



TASHKENT UNIVERSITY OF
INFORMATION TECHNOLOGIES
NAMED AFTER MUHAMMAD AL-KHWARIZMI

MUHAMMAD AL-XORAZMIY NOMIDAGI
TOSHKENT AXBOROT TEXNOLOGIYALARI
UNIVERSITETI

BULLETIN OF TUIT: MANAGEMENT AND COMMUNICATION TECHNOLOGIES



Comparative Analysis of the Assessment of Knowledge and Potential of Students in the System of Domestic and Foreign Universities

Alimova Fotima,
Computer engineering,
Tashkent university of information technologies
named after Muhammad al-Khwarizmi
Tashkent, Uzbekistan
tuit.alimova@gmail.com

Kuvnakov Avaz,
Computer engineering,
Tashkent university of information technologies
named after Muhammad al-Khwarizmi
Tashkent, Uzbekistan
avaz_a@yahoo.com

Abstract— At the current stage of development of educational standards, improving the quality of higher education is an important condition for the future competitiveness of young personnel, therefore, the potential approach is important not only for the implementation of academic activity of students of higher education institutions of international level, participation in grant programs and exchange programs, rather, it is important to assess the formation of professional potential in the field of specialization.

Keywords— Comparative analysis, student, competence, scholarship, performance.

1. INTRODUCTION

The final indicator of student performance in all countries is an educational document - a diploma, which a graduate of a higher educational institution strives to receive. The diploma is presented as a personal achievement of the student during his/her studies at the university.

Based on the results of the studies, students' grades are available in the diploma supplement, which is available in domestic and foreign universities. For example, in America it is called a "Transcript", which reflects the student's academic life and, in many ways, the levels of the graduate's future professional activity in all areas of education: "bachelor's degree/specialist - master's degree". degree - postgraduate study".

An American transcript is a life sentence, so this document determines how the graduate will be employed in a prestigious job around the world.

Many leading companies in the labor market clearly indicate the number of credits required for employment (usually at least 3-3.5 credits).

This is a very high acceptance rating, since to obtain an overall assessment score for the entire process, equivalent to three educational credits, it is necessary to score at least 85 points in all subjects in all semesters (at the American University, this is only a "B", which means "good", and on the national rating scale 90 points are "excellent").

2. RELATED WORKS

It is important that the foreign document (Transcript) reflects all the student's achievements: positive and negative, that is, all negative aspects are shown for the subjects that the

student retakes, all attempts to pass and increase the overall credit score are shown.

Each credit, which is an assessment of the student's achievements in the subject, corresponds not only to the number of hours in the studied subject, but also to the score (percentage "weight") calculated separately for each subject per semester, and also since all subject credit points are shown in total.

On the website of American (and European) universities there is a calculation calculator that allows you to correctly calculate the points received by the student.

If the total credit score for the semester is less than 2.897, the score will not be rounded to 2.90. This strict grading is indeed present and fair at American University.

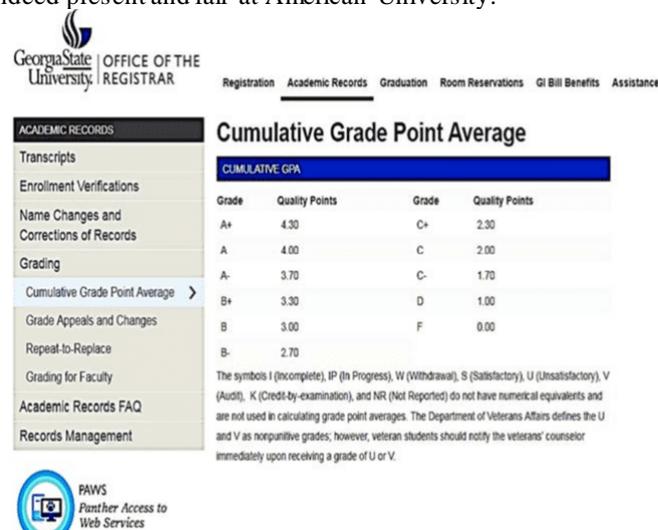


Figure 1. Georgia State University Credit Rating Assessment (Overall Credit Score) Correspondence to the earned grade

The calculator (Figure 2) allows a student to calculate their final grade for the semester based on the total credit score.

Below is an example of a comparison of grades at American University, showing the total credit GPA and earned credits (A through F).

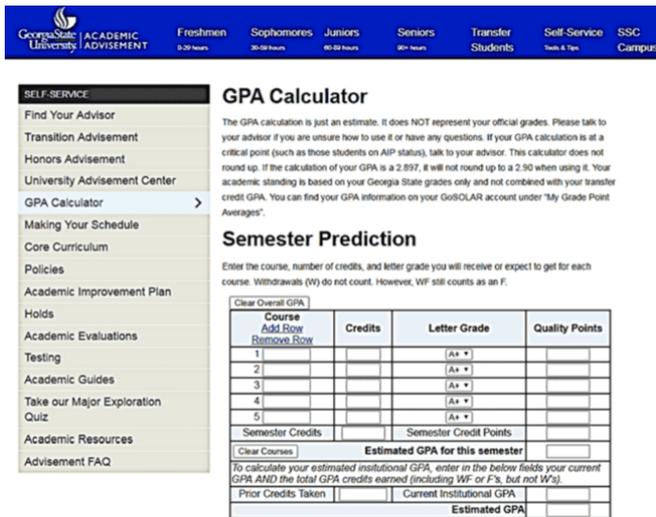


Figure 2. Calculator of the average grade point average for a course in one semester (must be at least 3) and the letter grade for the discipline (A-F) taking into account the complexity of the subjects.

The weight of the American letter grade can be compared with the distribution of points at a local university according to the grades “excellent – 5”, “good – 4”, “satisfactory – 3”.

Table 1. Converting grades to points

Grade	Point	GPA
A+	98-100	4.30
A	93-97	4.00
A-	90-92	3.70
B+	87-89	3.30
B	83-86	3.00
B-	80-82	2.70
C+	77-79	2.30
C	73-76	2.00
C-	70-72	1.70
D	60-69	1.00
F	0-59	0.00

Unlike American universities, local universities do not include failing grades in applications for a diploma, i.e. they are considered not mastered.

The total amount of work in accordance with the number of academic hours of subjects in the educational process determines the weight (importance) of the credit.

3. METHODS

The local education system varies from 0 to 100 points, similar to the foreign scoring system. The range of 60-100 points is the same for us and corresponds to the grade "satisfactory", and the grade "excellent" corresponds to 90

points. In a number of Russian universities, the grade "excellent" corresponds to 85 points.

It can be said that not all local universities have a single format for assessing student performance. Thus, in some universities, the grade is set from 0 to 8 points, similar to the European scale (ECTS) (see Table 1.). Other universities use their own grading scale.

If the system of assessment of abilities is defined in the form of points (table 5), the student's achievements are not indicated in the main documents: at all stages of education (bachelor's or specialist's degree, master's degree, doctoral degree), and are also not given as an addition to the diploma. Many teachers use the traditional method, which consists of using a rating scale from 2 to 5.

From Table 1.2 we see that 8-7 points in the rating correspond to an excellent grade; 6 points – for a grade of “good”; 5-4 points – a grade of “satisfactory”; 3, 2, 1 points – a grade of “unsatisfactory”.

Table 2. Conversion of test scores into university integral rating scores

Test result scores	Level 7	Rating scores
100-90	I highest	8 excellent
89-85	II high enough	7 excellent
71-84	III sufficient	6 good
65-70		5 satisfactory
60-64	IV less than sufficient	4 satisfactory
40-59	V low	3 unsatisfactory
20-39		2 unsatisfactory
15-19	VI could not determine	1 unsatisfactory
0-14		0 unsatisfactory

Table 2. shows the system of converting local university grades into ECTS (European Credit Transfer System) points and letter grades. The minimum score for participation in the differential test is 38 points.

Evaluation criteria (example):

20–18 points – The student knows the subject material well.

17–15 points – the student knows the subject material; but cannot answer fully.

14–13 points – the student does not know the subject material well enough.

Table 3. Translation of the European assessment system taking into account local-traditional assessment

ECTS grades	Traditional grades
A (8)	“Excellent”
B (7)	“Very good”
C (6)	Good
D (5)	Satisfactory
E (4)	Adequate
FX(3)	Fail
F (2)	Complete failure

12-11 points – the student has virtually no knowledge of the material, makes many mistakes and inaccuracies.

10-0 points – the student has no knowledge of the topic material, makes many mistakes, does not understand the questions.

A lot of scientific research has been conducted on the problem of credit-modular technology for assessing the skills of students at local universities, which is carried out rather theoretically [5].

As a result of the analysis of information systems of foreign and domestic universities, it was concluded that in each system, assessment criteria were developed and implemented in the system within the framework of the subjects studied by the student.

Applications for a scholarship at the American State University at Albany are submitted online, and documents uploaded to the system are not assessed according to the criteria of the university or its associated organizations (see Figure 1.4).

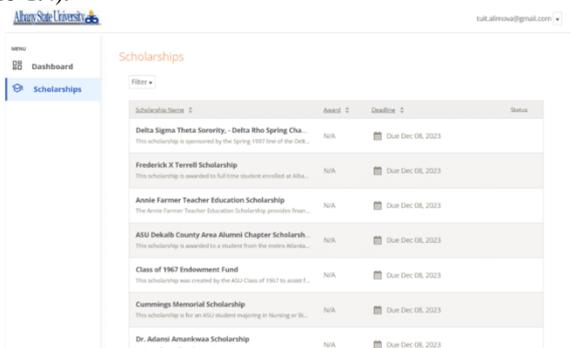


Figure 3. Albany State University Information System

The Georgia State University information system also provides students' GPAs, but does not evaluate research papers and other potential documents published by the student. However, this system does have modules that provide appropriate recommendations to students based on their performance in subjects [1].

The study examined the information systems of Belmont University and Bethel University. According to it, the

achievements achieved by students in these systems are uploaded to the system and sent for verification. The niche.com information system provides information on scholarships offered by universities and colleges in the United States and has a module that calculates the possibility of applying for and receiving the selected scholarship. This module indicates the acceptance or rejection of a student based on the calculation of his SAT/ACT/GPA scores (see Figure 5). This system uses the TOPSIS method to sort scholarship applicants based on whether a particular type of scholarship is appropriate or not [80; pp. 69-86]. It is based on the principle of choosing the alternative that is closest to the ideal solution and farthest from the negative solution. Potential indicators are assessed based on how close the alternative is to the ideal solution and how far it is from the negative solution [1].

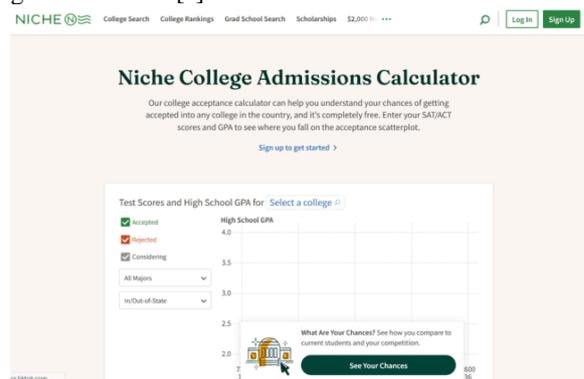


Figure 4. Information system "niche.com"

According to the information presented in Table 4, the functions provided by the systems hemis.uz, lms.tuit.uz, pf.bimm.uz, iqtidor.jdpu.uz, t-salohiyat.uz are compared.

Table 4. Criteria of the information systems

Criteria	hemis.uz	lms.tuit.uz	pf.bimm.uz	iqtidor.jdpu.uz	t-salohiyat.uz
assessment of knowledge of the subject	+	+	+	-	+
assessment of knowledge of international languages	-	-	+	-	+
assessment of the indicator of possession of a patent or certificate	-	-	+	-	+
assessment of published development indicators	-	-	+	-	+
assessment of the indicator of participation in the project	-	-	+	-	+
assessment of the indicator of possession of a preferential scholarship	-	-	-	-	+
Monitoring of competence indicators	-	-	-	-	+

American Koshma University, Cambridge University and Harvard University, British Oxford University and Boşka University, you can get a scholarship to study for 1.5 years. If you have a university scholarship, you can get a scholarship to help you achieve your best academic achievements.

As stated in the Resolution of the President of the Republic of Uzbekistan dated May 3, 2019 "On measures to

identify talented youth and create a continuous system for training highly qualified personnel" PQ-4306 "Support for promising youth in our country, creating additional conditions for realizing their talent, effectively launching scientific and innovative activities... At the same time, there is a need to identify talented youth and improve the continuous system of training highly qualified personnel in order to increase the

enthusiasm and intellectual potential of the younger generation to gain knowledge, as well as further enhance the prestige of our country in the international arena" [5].

Code	Criteria Name	Atribut	Action
C1	College Student GPA Value	benefit	[edit] [delete]
C2	File Complete	benefit	[edit] [delete]
C3	Income of Parents	benefit	[edit] [delete]
C4	Number Dependents of Parents (Children)	benefit	[edit] [delete]
C5	Job Status	benefit	[edit] [delete]

Figure 5. Sepuluh Nopember Jayapura Scholarship Applicant Assessment System

Assessment and monitoring of the potential level of students in higher education institutions is a multi-stage technological process, and the fact that an information system has not been developed in this regard has led to the implementation of this research work.

The principle of hierarchy is the basis for the creation and practical implementation of the algorithm for managing multi-level potential assessment of technological processes.

Representation of a multi-stage technological process in the form of a hierarchical structure allows for iteration of the problem being solved by dividing the system under consideration into several small parts, increasing the reliability and flexibility of the entire system, dividing it into local subsystems and obtaining simple solutions.

In essence, the introduction of a hierarchical structure in the management of multi-stage technological processes is the division of the system into separate sections for each part, taking into account the changes occurring under certain conditions and on the basis of information related to These are separate issues that allow for an independent solution. It should be noted that the application of the hierarchical principle to the management system can create a discrepancy between private and general goals in the formation of management decisions. Therefore, the use of multi-stage technological processes based on the principle of hierarchy in solving large-scale problems provides a number of advantages. It is proposed that the information system, which is considered as an activity for the implementation of multi-stage technological processes based on the principle of hierarchy, is carried out on a single platform of higher education institutions. Multi-level management processes between higher education institutions and ministries are presented (see Figure 6).

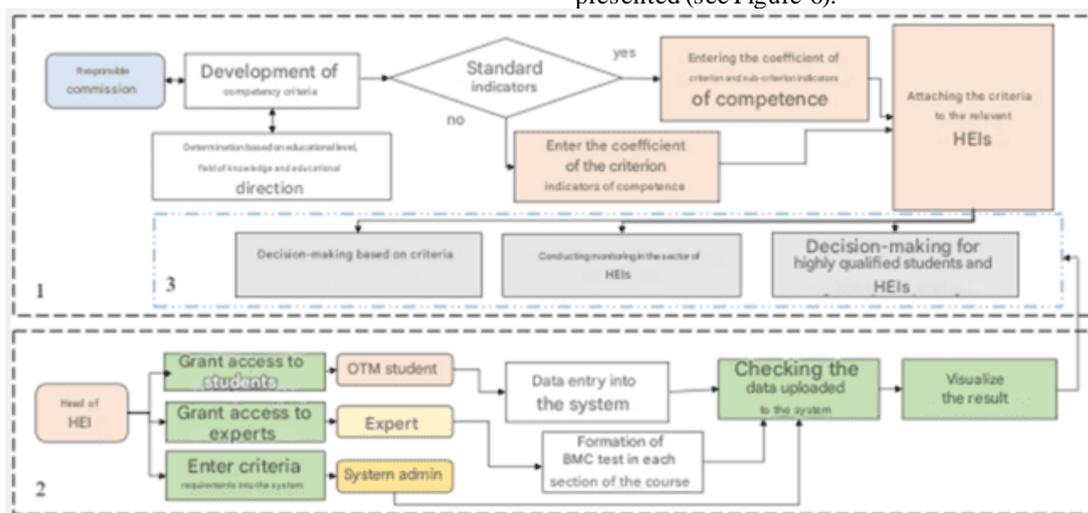


Figure 6. Multi-stage technological processes for automated assessment of the potential level of students in higher education institutions

4. RESULTS

Based on the conceptual scheme for presenting data in the digitalization of the process of assessing the potential of students in higher education institutions, in order to assess the potential of students in higher education institutions, to form a database and develop lower indicators of the level of students' potential, as well as to encourage students with potential on a national scale:

1. The Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan forms criteria for determining the potential of students based on the level of education and field of knowledge. Each criterion is assigned a weighting coefficient depending on the level of importance. These criteria will be sent to the relevant universities.

2. Each higher education institution provides the relevant persons (students, experts) with access rights to enter and

generate data according to the criteria, and the data is uploaded. The uploaded data is processed in the information system, and the result is presented visually.

3. The Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan should monitor the data received from each higher education institution in the field of universities and students, in the field of potential indicators, and make decisions based on the results, based on the needs of the time, the criteria can be changed.

5. CONCLUSION

Based on the above, the following tasks were defined:

1. automated assessment of the potential level of students of higher education institutions, functional processes of information flows and information systems for providing information are analyzed.

2. a conceptual model of multi-level technological processes of automated assessment of the potential level of students of higher education institutions and a model of multi-level data exchange are developed.

REFERENCES

- [1] N. Mahamatov et al., "Application of Blockchain Technology in Higher Education," 2020 *International Conference on Information Science and Communications Technologies (ICISCT)*, Apr. 2020, pp. 1-6, doi: 10.1109/ICISCT50599.2020.9351424.
- [2] Rahimova, S. G., & Djuraev, T. B. (2024). THE ROLE OF BLOCKCHAIN TECHNOLOGIES IN THE DIGITAL SOCIETY. *JOURNAL OF INNOVATIONS IN SCIENTIFIC AND EDUCATIONAL RESEARCH*, 7(11), 150-157.
- [3] Grigorev, A., Kuvnakov, A., et al. "Dynamics of user behavior in the e-government system of Uzbekistan." *AIP Conference Proceedings*. Vol. 3045. No. 1. AIP Publishing, 2024. <https://doi.org/10.1063/5.0197413>.
- [4] Ma'ruf Kuchimov, Ra'no Xurramova, Tulkindjon Djuraev; Regional regulation of youth employment system. *AIP Conf. Proc.* 27 November 2024; 3244(1): 030038. <https://doi.org/10.1063/5.0242026>
- [5] Turdikulovich, U.J., Mahmudjonovna, P.Z., Abdujalolovna, N.N., Abdunabiyevna, K.M., Muratovna, A.F. DEVELOPING A MODEL FOR COMPREHENSIVE AND SIMILARITY ANALYSIS OF SYSTEMS. *International Journal of Mechatronics and Applied Mechanics*. 2022, 2022(11), pp. 107–114.
- [6] Usmonov, J., Djuraev, T., Malikova, N., & Kuvnakov, A. (2023). Modeling of cargo flow processes in the logistics of the transport system. In *E3S Web of Conferences* (Vol. 401, p. 02056). EDP Sciences. <https://doi.org/10.1051/e3sconf/202340102056>
- [7] Nazarova Gulchexra Nurmuxanbetovna, Abirova Nargizabonu Shavkatbek qizi, Aytmuxamedova Tamara Kalmaxonovna. THE EFFECTIVENESS OF THE USE OF DIGITAL TECHNOLOGY IN THE PROCESSING OF POSTAL ITEMS IN AUTOMATED TECHNOLOGICAL PROCESSES. *JCR*. 2020; Volume 7 , Issue-12: 963-965. doi: 10.31838/jcr.07.12.169