

THE CURRENT CORE OF EDUCATION REFORMS IN UZBEKISTAN: ONE STEP FORWARD TWO STEPS BACK?

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ABSTRACT

Uzbekistan is undergoing tremendous changes in all spheres of life including the education system starting from 2017, when the president Shavkat Mirziyoyev came to power. This epoch is widely called the “epoch of modernizing Uzbekistan”. Indeed, serious reforms are taking place, number of programs are being implemented and even more are in the pipeline. However, along with some success stories, the education sphere has abundant malpractices and backlashes. A closer look into the field reveal that a large part of the currently promoted reform practices are mainly rather superficial and is therefore not tackling actually the core of the challenges in education. Situation is exaggerated by the fact that there has not been any international education project operated under the auspices of international financial institutions such as World Bank, Asian Development Bank or alike. Number of these problems could have been sorted through applying the international best-practices. Some of these problems are elaborated in this article. Those include lack of continuity and transitivity across the levels, low quality of school education, inappropriate university exam system, inconsistent student performance marking systems, unsustainable financing mechanisms and lack of links between the academia and research, inappropriate allocation and research funds. This study reviews the underlying problems of these challenges in education system in the country to reveal concurrently their causes of the volatile higher education system.

Keywords: Education, reform, shortcomings, continuity, systems approach, ISCED, Uzbekistan.

INTRODUCTION

Contrasting Issues such as generational change versus inheritance and maintenance of former paths of doing things always have played an important role in the development of human society¹. Given that each time period brings about new challenges and opportunities to a society and a nation as a whole. For instance, nowadays the world is better connected than ever before. Hence, Qarshiboev and Berdiyrov² convincingly argued for Uzbekistan that obstacles to mobility are disappearing in our modern world, which impacts especially severe on students, trainees, graduates and employees and all others wishing to work elsewhere than in their native country, and e.g. for international and multinational companies, But as this improved mobility indicates concurrently that qualifications and experience acquired elsewhere, such as e.g. in Uzbekistan must be properly recognized in a new workplace or when starting or re-studying in another education system outside Uzbekistan for instance. To this end, on the one hand transparency and recognition of acquired competences or qualifications are to be promoted, but on the other hand, it demands a growing need for improved scientific thinking and education

¹ Knowles, M.S., 1980. *The modern practice of education – From Pedagogy to Andragogy* (Revised and Updated). Cambridge. Princeton Hall Regents, Englewood

² Qarshiboev, S. and Berdiyrov, T., 2020. Shifting to a European Credit module system in Uzbekistan, impact and perspectives to vocational education. *Journal of Critical reviews*, vol. 7(12), pp.553-559

to prepare people for the international competitive, labor market, and thus necessitating inherently the development of science and technology, but as well as of the socio-political activity of citizens to further increase the urgency of these tasks. It will thus be necessary for Uzbekistan in order to stay ahead of the challenges, to implement necessary reforms, which increase on the one hand the quality of education and on the other hand enable transparent quality assurance in a timely manner and at the required levels, to find effective solutions to the current challenges³, even if this means a complete change of thinking and doing things or implementing.

The main features, goals and objectives of the latest stage of national development policy, pursued by the Republic of Uzbekistan, are clearly defined in the Strategy of Action⁴ from the state program, and evidenced in important socio-economic and political reforms to be implemented under the leadership of the new President Shavkat Mirziyoyev. On the basis of these documents, currently in-depth, great changes are implemented in recent years, also in the fields of science and higher education, with the aim to render Uzbek higher education compatible to international standards. During the last three years, 157 new secondary schools with new and modern buildings were established or existing old buildings were reconstructed from scratch throughout the country. The establishment of such new and modern educational institutions, such as schools, obviously opens up new opportunities for the education of children in the country, in case staffed with skilled teachers and equipped with adequate teaching facilities, which is not the case yet (Eshchanov, et al, 2019)³ and desires have not yet been matched by reality.

For instance, Uzbekistan used to operate a 10- year compulsory secondary education system during the Soviet Union. This has turned into an 11-year compulsory public education system between 1992-1999. Starting from 2000 on it was replaced by a nine-year compulsory secondary education followed by two pathways: (i) three years long compulsory professional vocational education in vocational colleges or (ii) three-years of compulsory schooling in academic lyceums. This necessitated construction of 2500 new vocational colleges and hundreds of academic lyceums from scratch between 2000-2015. In 2017, most of the vocational colleges were terminated and 11 years school education system was revived⁵ by the requests of parents and the broader public.

But, despite the rapid reforms in the field of public education, In the same time, a number of shortcomings in the process of establishing a system of continuous education as was the case before independence, submerged indicating among others a lack of a systematic approach to the anticipated reforms. In this regard, the most important challenge still is the lack of an effective coordination of reform activities of the various ministries responsible for the different stages of education in the country. For instance, newly developed or revised programs and projects do not serve yet to effectively organize the system of an envisaged continuing education. In some cases, reforms implemented appeared not being able to offer a

³ Eshchanov, R., Lamers J., Bobojonova, G., and Bekchanov D., 2019. Priority challenges of education sector reforms in modernizing Uzbekistan. *European Journal of Research and Reflections in Education Sciences*, vol. 7(12), pp. 92-97.

⁴ The state program for implementation of the national action strategy on five priority development areas 2017-2021 in the year of active investments and social development, full-text available here: <https://strategy.uz/files/static/77041/stateprogram.pdf>

⁵ World Bank. 2018. Uzbekistan Education Sector Analysis, final report. December 27, 2018. Report no. AUS0000586

comprehensive solution to the challenges⁶ whilst furthermore the reforms are so volatile that they are easily and recurrently circumvented.

Yet, under the supreme leadership of the new President of the Republic of Uzbekistan Shavkat Mirziyoyev opportunities were offered to re-organize the continuous system of harmonized education where e.g. a certain sequence in education is desired and offered e.g. in the order of *primary education*→*secondary education*→*secondary special vocational education*→*higher education* and this on the basis of clearly differentiated educational programs in the future⁷. Therefore, as this aim was not attained, as a reaction numerous private schools were opened in modern Uzbekistan initially to support the reforms and changes in education. Yet, the experience of a number of countries demonstrates that the implementation of a parallel system, irrespective of the intention to correct existing flaws, encompasses concurrently the danger that such separate schools and schooling system may lead to an ill-stratification of the population unless private like public schools operate with a transparent entrance examination system and perhaps offer tuition discounts to students with higher abilities and achievements⁸. Currently, tuition fees in a number of private schools are 2-6 times higher than the average annual tuition fee of state universities and is not affordable for families with average income. There is a demand for such an expensive service due to the fact that quality of public education is low and ever deteriorating.

Continuity inconsistency

Currently, the anticipated continuity of education practices implemented recently as reforms in the country do not comply yet with the system suggested by the International Standard Classification of Education (ISCED)⁹. For instance, appropriate links have not been established yet between pre-school, primary and general secondary education institutions, which could create a continuous education system in which graduate of the one level could always have a chance to continue education in the appropriate stage of the next level, not wasting time because of the inconsistent structure of the curriculum. To this end, a full implementation of curricula and subject programs of countries with advanced economies at corresponding stages of the educational system allows training highly qualified, flexible, creative and problem-solving personnel in a relatively short time and at low cost. To implement fully in its turn, require consistence of levels. Only as such, one can successfully implement a modern curricula and programs.

According to the ISCED, the pupils will have the opportunity to receive education at different stages on the basis of several alternatives, but coherent curricula and programs. At level-0 of the ISCED, at present the pre-school facility with 2-4 years program largely covers the 1st year program of primary school, which corresponds to 1 year of a 4 year-long ISCED level 1 so far away from the anticipated objective.

During pre-school education, pupils acquire knowledge and skills in two years at the level of primary school's 1st year graduates, but due to the lack of systematic approaches in the overall education sector to view the so called "bigger picture" pre-school facilities and the primary

⁶ Borgen Project, Top 8 facts about education in Uzbekistan. Web-site material, available [here](#).

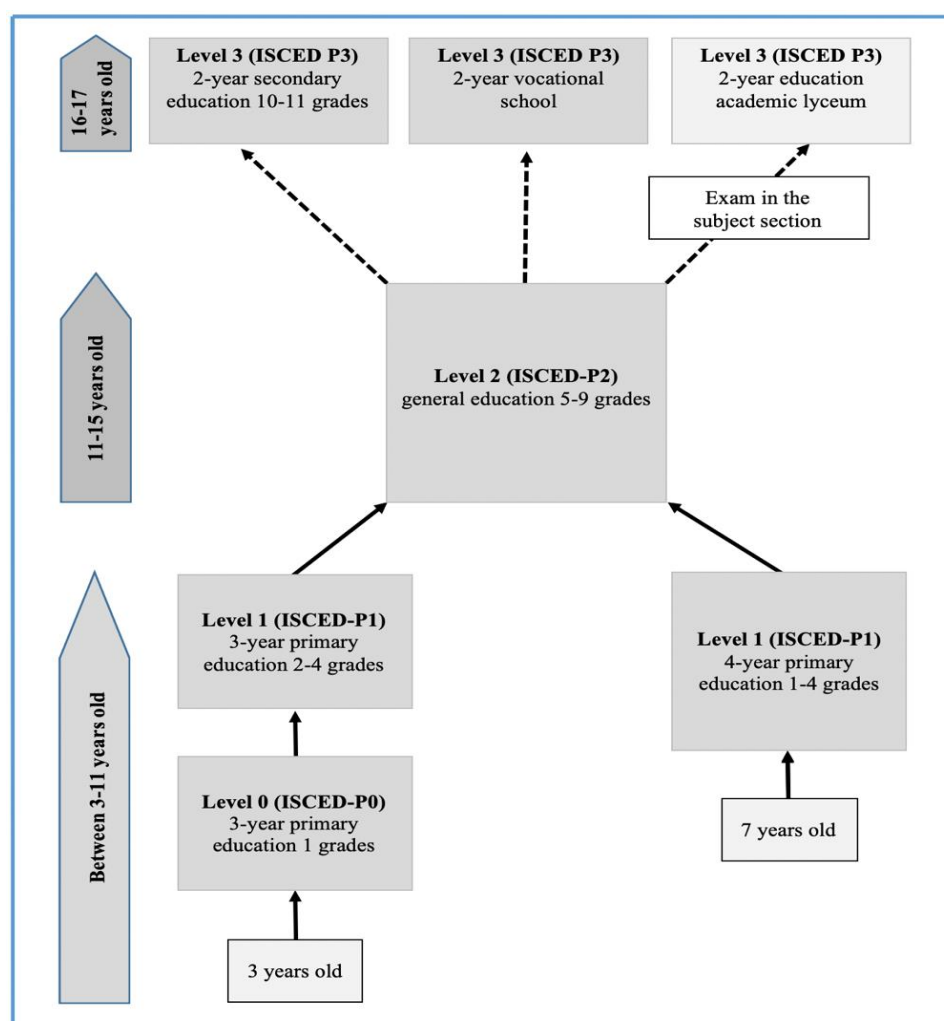
⁷ For instance see the Global Partnership for Education. 2019. Endorsement of Uzbekistan's education plan 2019-2023. A Full-text is available at: <https://www.globalpartnership.org/sites/default/files/2019-04-gpe-esp-uzbekistan.pdf>

⁸ Epple, D., Figlio, D., Romano, R., 2000. Competition between private and public schools: Testing stratification and pricing predictions. The National Bureau of Economics Research. Working paper 7956.

⁹ This article refers to UNESCO International Standard Classification of Education, ISCED 2011.

<http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf>

school, also a lack of coordination between preschool facilities and primary school, there are quite some differences in knowledge and skills between the pupils of different pre-school facilities. It would thus be expedient to plan and standardize for instance the class loads of the final two years of preschool education facilities and organize the admission of 7-year-old graduates of pre-school to the 2nd year of primary school. To facilitate this, a pupil who has graduated from a pre-school could for instance be granted a recognized and acknowledged certificate of completion of the 1st grade, which is not the case in the moment. Then these pupils could either enter the labor market or as an alternative could be admitted directly to the 2nd grade of a primary school. Consequently, only pupils who did not attend pre-school institutions should start the primary school from year 1. In this alternative approach, the direct admission of a pupil occurs from ISCED level 0 to the year 2 of ISCED level 1 (see Figure 1).



Source: Authors' own depiction

Figure 1. Current educational continuity between preschool and secondary education institutions in Uzbekistan¹⁰

Whereas at present there are pupils who receive up to four year of pre-school education end-up in the same class with kids who did not attended even kindergarten. This impairs education

¹⁰ Mukhamedov Gafurjan Israilovich, Eshchanov Ruzumboy Abdullaevich, Eshchanov Bahodir Khudaiberganovich, Bekchanov Davronbek Jumanazarovich. Authors' copyright. The project "Using the cluster method to improve the continuity and identity of education in Uzbekistan" // State Unitary Enterprise "Intellectual Property Advisory Center" on depositing copyright objects January 24 of the year.

opportunities for both groups of pupils and renders education unequally challenging for teachers due to the different starting points of pupils

Proposed change serves concurrently to increasing pupils' interest and abilities through the new knowledge and skills imparted, as well as to spend the pupil's time productively. The proposed alternative is practiced by various OECD countries, where primary schools start at the pupils age of five. The continuing pathways are demonstrated in the table below (*see* Table 1).

Table 1. Typical ISCED 2011 levels – Typical duration [most common duration]¹¹

01	No duration criteria. However, a program should account for at least the equivalent of 2 hours per day and 100 days a year
02	
1	4-8 years [most common: 6 years]
2	2-6 years [most common: 3 years]
3	2-5 years [most common: 3 years]
4	6 months to 2 or 3 years
5	2-3 years
6	3-4 years when directly following ISCED level 3 1-2 years when following another ISCED level 6 program
7	1-4 years when following ISCED level 6 5-7 years when directly following ISCED level 3
8	Minimum 3 years

Source: OECD, 2017

It should be noted thus that the national public education system consists of one academic year - a 9-month educational process lasting from September to May and 3 months of summer vacation. There is a short-term fall (1 week), winter (2 weeks) and spring (1 week) holidays also during the study period, but the total duration of these holidays is one month during the entire school year. This means that actually 8 months of schooling are offered during one school year.

University entrance exams – quality of school education nexus

In most cases, when completing elementary school, pupils know to read, write, and express independently, as well as basic math such to add and subtract numbers by the end of the 4th grade. However, some pupils at this level currently are often unable to read, write, express ideas and perform operations on numbers independently even after 9 years of education in secondary schools. Therefore, the overall score of the certificate and the level of mastery in any subject area will be important in deciding to continuing studies at 2nd and 3rd levels of ISCED (ISCED 2-3). It must be emphasized though that secondary school curricula require regular scrutinized assessments to improvement quality also, but this does not really happen systematically on the ground yet. Cumulative teaching hours in secondary schools dedicated for science related subjects e.g. mathematics, physics, chemistry and biology nowadays is twice less than the cumulative number of hours allocated to non-science subjects e.g. history, law, native and foreign languages, sociology, political economy etc.

¹¹ OECD. 2017 OECD Handbook for International Comparative Education Statistics, p.71. Full-text available online: <https://www.oecd-ilibrary.org/docserver/9789264279889-en.pdf?expires=1595838082&id=id&accname=guest&checksum=9963500424F6304BCF0C6C3E325E5982>

Education reforms after the collapse of the Soviet Union has converted the principal function of the secondary school to memorizing the correct answers of the university entrance exam questions. Its function of teaching pupils and helping them to acquire knowledge and cognitive skills has become negligent during these years. Students do not need to learn the school program and graduate if s/he wants to continue education at university level. If thinking about continuing education in the higher education, main objective of a high school student in Uzbekistan is memorizing the answers to entrance exams questions from the question-base*. In particular because there are alternative methods of obtaining a rare place at the university and students may be exploring the opportunities of working-around university entrance exams as well (see Box 1.1 for details). Currently, the university entrance exam consists of three sections with 36 multiple-choice questions each, where the applicant's knowledge is assessed based on two subjects (in 1st and 2nd sections respectively) related to the discipline and native language knowledge (3rd section). It is common knowledge that students who mainly memorize the test-base perform better than the students who actually possess knowledge. Hence, candidates become university students based on the memorized answers of multiple-choice questions from two subjects.

This eventually led to a decrease in the creativity and spirit of students. Graduates of secondary schools were previously admitted mainly to university with 65-90 points out of maximum of 227 points. Literally this means that an applicant is accepted to a higher education with a knowledge level of a 3rd or 4th year graduate of a primary school. Moreover, male graduates and applicants elder than 18 years can earn additional 60 points due to a merit certificate obtained during their service in the army. This certificate guarantees a university placement to a male student, in most cases guarantees even placement under a state grant. Army service is not envisaged for female graduates, hence current policy infringes their constitutional right of getting education under equal opportunities.

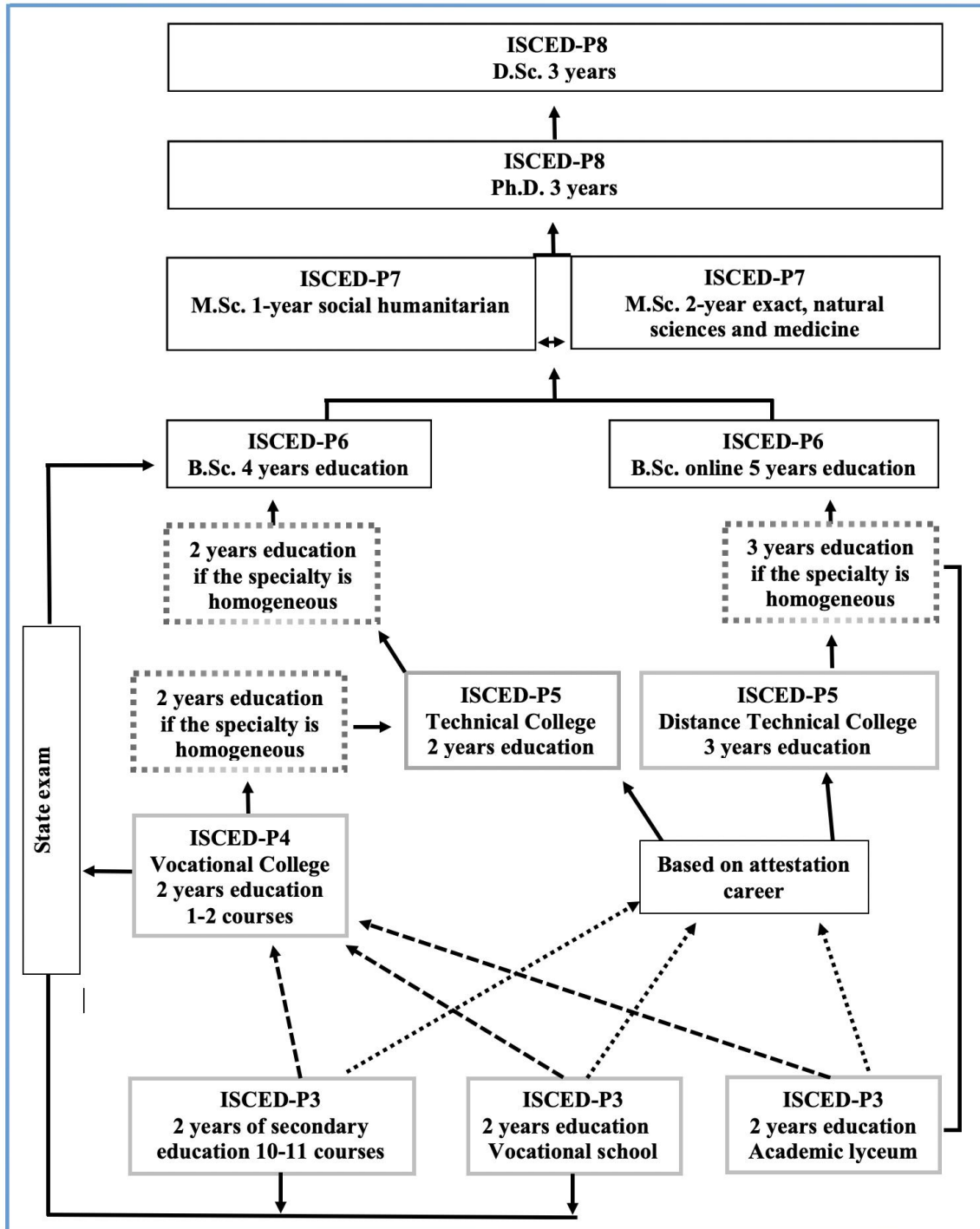
Essential changes necessary in university entrance exams

Successful studying in higher education and obtaining a degree diploma is primarily defined by the university entrance exam in Uzbekistan. In other words, becoming a student 99.9% guarantees the successful graduation¹². The drop-off rate in higher education is nearly zero, which is seen in almost identical number of intakes to higher education and number of graduates for four years later period. Almost 100% successful student performance also hints about the presence of inappropriate practices during progression.

As discussed in the earlier section, currently operated university entrance exam system is extinguishing the creativity of the people. The level of complexity of the test questions encourages applicants to memorize the answers. As mentioned above, candidates memorizing the answers perform better than candidates who actually possess knowledge. Which indicate that questions are rather complex and does really assess the knowledge and skills of the candidates, but their memorization ability. Elimination of consequences of this system can only be achieved through the full alignment of the state university exams with school programs, while replacing the multiple-choice testing with alternative examinations with emphasis on candidates' problem solving and creativity skills. Furthermore, it is crucial to introduce an examination system that takes into account the total score of the certificate of secondary education. Only then pupil start valuing the education s/he obtains at school. It is also necessary to assess of the subject specific knowledge of the student. This, in turn, also serves to enhance the status of teachers and educational institutions at levels 1-3 of ISCED (primary, general

¹² Eshchanov, R.A., Lamers, J.P.A, Bobojonova, G., Bekchanov, D. 2019. Priority challenges of education sector reforms in modernizing Uzbekistan. *European Journal of Research and Reflections in Educational Sciences*, vol. 7(12) pp.92-97.

secondary and secondary education). Pupils of academic lyceums operating at higher education institutions at the 3rd level of ISCED will have the opportunity to continue education from the 2nd year of ISCED level 6 if the curricula are differentiated and cover the first-year science programs of ISCED level 6. Given the present flaws in the education of professions, we are convinced that combatting these flaws with reference to vocational education, the level 4 of ISCED should be organized in the form of short-term large-scale enterprises for 3-6 months, as to increase opportunities of alumni to gain employment and income.



Source: Authors' own depiction

Figure 3. Schematic depiction of a cluster method of continuous education system in the field of higher education

(Based on International Education Classification Standards)

Nowadays, setting up a 2-year vocational college for the 4th level of ISCED takes up valuable time of the students while. In addition, vocational schools are being set to provide ISCED 4 levels. In case the objective is that the vocational orientations of the graduates of vocational schools correspond to the ISCED-5 vocational orientations of technical colleges, it is necessary to admit them to the 2nd year of the technical colleges. To this end, ensuring the compatibility of the annual training loads of vocational schools (ISCED-3) and the 1st year training loads of technical colleges, pupils will have the opportunity to choose their relevant directions and continue education and increase their knowledge in the future.

A graduate who has currently completed 2 years of ISCED at Level 5 is considered to have completed two years of ISCED Level 6 (undergraduate program) and will have the opportunity to continue their education from the 3rd year of undergraduate study, but in addition will be able to receive a privilege in the possession of the 6-level of the ISCED, which will increase the willingness to study.

The current admission to higher education institutions in Uzbekistan is organized mainly through tests, and in few cases talent examination, which was flawed and prone to falsification at all levels. In short university exam system has been turned into a system which fails the clever and talented candidates and paves way for working around the system. In general, it is seen as illegal or at least questionable methods of getting high marks during examination (Please refer to the box 1.1 for details).

Box 1.1 Classification of Illegal methods applied during the higher education entrance exams before 2017

Train-wagons method – when qualified tutors are brought to the exam rooms masked as a candidate and help the real candidates with answering,

“X-variant” method - when question base is leaked in advance by the overlooking authorities and candidates bring in indicative answer to the exam

Bunker method – when tutors are located in the basement floor of the examination building and exam books and answer-sheets are collected and brought to those tutors in the basement floors for solving during the examination

Twins method – when qualified tutors are masked as a candidate and sit the exam instead of the candidate,

Moreover, ***cheating notes*** were massively used during the university entrance exams before 2017.

Source: Authors' own compilation

The new rules imposed are aimed to arrest these practices without much effect on the ground yet. There have been numerous measures introduced to eliminate such debatable methods currently applied in entrance exams, which have indeed minimized the room for maneuvering and questionable activities during higher education exams. But low higher education enrollment rate and growing number of candidates retain the acute demand for such activities.

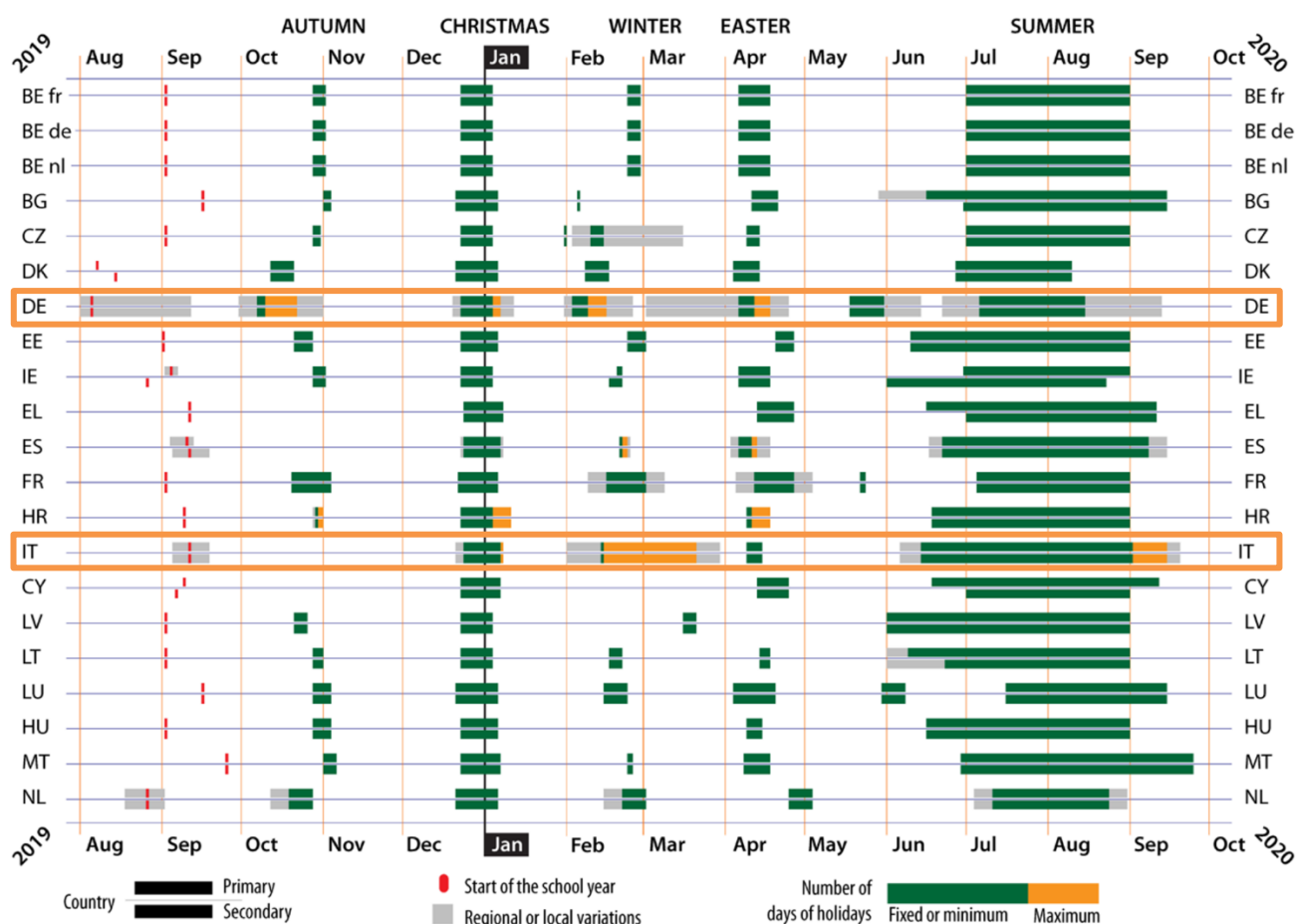
Duration of the school years in secondary education (ISCED 1-3)

In line with the above progress in reforms and flaws described, it is important now to organize the educational process further most likely in primary, general secondary and secondary schools of Uzbekistan but in accordance with modern and international standards and requirements so that Uzbek graduates in the end are competitive in the national and international labor market as previously underlined. (e.g. Qarshiboev and Berdiyrov 2020).

An analysis of key organizational issues in the educational process in secondary schools reveal that there are many opportunities for further improvement in organizing public education. In particular, it, would be expedient to make a partial change in the periodicity of the educational process in the academic year, while maintaining the current amount of school and vacation periods. That is in practice, for instance by reducing the summer vacation periods from 3 to 2 months during the school year and schedule it in different seasons, it could for example be set to July-August, and by summing up all the remaining holidays, the 2-month winter vacation period can be set for the period of December-January. In this case, a number of conveniences will be created, while the 8-month pure learning process remains unchanged. Summer camps may also be arranged during the winter as a winter-camps to create additional advantage for the working parent and to entertain the kids. In fact, some regions of Germany and Italy schools operate as such regime, while Denmark and the Netherlands offer under two-month summer holiday to pupils (see Figure 2).

Introducing for instance a two-months winter and two-month summer holidays for pupils is essential also from a socio-economic point of view. This can be justified for instance as follows:

- First, students will be able to fully enjoy their cultural recreation twice a year (two times 2-month vacations) during the hottest summer and coldest winter days, which increase their productivity during the school period;
- Second, thousands of students would be safeguarded from contracting various diseases caused by cold weather and to prevent the possible negative consequences on the road for large number of students while attending classes on frosty winter days;
- Third, thousands of secondary schools in the country will be able to save a large amount (2 months) of fuel and energy resources used for heating and lighting of educational and other ancillary buildings during the winter season. This, in a sense, facilitates the operation of the fuel and energy supply system, reducing the number of social facilities that require large amounts of energy for heating in the winter.



Source: European Commission/EACEA/Eurydice, 2019. The Organisation of School Time in Europe. Primary and General Secondary Education – 2019/20.

Figure 2. Length of the school year and distribution of holidays, general education, ISCED 1-3

Quality of higher education

The introduction of digital technologies in the educational process is a loudly spoken phrase. In fact, it is limited with preparation of PowerPoint presentation slides by lecturers for the class. In most cases content of the slides consists of massive textbook excerpts and lecturers do not understand the content of science, have poor background knowledge and consequently, there is insufficient explanation of the topic and knowledge being presented. Moreover, higher education institutes do not have interactive and student-centered learning practices in place. This requires deep knowledge of the field, practical skills and understanding of the teaching process. PowerPoint slides remain like cartoons, although the use of this method is essential for the modular system, the hours devoted to science in the modular system are reduced, large blocks of several topics can be formed, whereas the use of digital technologies increases learning efficiency.

Students' knowledge assessment systems are not adapted to international standards, i.e. currently academic performance of the first- and second-year student are evaluated using a 5-mark grade system, where 3, 4 and 5 are positive and 2 is considered as a fail in the exam. For third year students the evaluation of the knowledge was involved, where teacher solves the inverse problem in the assessment and finds the student's score, as a result system with clear logic was formed.

A full transition to credit-module system does not only envisage translation of the hours accordingly, but it is necessary to understand that dividing the subjects into several parts reduces the contact hours by 2-3 times, explains the importance of creating conditions for independent studying of the students, which increases teachers' work efficiency and quality of education. Moreover, academic performance evaluation method of the credit-module system should also be adopted simultaneously.

Credit-module system is based on the student's consultative course in obtaining independent knowledge from the student based on the textbook crushed based on the thematic science program. In the world practice, the modular system is based on the teacher's consultative process in the acquisition of independent knowledge by the student, based on a textbook, which is rely on a specific subject program, from teaching on the consultative level.

In the view of transition to the credit-module system, there are some disadvantages of the reconstructed buildings according to the decree № 1533 of the President of the Republic of Uzbekistan. The document says that there is a very small number of large lecture halls for over 100 students, so it is necessary to quickly build lecture-halls with carrying-capacity of 200-300 students. In most cases, building facilities do not allow for the organization lecture halls for over 100 students. This, in turn, artificially increases the number of teachers, reduces the quality of teaching and increase of inefficient use of the budget.

State grants, scholarships and social justice

In our view, the issue of scholarships is a manifestation of social injustice in the existing form. Besides getting tuition waiver, they receive a scholarship (stipend). A student studying on a contract basis is deprived from two privileges. Although, the difference in their initial level of knowledge - that is their entrance exam points - do not exceed on average 15-20 points. it is advisable to conduct a survey among students and study according to results without a full scholarship. Therefore, for a student studying on scholarship basis will be enough to exempt from the contract fee, and the saved funds should be used to gradually strengthen the material and technical support of the university; the calculations by taking into the consideration the fact that the increasing number of scholarship places by two, constitutes the average of 35-40 billion Uzbek Soums per month, which in turn ensures fairness for all students in the use of the public budget. In other words, offering student a tuition waiver and concurrently paying a scholarship creates excessive burden for the state budget and lead to financial unsustainability of the universities. Current discrimination of the monthly scholarships based on the marks is also not sustainable and creates a situation in which student can take back the tuition fee in the form of a monthly scholarship if s/he studies for "excellent" marks and receives the highest monthly stipend.

One of the major reasons for being unable to transit to a sustainable financing schemes in higher education is negligent behavior of the international financial institutions. It has to be noted with a regret that none of the international financial institutions have supported the country in this endeavor. Education in its current form is the fundamental reason of the existing problems such as unemployment, migration and low-skilled labor. There is a tremendous demand for dissemination of the international best-practices in the sphere. And international financial institutions could play a quintessential role in overcoming these problems.

Material-technical basis of the universities and research facilitation

Universities do not have laboratories and equipment for scientific researches; they have repaired building. This limits the opportunities for conducting research and publishing articles

in prestigious journals, centers and specialized laboratories set up for scientific research also operate on a self-sustaining basis. Researchers make payments on their own expenses, mainly based on price lists developed by the center and laboratories, and measure, research and conclude in a very limited way. However, by applying the results of scientific research, rather than paid research, scientists should have been economically interested in their innovations. Today, the benefits provided by the government to universities' teachers encourage them to earn academic degrees and titles in any way and to be satisfied from their salaries.

The h-index for awarding academic degrees and academic titles to scientists is once again fair for both Uzbekistan and the scientist studying and obtaining their degrees around the world, although some articles by academics and professors habilitated in Uzbekistan are not cited and their researches are not internationally recognized.

Most of the researches in awarding academic degrees are carried out in conditions that do not have sufficient material-technical base and have shallow conclusions. In addition, efforts to make defense processes more transparent are only verbal, and there are no anonymous surveys or "opinion" centers for the diploma defense.

The experience of Uzbekistan in the post graduate education still has a two-stage system. If we compare these two stages with the Soviet Union system, the level of the current human capacity is much lower, because of the limited material and technical conditions for carrying-out full research. State funds allocated for facilitating research and development are mostly spent for refurbishment of the institute buildings while quality of scientific research heavily dependent on equipment, IT infrastructure, modern analytical software and access to the scientific publications. The main task is to conduct research, make appropriate conclusions, using them at the required level. We believe that writing articles based on high-level research and publishing them in prestigious journals, hence *h-index* of the scholars should become an essential KPI in evaluating their periodic progress, reviewing their grade and for their habilitation.

There is a lot of talks at higher levels using buzz words such as "innovation", "systems approach to problems", "emphasis on academic and scientific reforms", but very little progress has been achieved compared with what has been planned.

It is necessary to direct significant amount funds for the development of science and research. But there is an acute need for introducing cost-benefit mechanisms for appraising and evaluating such projects. Failing do to so keep the vicious cycle running: limited funds will be irresponsibly spent for irrelevant or ineffective projects, while projects that are of significant importance will be neglected. Today the Ministry of Innovation acts like a broker in the market, there are no transparent mechanisms for the evaluation of projects funded by the ministry. Most of the funds are allocated to scholars who are themselves members of the evaluation board. Most of those members do not maintain publicly traceable research record. Scholars who are not board members or know someone from the board in-person are unlikely to win a grant for their project, disregarding their own expertise and importance of their projects.

The emphasis on innovative activities in the universities is very low, socio-economic development is not sufficiently attracted by scientists in the determination of prospects, and the prospects for socio-economic development are determined by a decree, decisions do not work in full, if each development concept start to implement 2-3 small socio-economic development forecast projects as decrees and decisions, the most appropriate alternative method would be

selected, in which macroeconomic statistical analyzes would be performed, and finally development and efficiency indicators would be provided.

The main problem of the system of higher education is the corruption and prevention of corruption in the educational process and research is the main goal, but there is no written normative document. It is impossible to create a special anti-corruption agency and imprison teachers, to explain their activities based on anonymous surveys of students and to explain the abandonment of the "ostrich instinct". Another key factor is the issue of increasing the salaries of professors and teachers. It is necessary to organize remuneration rates also taking into account the *h-index*, which is depiction of the international recognition of one's brain-product. It will establish complete transparency for the scientific community, and various imaginary indicators will be abandoned.

But it is essential to examine the quality of the journal. "Publish or perish" policy operated in the country has also led to a situation, which require the lecturers to "publish" their works in so-called "open-source" pirate journals, such as this article by Rakhimov et al. 2020¹³.

All these activities can be a key factor in the conduct of educational, research and spiritual-educational work in higher education at the level of modern requirements.

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