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## Articles In This Issue

1. Shavkat Saitdjanov, (2021). Solving Problems In Nuclear Physics. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 1-6.
2. Yusup Ganievich Makhmudov, Zulfikor Juraevich Kholmiraev, (2021). The Plan Of Internal Control Of The Educational Institution And Its Implementation. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 7-11.
3. Dilrabo Khidirboevna Nazarova, (2021). The Tradition Of Khamsanavism In The Timurid Period. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 12-17.
4. Umid Rustamovich Baltayev, (2021). The Role And Importance Of Using Dutor As Makom Instrument In Developing Students' Aesthetic Qualities At Specialized Music Schools. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 18-22.
5. Mahfuzul Atikuzzaman, (2021). Fishing Gears Utilized By The Anglers In Wetlands Of Feasible Use Of Fishery Assets. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 23-26.
6. Azim Rasulovich Abdullaev, Xayotbek Mansurjon O'g'li Rafiqov, Isroiljonova Nizomjon Qizi Zulxumor, (2021). A Review On: Analysis Of The Properties Of Thermal Insulation Materials. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 27-38.
7. Abdujabbarov Muslimbek Zoxidjon O'g'li, Aliyeva Dildar Ganiyevna, Karimov Raximjon Karimovich, (2021). Effect Of Yarn Shortening On The Structure Of The Fabric. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 39-45.
8. Zahid Khorshid, (2021). Variety in Photosynthetic Shades, Cell reinforcement Catalysts and Osmolyte Aggregation in Kelp of Red Ocean. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 46-49.
9. Olim Sabirovich Kazakov, Ibroxim Turabaev, (2021). Introduction Of Principles Of Management In Subjects Of Business. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 50-58.
10. Ibodulla Ismatullayevich Soliyev, Ilhom Ibroximovich Nurmatov, (2021). Nature And Methods Of Financial And Economic Evaluation Of Investment Projects. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 59-64.

11. Murod Khusenov, Otabek Umurov, Qo`ldosh Juraev, (2021). Development Of An Electronic System For Online Assessment Of The Work Of The Teaching Staff On A 110-Point System. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 65-71.
12. Sarvarbek Uktamboyo O`G`Li Yo`Ldoshev, (2021). The Implementation Of Makom Music Genre Into The Creative Works Of Uzbek Music Composers (In 1930-1990). *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 72-75.
13. Elmurod Tursunali Ogli Astanaliev, (2021). The Process Of Electronic Document Management In The System Of Railway Automation And Telemechanics. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 76-80.
14. Muharram Arabboevna Abdukadirova, (2021). The Role Of Builder And Building In The Development Of The Country Is Invaluable. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 81-84.
15. Shamsiddin Usmonov, Umidaxon Boltaboeva, Nilufarxon Rahmonova, Toshpulat Akbarov, (2021). Pedagogical Approaches To Educating Future Actors. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 85-90.
16. Dr.Jagruti Rathore, (2021). Recorded Actual Of Khalji And Tughluq Era In Sanskrit Signature Of Madhya Pradesh And Gujarat. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 91-93.
17. Qosimov Axtam Akramovich, Abdullayev Ulug`bek To`lanbayevich, Abdulazizov Shokirjon Abdurashid O`g`li, Hasanboyev Abdurasul Hasanboy O`g`li, (2021). Mathematical Modeling Of Moisture Properties Of Terry Tissue. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 94-99.
18. Kommuna Xursanovna Umrzoqova, (2021). Numerical Technologies In Economy. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 100-104.
19. Gaziev Khaydarali Ortikovich, (2021). Some Issues of Material Needs Management by the Example of SP LLC "Eurasia TAPO-Disk". *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 105-111.
20. Rafeev Davron Rafeevich, (2021). Mahallabay System Of Work: Organizational Mechanisms And Preliminary Results (On The Example Of Samarkand Region). *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 112-118.
21. Samiddin Nizamovich Tashnazarov, Nematova Dilnoza Azamatovna, (2021). Effective Use Of Fixed Assets In The Development Of The Digital Economy. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 119-123.

22. Usmanova Dilafuz Karshiyevna, (2021). Specific Analysis And Evaluation Competitor On The Ability Of Tourism In Uzbekistan. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 124-134.
23. Samiddin Tashnazarov, (2021). Transition To International Financial Reporting Standards In Developing Countries: Possibilities And Analysis Of Implementation. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 135-141.
24. Abdullaeva Sh.Z., Rustamova M., Ergashboev M., (2021). Econometric Analysis Of Factors Influencing The Practice Of Crediting To Small Businesses. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 142-148.
25. Abdullayev M.S., Matniyozov S.S., (2021). The Art Of Khorezmian Sculpture: Appearance And Specificity. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 149-155.
26. Khamdamova N.T., (2021). Amir Khusrau Dehlavi And Music. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 156-160.
27. Mansur Tuychiyevich Vakhabov, Latif Uroqovich Jamolov, Akmal Suvanovich Daminov, (2021). Genesis And Evolution Of Propaganda And Agitation. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 161-167.
28. Nuriddin Korabaev, (2021). Prospects Of The Prognosis For The Legalization Of Informal Employment In Uzbekistan. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 168-179.
29. Fotima Rasulbekovna Azimova, (2021). The Use Of Art Therapy In Overcoming Problems With The Psyche. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 180-184.
30. Xamidov N.I, (2021). Loan Mechanisms For Small Businesses. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 185-191.
31. Tuychiyeva Mahliyo Obidjon Kizi, (2021). Aluminum Oxychloride For Coagulation More Effective Coagulant For Water Purification. *The American Journal of Interdisciplinary Innovations and Research*, 3(05), 192-201.



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## Development Of An Electronic System For Online Assessment Of The Work Of The Teaching Staff On A 110-Point System

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### ABSTRACT

The main topic of the article is considered to be the automation of the rating approach. The model of the information system adaptable to automation and the system architecture are proposed in this article. The features of the system implementation are also discussed. The model and functions provide effective maintenance of the automation information system. The results of using the system are also given.

### KEYWORDS

Evaluation of teacher's activities, rating system, automation adaptable system, information system for evaluation of activities.

### INTRODUCTION

In order to ensure the implementation of the Decree of the President of the Republic of

Uzbekistan No. PP-4986 10.02.2021 "On measures to attract investments in the further

development of information technologies and communications", Decree of the President of the Republic of Uzbekistan No.UP-5847 08.10.2019 "On approval of the concept of development of the higher education system of the Republic Uzbekistan until 2030" and the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 20 10.02.2006 "On approval of the regulation on the procedure for admitting teachers to work in higher educational institutions on a competitive basis" Electronic system for online assessment of the work of professors, the teaching staff on a 110-point system was created at Bukhara State University.

An important factor in the higher education system that affects students, their level of training, is the professional level of knowledge and competence of the teaching staff. Evaluation of the effectiveness of teaching activities is a prerequisite for ensuring the functioning of the education quality management system, as it allows monitoring, controlling the qualitative change in human resources, activity in various areas of teaching load, work efficiency, identifying and maintaining positive trends in the work of the teaching staff.

The concept of modernization of domestic higher education and the introduction of new State educational standards for universities demand high quality of teachers' work. The quality of the training of specialists, bachelors and masters, that is, the training of highly qualified personnel for the country's economy, depends on the degree to which the teacher meets modern requirements. In addition, in connection with the requirements for the introduction of a new system of remuneration

for teachers, there is a need to revise the procedure for assessing their performance. At the same time, the established practice of assessing the effectiveness of teachers' activities is far from perfect, since it does not have clear criteria and is often focused on subjective and generalizing approaches. An increasingly urgent requirement of the time is the need for assessment using transparent and understandable to society quantitative parameters that characterize scientific and pedagogical activities and, most importantly, do not depend on the influence of subjective factors.

Creating a "portrait" of an efficiently working teacher is an urgent task and a guarantee of the quality of educational services that an educational institution provides to students. The tool in this case can be the rating of the teaching staff, which can also be a tool for monitoring the current educational activities of the institution, and for making managerial decisions for the leadership of the university on organizational, financial and personnel policies.

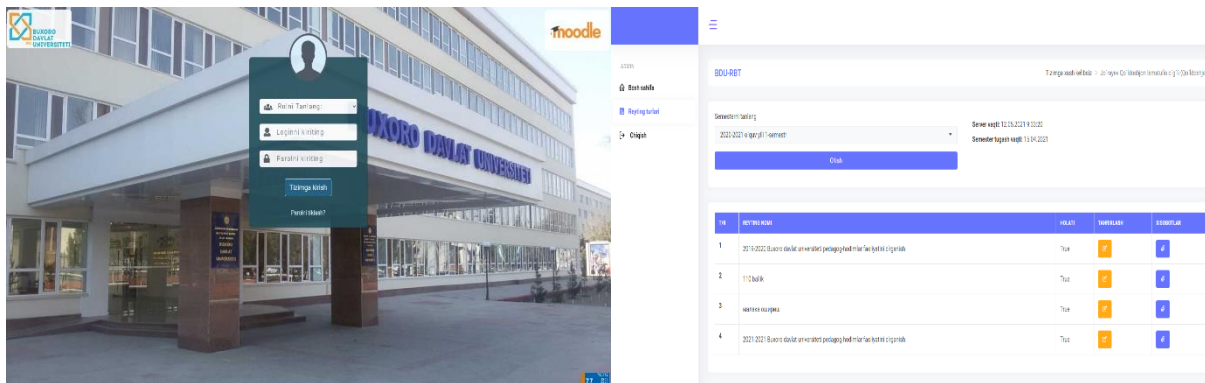
Setting ourselves the task of developing an automated system for forming the rating of the teaching staff, we will proceed from the fact that the system for assessing the activities of the teaching staff and faculties of the university is based on obvious and generally accepted indicators, which should be divided into invariant, that is, common to all and not depending on the profile of the teacher's activity, and variable, that is, depending on them. The rating, as a system of assessment based on formal indicators, should have undeniable advantages - transparency of assessment, ease of implementation and the



impossibility of arbitrarily overestimating or underestimating the assessment.

At present, rating methods for assessing the teaching staff have already been introduced in many universities in Bukhara. Based on the analysis of the experience of the implementation and functioning of systems in the Bukhara State Medical Institute, the Bukhara branch of the Tashkent Institute of Irrigation and Agricultural Mechanization, the Bukhara Engineering and Technological Institute, we can conclude that the invariant part of the criteria can be common, but

variable criteria also have considerable weight, which most often reflects the specifics of the university. At the same time, depending on the strategic goals that universities are striving to achieve, various approaches have been implemented, but ultimately the assessment of the activities of the teaching staff, departments and the university itself is carried out according to indicators of educational, methodological, scientific, social work and innovation activity. (Picture 1)



1-picture. System interface

Analysis of the methods for calculating the rating of the teaching staff, developed by teachers and masters of the Department of Information Technologies of Education Quality, showed that the rating system should take into account a large number of indicators and areas of activities done by teachers and departments (Picture 2), such as:

### Educational and methodical activity (40 points)

#### 1. Teaching activity (20 points):

- The level of proficiency in theoretical knowledge, practical skills and modern

trends in the taught subject (based on the results of open classes)

- Level of teaching quality (based on student survey results)
- Participation of students in Olympiads, in various competitions and scientific grants in the direction (subject) of the teacher

#### 2. Methodical work (20 points):

- Number of textbooks and teaching aids published by a teacher of a higher educational institution during the year
- The level of use of computer and information technologies in teaching, the

development of a training course and teaching and presentation materials

- The degree of application in the educational process of modern educational technologies and advanced methods of assessing students' knowledge

#### **Educational activities (20 points)**

- Participation in educational activities with students: spiritual and educational work, sports clubs, scientific, creative circles, cultural events, etc.
- Supervision in academic groups of students
- Educational work in the places of residence of students, participation in the organization of meaningful spending of students' free time after school hours
- Public and non-university work carried out within the framework of the department, region, republic

#### **Scientific activity (30 points)**

- Participation in scientific conferences
- Publications in scientific journals (including foreign ones), monographs
- Leadership or participation in international, scientific projects, economic contracts
- Number of patents and inventions
- Scientific supervision of dissertation research of basic doctoral students and doctoral students

- Conducting scientific research within the framework of doctoral dissertations

#### **Contribution to the development of a higher educational institution (10 points)**

- Participation in strengthening cooperation with other educational institutions: higher educational institutions, academic lyceums and vocational colleges (teaching and organizing training for them to improve the level of knowledge)
- Organization of cooperation and participation in exchange programs with foreign higher educational institutions
- Participation in the work on the opening of a new direction, a new department, laboratory, replenishment of the electronic database of the information resource center

#### **Personal qualities (10 points)**

- Academic degree and academic title
- Passing refresher courses
- Knowledge of a foreign language, its practical use in the development of materials and teaching the subject
- Undertaking an internship in foreign educational and scientific institutions

TOTAL (maximum score - 110)

ID	SOZILAN NOMI	MAX BALL	QO'SHILGAN VAQITI	TAMMOLASH	KIBOQOTLAR
1	Nazariy bilimlarni, amaliy ko'nikmalarni va o'qitiladigan fanning zamonaviy tendensiyalarini e'qaliganlik darajasi (ochiq mashg'ulotlar natijalari bo'yicha)	5	27.05.2020 9:47:10	of	of
2	Dars o'tayotgan fani doirasida videodars tayyorlagani, uning sifati va talabalarning foydalanish darajasi (ATM ma'lumotlari asosida)	5	27.05.2020 9:47:37	of	of
3	O'qituvchining masofaviy o'qitish shakllarini o'zlashtirgan, ta'lim platformasi kontentini sifati to'g'ri borganligi, taqdim etilgan ma'lumotlardan talabalarning samarali foydalanish olatlarini ta'kid etish bosqichidagi shaxsiy ma'lumot va bilim darajasi (talabalardan o'zlashtirilgan on-layn so'rovnomasi asosida)	5	27.05.2020 9:48:08	of	of
4	Talabalarning o'qituvchining yo'llanmasi (fani) bo'yicha olimpiadalarida, har hil tanlovlar va ilmiy grantlaridagi ishtiroki	5	27.05.2020 9:48:28	of	of
5	Yil mobaynida o'qituvchi tomondan nashr etilgan o'quv adabiyotlari: Darslik (Vazirlik grifi asosida)	5	27.05.2020 9:49:08	of	of
6	Yil mobaynida o'qituvchi tomondan nashr etilgan o'quv adabiyotlari o'quv qo'llanma, izohli lug'at (Vazirlik grifi asosida)	4	27.05.2020 9:49:35	of	of
7	O'zaro darslarga kelish (o'quv yili mobaynida kamida 4 ta)	3	27.05.2020 9:49:51	of	of
8	O'qitishda kompyuter va a'xborot texnologiyalaridan foydalanish darajasi, Moodle platformasidan foydalanib o'quv kursini va o'quv taqdimot materiallarini ishlab chiqish, elektron resurslar yaratishi (O'UB ma'lumotnomasi asosida)	5	27.05.2020 9:51:29	of	of
9	O'quv jarayonida zamonaviy ta'lim texnologiyalari va talabalar bilimlarini baholashning tij'or usullari qo'llanilishi darajasi	3	27.05.2020 9:52:01	of	of
10	Talabalar bilan tartibli ish bo'yicha tadbirlarda ishtirok etishi: ma'naviy-ma'rifiy ishlar, sport klublari, ilmiy ijodiy to'paraklar, madaniy tadbirlar va shu kabilar	6	27.05.2020 9:52:31	of	of
11	Talabalarning akademik guruhlarida guruh mas'abligi	6	27.05.2020 9:52:51	of	of

Picture 2. Rating.

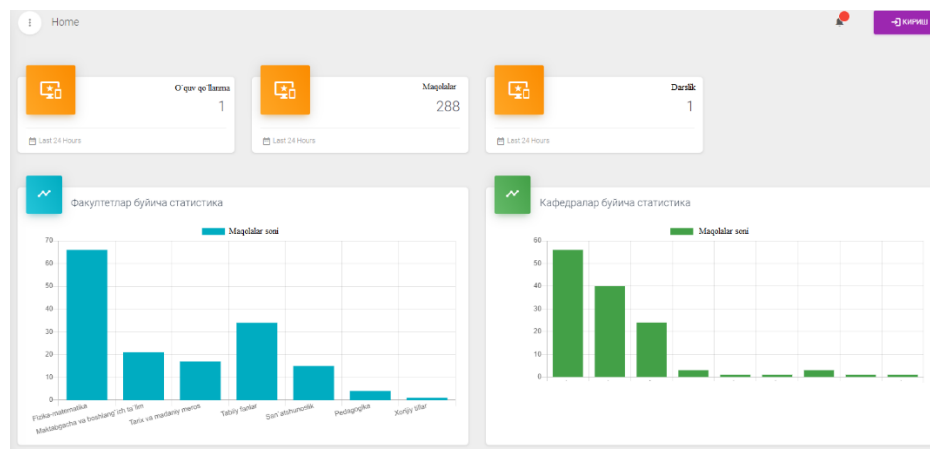
In connection with the large number, multilevel and different significance of the indicators taken into account in the formation of the rating, it is obvious that it is necessary to develop an automated system for forming the rating of the teaching staff, taking into account the specifics of our university.

For the above indicators, the coefficients (in accordance with their significance), their weight indicators must be calculated, on the basis of which the rating will actually be calculated. Rating should be the determining factor in assessing the performance of each teacher.

An automated information system can be a tool for the implementation of the formation of the rating of the teaching staff and departments of the university, as well as for the presentation of the generated data for different levels of users.

The automated rating formation system will make it possible to realize a number of opportunities associated with the formation of the rating of the teaching staff and departments:

- Formation and updating of the rating in on-line mode, which is ensured by organizing the input of performance indicators and the results of teachers' activities directly by the teachers themselves, which contributes to the updating of information at the current time, and also significantly reduces the time and human resources spent on the formation and replenishment of the system database;
- The ability to perform analysis with visualization of statistics and analytics of rating data (construction of reports, including in the form of tables, graphs, histograms)



- Access to information with differentiation of user rights by groups (teacher, head of department, dean's office, administration)

The user "Teacher" should be able to enter data on the results of his activities, based on the indicators of which the rating of the teaching staff is formed, and also to view the rating. The user "Head of the department" should be able to view the results of activities both for the department as a whole and in more detail for each teacher. The user "Dean's office" must have access to data on departments, as well as on each teacher, if necessary. The user "Rectorate" should have access to information both on the university and departments, and on teachers. This hierarchy will allow managers of various levels to make management decisions: head of the department, dean's office, administration, which will lead to more efficient use of human resources and distribution of material resources. As a result, we will be able to generate both average statistical reports and individual reports for each department.

Designing the architecture of a system for automated rating formation using the concept "model - view - behavior" is the most convenient, because this implementation will

allow on-line changes to be made directly to the system databases and to see the results of these changes, as well as in case of changes the logic of any of the components does not violate the logic of the system as a whole.

The implementation of an automated control system in the form of a server solution with a web interface will not only provide access to the rating from any workplace, but will also allow the rating of all teachers to be calculated centrally and at the same time intervals, which again will ensure transparency and impartiality of assessments.

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