors, was subjected to a methodical investigation. Using the JIRA project and task management system, a different approach to preparing students for the group implementation of independent, specialized linguistic educational activities is suggested.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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