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MAIN ASPECTS OF EDUCATION IN MODERN UZBEKISTAN AND METHODS OF ITS DEVELOPMENT

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Abstract
Pedagogy raises the consciousness of people, nations, brings them to a new level of life, so it is important to organize it correctly. The correct understanding of this issue affects both the physical and mental health of the nation. The component of pedagogy has its own laws, just like the laws of math and physics. Since pedagogy has cognitive levels, it is correct to use Bloom's taxonomy, Cambridge methods and 4C+2C to study them.

Keywords: education, students, method, effective, learning, knowledge, skills, approach, critical thinking, creativity, evaluate, analyze, apply, understand, remember, communication, collaboration, choice.

INTRODUCTION

Do you know what Bloom's taxonomy is? There are 6 steps, 6 words: evaluate, analyze, remember, understand, create, apply. Do you think that these 6 verbs are given in the correct order? The answer is no. Let me introduce what is Bloom’s taxonomy first, and, in the end, we will create the correct order.

Let’s go back to the history of this method. In 1956, Benjamin Bloom, along with Max Englehart, Edward Furst, Walter Hill, and David Krathwohl, introduced a framework for classifying educational goals called the Taxonomy of Educational Objectives. Commonly referred to as Bloom's Taxonomy, this framework has been widely used by teachers and college instructors over the years.

Bloom and his collaborators identified six major categories in their taxonomy: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. Noticeably, the list was different back in that time from what we have now. Then, after exactly 45 years, in 2001, a group consisting of cognitive psychologists, curriculum theorists, instructional researchers, and testing and assessment specialists published an updated version of Bloom's Taxonomy, titled A Taxonomy for Teaching, Learning, and Assessment. This new title shifts focus from the more static idea of "educational objectives" in Bloom's original work to a more dynamic concept of classification. The authors of the revised taxonomy emphasize this dynamic approach by using verbs and gerunds to name their categories and subcategories, instead of the nouns used in the original taxonomy[1]. This is the brief history of Bloom's taxonomy, now we can move on to each component of this method.

1. Remember: This is the basic level where learners recall and retrieve information from memory. Activities include memorizing, listing facts, or repeating information. Key actions: define, list, memorize, repeat, state.

2. Understand: Learners comprehend and interpret information, making sense of it in their own words. Activities include summarizing, explaining, and classifying information. Key actions: classify, discuss, explain, identify, select.

3. Apply: Learners use the knowledge in real-life scenarios to solve problems and complete tasks. Activities include executing, implementing, and demonstrating understanding. Key actions: execute, implement, solve, use, demonstrate.

4. Analyze: Learners break down information into parts to understand relationships and patterns. Activities include differentiating, organizing, and comparing components. Key actions: differentiate, organize, analyze, compare.

5. Evaluate: Learners make judgments about information and ideas, assessing their value and defending their opinions. Activities include critiquing and making decisions. Key actions: argue, defend, judge, select, critique.

6. Create: Learners use existing knowledge to create new concepts and ideas. Activities are creative and involve designing, constructing, and developing plans. Key actions: design, assemble, construct, develop, formulate[2].

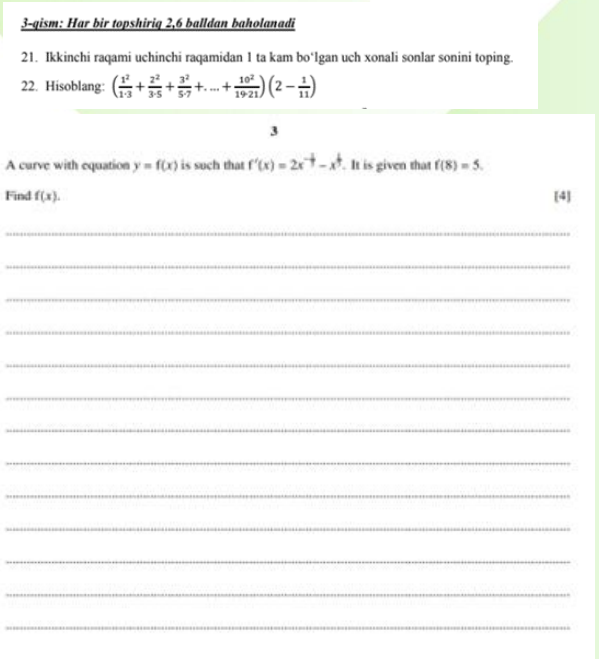
The original 4 C's - communication, collaboration, critical thinking, and creativity.These create a solid base for interaction and mental exploration that can foster a positive learning environment for any age group. The final two C's add perspective to this process: Care and Choice. With the addition of these two, the 6 C's create a mix of holistic educational values that can be applied to the classroom to help students learn through many different touchpoints[3].

1. **Communication** - Sharing your ideas.
2. **Collaboration** - Being able to work with others
3. **Critical Thinking** - Thinking carefully about information to make good decisions.
4. **Creativity** - Coming up with new and different ideas.
5. **Care** - Looking out for others and being kind.
6. **Choice** - Making good decisions and taking responsibility for them.

Why is the marking system of Uzbekistan not enough to test the real level of knowledge of students?

Comparison of marking system in the education of Uzbekistan with others

Marking system - one of the main parts of the school system, and this component has been a problem in our country. The reason is simple: teachers do not have enough experience to evaluate their students by giving proper marks to test the real knowledge of a student. I saw the difference when I moved from the local to the Presidential School in Navoi. At my previous school, school number 12 in Zarafshan, there were some questions which used Pythagoras theory to get the answer. I solved all of them correctly, and I got "5", because my answers were right. But my friend who knew the formula of this theory and put all the numbers in the right order got "2" or even "0" as he miscalculated the answer. This is the incorrect way of evaluating the student. When I moved to my new school, my marks were getting worse. The knowledge of a student was not marked according to the answer he/she wrote, also the way the student got the answer should have been correct. Let's see this comparison with the help of examples:



3-qism: Har bir topshiriq 2,6 balldan baholanadi

21. Ikkinchi raqami uchinchi raqamidan 1 ta kam bo'lgan uch xonali sonlar sonini toping.
22. Hisoblang: $\left(\frac{1^2}{1\cdot3}+\frac{2^2}{3\cdot5}+\frac{3^2}{5\cdot7}+\ldots+\frac{10^2}{19\cdot21}\right)\left(2-\frac{1}{11}\right)$

3

1 A curve with equation $y = f(x)$ is such that $f'(x) = 2x^{-\frac{1}{2}} - x^{\frac{1}{2}}$. It is given that $f(8) = 5$.

Find $f(x)$. [4]

Here are the examples of testing systems; the first one is what local teachers use in Olympiads to mark the knowledge of the student; the second one is what Cambridge University uses to mark the student. To make it clearer, Cambridge University's marking system gives students marks according to their steps. If a student wants to get full 4 marks in this case, he or she needs to complete each step as written in the marking scheme. As the participants of many

math Olympiads, in the first picture, students must write the correct answer in the answer sheet. Judges don't pay attention to the way this student got the answer. The problem here is that when a student knows everything about the problem and solves everything correctly, but writes the answer incorrectly on the answer sheet, will get 0 marks out of 2.6. The second one is more complex and the advantage here is that only knowing the answer will not provide students with a full mark. The student has to write all the steps and calculations correctly to get a full mark. And even if the student miscalculates the answer at the end, he or she gets 3 marks out of 4, which is of course more fair than getting 0 out of 2.6. In the Cambridge University system of marking, a student cannot get a full mark if he/she copies it from another student, but in our country's system, some students are getting high marks by just copying which absolutely lowers the level of knowledge of students in Uzbekistan. Additionally, in the second marking system, every step of the student is appreciated and marked, meaning to say, if one puts effort on solving this question which results in getting good marks even by not getting the answer right, one will be motivated and happy with his mark. All in all, I want to say that we have to implement the marking system that Cambridge University uses in our education system if we want to evaluate students correctly.

Let's look at the positive sides also, as there was a significant improvement in the tests made by the National Test Centre. When we put them into the Bloom's taxonomy, a couple of years ago, tests were in the "remember" step, where students only needed to memorize things to get questions answered correctly. Nowadays, we reached "analyze", meaning to say, students need to memorize things, and then understand the question, followed by applying their knowledge into the test. At the end, they analyze questions to answer. But still, we are lacking some development, because some other nations in the world are already at the level of "create". They ask students to write essays by using their previous knowledge, create their own projects to boost their extracurricular activities.

The principle of "first a test, then a choice" represents another significant improvement. Under the new procedure, applicants participate in the competition for admission to various programs, including for bachelors or masters, based on their test scores[4]. This approach has the advantage of allowing students the opportunity to secure a full-ride scholarship from universities even if their scores are lower.

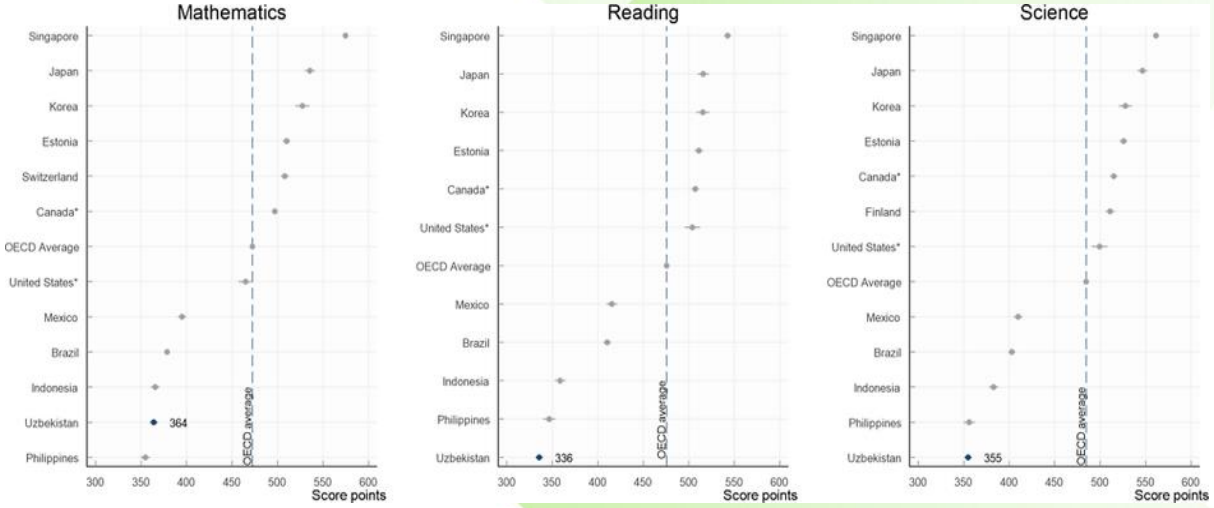
Comparing our country's university application process to that of developed countries reveals some similarities. For instance, in the past, high school graduates would first choose the university they wanted to apply to and then take a test. Now, students can select their universities after knowing their test results. This is somewhat similar to applying to foreign universities, where students need to complete their application process, including extracurricular activities, personal statements, and supplemental essays, before choosing their university.

The primary difference lies in the selection criteria. Uzbekistan's state universities admit undergraduates based on their test scores, reflecting their knowledge of chosen subjects. In contrast, universities in the USA, for example, consider not only students' academic knowledge but also their other skills, such as writing, and their experiences, including internships in their fields.

Ways to improve the education system of Uzbekistan

A) Redesigning the curriculum to ensure a structured progression through Bloom's taxonomy is crucial. Each stage (remember, understand, apply, analyze, evaluate, create) should be fully addressed before moving to the next. This approach guarantees that students have a solid foundation in basic skills before advancing to more complex cognitive tasks. By mastering each level sequentially, students will develop higher-order skills gradually and effectively. Integrating tasks that require analysis, evaluation, and creation across all subjects is essential for developing higher cognitive skills. In the history curriculum, traditional assessments such as multiple-choice quizzes on memorized dates and events should be replaced with project-based assignments. For instance, instead of a quiz asking students to list the dates of major World War II battles, it is plausible to implement a project where students must analyze the causes and consequences of a specific battle, evaluate the strategies used by both sides, and create a presentation or report that discusses how the outcomes of the battle influenced the course of the war. This approach encourages students to apply their knowledge, think critically, and present their findings creatively and comprehensively.

B) Additionally, one of the most important reasons to redesign the curriculum, the process that has already started taking place, is to score higher on international tests, like PISA – Program for International Student Assessment. PISA provides vital data on 15-year-olds' abilities in reading, mathematics, and science globally, allowing countries to benchmark their educational systems and identify areas for improvement. It informs policymakers and educators on effective practices and socio-economic disparities, fostering strategies to enhance educational equity and quality. As of the latest results, Uzbekistan shows that 15-year-old students scored below the OECD average in mathematics, reading, and science. Only 19% achieved a minimum proficiency in math, 14% in reading, and 19% in science[5]. Socio-economic status influenced performance, but the impact was smaller than the OECD average. Gender differences were noted, with boys performing better in math and girls in reading. The report highlights the need for improvement in educational outcomes and socio-economic equality.



C) Apart from curriculum redesign, there are several effective strategies that have worked in countries scoring high on PISA and could potentially prove useful in Uzbekistan, if implemented efficiently:

i) Singapore's "Teach Less, Learn More" Initiative: Focuses on quality over quantity in education, encouraging deeper understanding and critical thinking rather than rote memorization. This initiative led to significant improvements in student engagement and performance[6].
ii) Japan's Lesson Study: A professional development practice where teachers collaboratively plan, observe, and analyze learning and teaching in 'research lessons.' This approach has enhanced teaching quality and student understanding in mathematics and science[7].
iii) Finland's Comprehensive School Reform: Focused on equal opportunities for all students, minimized standardized testing, and emphasized teacher autonomy. This reform resulted in high student performance and low disparity in student achievement[8].
iv) South Korea's After-School Programs: Provides additional support and learning opportunities for students outside regular school hours. This strategy helped improve student performance, particularly for those from disadvantaged backgrounds[9].
v) Shanghai's Master Teacher Program: Pairs less experienced teachers with master teachers for mentoring and professional development. This has led to improved teaching practices and student outcomes[10].
D) In 50 years, adoption of well-regarded education policy features from high-performing education systems such as Japan, Singapore, and Shanghai could bring about dramatic transformations in the educational landscape of Uzbekistan. Here is one hypothetical scenario:

Higher Student Achievement: If Japan's rigorous curriculum standards and Singapore's approach to mastery learning are emulated, student achievement levels will significantly increase. Students in Uzbekistan, now with a deeper view toward understanding and problem-solving, may start outperforming in PISA assessments and slowly close the gap with OECD averages.

Quality of teachers: The way to professional development could be emulated through Shanghai's Master Teacher Program. At the individual level, one could have a more skilled and motivated teaching force through continuous professional development, mentoring, and collaborative planning. Over time, this creates the possibility of a self-sustaining culture of excellence in teaching, leading to better student outcomes.

Educational Equity: Since Finland has demonstrated itself as a worthy model concerning equity, inclusive education policy, and support for the disadvantaged in education, such policies would reduce educational disparities in Uzbekistan. In this way, each student, irrespective of origin, shall be exposed to high-quality education and support.

Cultural Change in Education: Respect for the teaching profession as practiced in Singapore and attitude of lifelong learning as in Finland may induce the needed cultural change for valuing education and self-improvement. Cultural shift can lead to increased societal support for education reforms and higher expectations for student performance.

Integrating technology: Making use of digital tools in enhancing learning, just like Japan and Singapore, will be helpful in Uzbekistan to create students that could respond well to the modern workforce.

Long-term economic growth: A very well-educated population in Uzbekistan could pave the way to long-term economic growth. As was aptly put, a robust system of education is combined with a workforce that is exceptionally well prepared, which can attract foreign investment and hence spur innovativeness. All this can ensure a more prosperous and more competitive economy on a global scale within 50 years.

A better international standing: this would give Uzbekistan a leading position in the world's arena, confirming its attitude concerning educational quality. The better standing could attract further opportunities for cooperation, regions, and exchange programs of professionals and students, therefore enriching the educational process.

Conclusions

It is necessary to increase the capacity of teachers and for it, it is necessary to develop the correct teaching methods, which should be adaptive to the present time and the requirements of the students.

It is necessary to provide students with modern methods of checking that they can be marked correctly (for example: PISA, with Cambridge Assessment) and competitive tests that measure the goals needed for learning modern professions.

It is necessary to increase proper communication, collaboration and balanced life skills in children.

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