

HARNESSING ICT TO ENHANCE PROVISION OF SCHOOL EDUCATION: THE POLICY RECOMMENDATIONS*

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Abstract

The decision on harnessing ICT in school education can pursue as a primary objective the acquaintance of students with ICT, the reduction of the costs of the education or the improvement of the educational results. Governments should consider ICT policies and programs on the Harnessing ICT in education as policies and programs for the school transformation. The focus areas include learning with ICT when suitable; teaching with ICT when suitable; developing a culture of ICT-promoted educational changes; building digital infrastructure to promote learning and teaching. The main issues and recommendations for each area are presented.

Keywords: ICT in general education, education policy, learning with ICT, teaching with ICT, school transformation.

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1. The essence of the harnessing ICT in education

1. The decision to Harnessing ICT in school education can pursue one of three main goals:

- Acquaint students with ICT (e.g. computer literacy training),
- Reduce costs of the education (e.g. replacement of paper books by electronic ones), or
- Improve the results of educational work (e.g. increase coverage and/or reduce student dropouts, improve old and/or get new educational results).

To achieve any of these goals, changes are required. The nature and extent of changes can range from the limited to complete transformation of educational process. There are three levels of such transformation: additive, assimilative and systemic changes.

Additive change results from the addition of new technology as well as new learning objectives and curriculum content (if it is required). Changes to existing curricula will be required to make room for additions.

Assimilative change results in existing curricula and teaching methods are modifying to place greater emphasis on new content. This approach is the widely used and reflects lessons learned from the disappointing results of the additive approach.

Systemic change results in the transformation school into 21st-century organizations instead of incorporating new elements into a system that retains 19th-century structure. Such schools operate as knowledge-creating organizations. Systemic educational transformation is not limited to schools and includes their surroundings.

The researchers [1] clearly recommend the systemic change but recognize that the reality of public education often mean that assimilative and additive changes are as far as a school system goes in adapting to 21st-century opportunities and needs. They warn that countries whose schools are transforming into knowledge-creating organizations may gain a tremendous advantage over countries that try to incorporate knowledge-age education into industrial-age curricula and school structures.

Additive changes can be sufficient to achieve the limited goals of the harnessing ICT in education (e.g. introduce the computer literacy training or replace paper textbooks with electronic ones). In this case, the development of technology infrastructure becomes the central (main) task and the educational tasks (the curriculum changes, the learning space, training teachers and so on) stay the serving one.

The systemic changes are appropriate when the harnessing ICT in education aimed to improve

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educational results. In this case, the educational tasks (the change of the school culture and the teacher/student relations, the change of curriculum and the learning space, teachers' professional development and so on) become the main one and the development of technology infrastructure becomes the serving one.

2. According to the UNESCO vision, ICT must be harnessed to strengthen education systems, knowledge dissemination, information access, quality and effective learning, and more efficient service provision [2]. During the last decades, the harnessing of ICT in education was seen as the intrusion of ICT (introduction a technology) in education. Policy makers who worked on harnessing ICT to enhance the provision of school education were struggling to create/provide eLearning environment to teachers and student by trying to figure out what kinds of ICT infrastructure and devices should supply to schools and in what quantity. They tried to solve the organizational and technological problems:

- What kinds of ICT infrastructure and devices has to provide to schools?
- Who should be responsible for such provision?
- Should it be centralized or decentralized?
- What are the roles of the government, private sector, schools in this initiatives etc.?
- How to source for funding for such provision?
- And so on.

"The automation applied to an efficient operation will magnify the efficiency.
The automation applied to an inefficient operation will magnify the inefficiency".

Bill Gates and all, 1995

"Technology can amplify great teaching, but great technology cannot replace poor teaching".

*Students, Computers and Learning.
OECD, 2015*

The understanding of the harnessing ICT in education that is limited by «introduction a technology» does not connect technology introduction directly to the transformation of the teaching/learning process and everyday educational practices the ICT has to improve (support, enrich and so on).

Schools of information age need digital education environment. However, the «introduction a technology» approach does not guaranty that investments in technology will improve the educational outcomes, reduce student dropouts, and so on. As a result, in many countries ICT have had a marginal impact on education, despite the significant investment that policy-makers have made in hardware, software, and networking.

The government should consider ICT policies and programs in education as policies and programs for the digital transformation of the school. The «introduction a technology» approach has been criticized for a long time [3, 4]. In many countries, incorporation of ICT in education has lost its status as a policy priority even though investments have not ceased [5, 6]. The PISA

results have finally confirmed — this approach does not increase the educational outcomes [7].

3. According to the SAMR [8] model digital technology can affect teaching and learning on four levels:

- 1) *Substitution*: ICT is used to perform the same task as was done before.
- 2) *Augmentation*: ICT offers an effective tool to perform common tasks.
- 3) *Modification*: This is the first step over the line between enhancing the traditional goings-on of the classroom and transforming the classroom.
- 4) *Redefinition*: ICT allows for new tasks that were previously inconceivable.

"The birds sat on the telephone wires before, now they sit on the antennas. A step in the mastering of IT made".

The observer

"Putting an Icon to a computer screen does not add to it holiness".

The Folk wisdom

"And no one puts new wine into old wineskins".

Matthew 9:17

The «introduction a technology» approach limits the ability of digital transformation of the educational process before the third level of SAMR. ICTs alone do not improve learning outcomes and the conclusions out of the PISA results are quite expected. The widely used the «introduction a technology» approach, which does not transform the educational process and limited to traditional pedagogical practices, can provide just the traditional learning outcomes.

To improve educational results, it is necessary to step to the next SARM levels and connect strongly introduction a technology with the transformation of educational process. A correct understanding of the harnessing ICT in education replaces the «introduction a technology» approach by the «digital transformation of education with technology» (or «digital transformation») approach.

In the last decade, many classrooms around the world have used ICT to support quality teaching and student engagement, through digital tools and environments that help connect learning to authentic, real-life challenges. Students in those classes have reached the 21-st century educational results. Teachers who use inquiry-based, project-based, problem-based educational practices consider digital technology as a critically important instrument [7, 9]. However, this usually happened contrary the policy that use «introduction a technology» approach and do not include the changes of teaching/learning process as a necessary component of the harnessing ICT in education.

Nowadays the digital technologies are the necessary instruments to transform personalize teaching/learning. They are ready to support the introduction of highly effective pedagogy that advances the high-

quality teaching and learning for each student. The implementation of the “digital transformation” approach is the necessary step to real equity in access to high-quality school education all. The solving of these eternal (traditional) pedagogical problems relies heavily on the intensive use of digital educational resources, solutions, and services and is the main part of the work on the harnessing of ICT in education. Therefore, the policy and programs on the harnessing of ICT in education should include all policies and programs related to the transformation or development of the educational system as their essential component (or opposite) [10].

Such approach gives to educators the freedom/permission to change traditional practices in a systemic way including [11]:

- Clarifying the learning goals, especially related to ‘deep’ ICT-supported learning.
- Choosing/developing the precise pedagogy that encroached with the ICT and will deepen learning in relation to these goals.
- Selecting/developing the technology to may facilitate/accelerate the learning.
- Assessing the learning process and results with ICT-supported instruments to provide the further improvements and to get evidence of efficacy.

The harnessing of ICT in education policy should include all other policies for educational change but not serve as a restriction, but support incentives as the possible driver of innovation. The digital transformation that integrates learning and technology has to occur systematically at the specific project in each of the regular schools.

Statement of issue: *Building the Vision of the Harnessing ICT as digital transformation of the school.*

The vision of the harnessing ICT in education is very often limited by “introduction a technology” and does not connect the harnessing ICT directly to the transformation of the teaching/learning process and everyday educational practices the ICT has to improve (support, enrich and so on). This is acceptable when the harnessing ICT in education has limited goals. If the harnessing ICT in education is aimed to improve educational results the educational tasks (the change of the school culture and the teacher/student relations, the change of curriculum and the learning space, teachers’ professional development and so on) become the main one and the technology decisions become the serving one.

Recommendation: *The government should consider ICT policies and programs on the Harnessing ICT in education as policies and programs for the digital transformation of the school.*

2. Sub-areas, issues and recommendations

ICT (digital technology) can be a powerful tool for transforming learning. It can help to reinvent approaches to learning and collaboration and adapt learning experiences to meet the needs of all learners. To realize the benefits of ICT students and teachers

need to use ICT effectively in their everyday practice. The focus areas for the harnessing ICT in education include:

- Learning with/through ICT When Suitable.
- Teaching with/through ICT When Suitable.
- Developing Culture for ICT-promote Educational Changes.
- Building Digital Infrastructure to Promote Learning and Teaching.

2.1. Learning with/through ICT when suitable

Learning with/through ICT when suitable, means that students turn to

- devices (computer, projector, printer, digital microscope, robot and so on);
- digital tools (word processor, graphics editor, browser, communication instruments and so on);
- passive and interactive information materials (texts, video and audio recordings, virtual objects, and so on);
- spatialized environments (games, simulators, teaching programs, and so on);
- services (search engines, social networks, distribution networks and so on),

and use them to achieve their goals every time it is necessary, or required by the curriculum (the lesson plan, the teacher’s task etc.) or for one’s own needs or interest.

Learning with/through ICT should never displace interaction between people, the role of unstructured, non-integrated, interactive and creative play, communication, manual labor, as well as a direct students’ contact with natural and artificial objects and phenomena.

There are many ways [12] ICT can improve and enhance learning:

- ICT can help organize learning around real-world challenges and project-based learning — using a wide variety of digital learning devices and resources to show competency with complex concepts and content. Rather than writing a research report to be read only by her biology teacher and a small group of classmates, a student might publish her findings online where she receives feedback from researchers and other members of communities of practice around the country.
- ICT can enable personalized learning or experiences that are more engaging and relevant. Mindful of the learning objectives, educators might design learning experiences that allow students in a class to choose from a menu of learning experiences — writing essays, producing media, building websites, collaborating with experts across the globe in data collection — assessed via a common rubric to demonstrate their learning.
- ICT can help learning move beyond the classroom and take advantage of learning opportunities available in museums, libraries, and other out-of-school settings. It empower learners with the tools and resources to explore together to better understand the world around them.

- ICT can help learners pursue passions and personal interests. This ability to learn topics of personal interest teaches students to practice exploration and research that can help instill a mindset of lifelong learning.
- ICT access when equitable can help close the digital divide and make transformative learning opportunities available to all learners. An adult learner with limited physical access to continuing education can upskill by taking advantage of online programs to earn new certifications and can accomplish these goals regardless of location.

Statement of issue: *The harnessing ICT has to be relevant to the needs of the curriculum.*

Many ICT innovations in education have failed in many countries just due lack of pedagogical purpose focus. The projects have focused on technology without creating an infrastructure to sustain the innovations.

Recommendation: *Begin with pedagogy when harnessing ICT in education. Work on clarifying the roles of teachers and students as well as all other stakeholders. Define the pedagogical partnership. Work on clarity and precision of the evidence relative to impact on learning. Put pedagogy in the driver's seat and use ICT to accelerate and deep learning relative to particular learning outcomes.*

Statement of issue: *The selection of ICT- promote educational solutions.*

There are a number of ICT-promote educational solutions available but their quality and appropriation for the specific educational tasks is not always clear. Schools and teachers have no clear connection of ICT-promote educational solutions, digital resources, etc. with the intended educational outcomes. There is a need in inventory that documents the possible learner pathways to expertise (combinations of formal and informal learning, blended learning, and distance learning and so on). Schools that have never considered such a mapping of educational pathways need increased capacity within organizations.

Recommendation: *Focus on scale and embeddedness of the harnessing ICT. Do not get distracted by shiny, seemingly glamorous gadgets. Spend time and resources on the choice of ICT-based solutions and the appropriate methodological support, which can evidently improve the educational results. Use the harnessing ICT and the pedagogical innovations that they inspire as a management tool for improving and transforming the education system with the predictable educational results. Whether creating learning resources internally, drawing on collaborative networks, or using traditional procurement procedures, institutions should insist on the use of resources and the design of learning experiences that use instructional design (UDL) practices to ensure accessibility and increased equity of learning opportunities. The education innovation clusters can serve as models for cross-stakeholder collaboration in the interest of best practices for using existing ICT resources.*

Statement of issue: *The harnessing ICT as a continuous improvement cycle.*

The harnessing ICT is a dynamic field. The education system is coming to the stage of destructive innovation, where every year new ideas and solutions appear. Innovation portfolios ideally include process, service, and business model of innovation efforts. Innovation portfolios helps to avoid the problem of letting rankings hide the connection between particular innovations, collections of innovations (which we term an innovation platform), and different buckets of innovation types and their links to key business drivers, goals, and strategies.

Recommendation: *Consider the coming planning periods as a cycle of continuous improvement, where you need to focus simultaneously on the quality of implementation and openness to new ideas. Use a portfolio approach to innovation.*

Statement of issue: *The new digital divide.*

The digital divide in education usually refers to schools and students which access to devices and the Internet is either absent or unaffordable. There is still much work to be done providing equal connectivity and device access for all. Today a new kind of digital divide has to be recognised. There are students who use ICT to create, design, build, explore, and collaborate and those who use ICT just to consume media passively. The access to devices and Internet does not guarantee access to a quality education and equal learning opportunity. Without thoughtful intervention and attention to learning with/through ICT, the new digital divide could grow even as access to technology increases.

Recommendation: *New digital divide arises because of the problems with the educational results description, curriculum, and teaching' methodology. Focus on the topic when planning curriculum. Bring to school the ICT based instruments for students' active learning open doors for maker pedagogy.*

2.2. Teaching with/through ICT when suitable

Teaching with/through ICT when suitable, means that teachers turn to

- devices (computer, projector, printer, digital microscope, robot and so on);
- digital tools (word processor, graphics editor, browser, communication instruments and so on);
- passive and interactive information materials (texts, video and audio recordings, virtual objects, and so on);
- spatialized environments (games, simulators, teaching programs, and so on);
- services (search engines, social networks, distribution networks and so on),

and use it all to achieve their professionals duties and tasks every time it is necessary, or required by the curriculum (the lesson plan, the teacher's task etc.) or for one's own needs or interest.

Teaching with/through ICT offers the opportunity. Teachers can [12]:

- To become co-learners with their students by building new experiences for deeper exploration of content.

- Create learning communities composed of students, fellow educators, experts in various disciplines, families and so on.
- Design highly engaging and relevant learning experiences through technology, select and apply ICT in ways that connect with the interests of their students and achieve their learning goals.
- Help students create spaces to experiment, iterate, and take intellectual risks with all of the information they need at their fingertips.

Statement of issue: *The technology competency expectations for teaching.*

The society has to be sure that a learner entering to an ICT-equipped classroom will encounter a teacher fully capable of taking advantage of ICT to transform learning. Among different educational institutions, administrators, and educators there are no clear common expectations regarding teachers' abilities to design and implement ICT-enabled learning environments effectively.

Recommendation: *Develop a common set of technology competency expectations for teaching in ICT enabled schools and postsecondary education institutions. UNESCO ICT CFT can serve as a basis for such work.*

Statement of issue: *The ongoing professional development.*

As a rule, modern teachers are acquainted with ICT first on the school bench, then in college, then at various advanced training courses. All these programs are poorly coordinated, often duplicating each other. They contribute little to the formation of pedagogical ICT competence and the necessary professional skills. As a result, the level of the professional ICT-competence of teachers, even within the same school, can vary significantly. This creates significant difficulties when the harnessing ICT in the educational process.

Recommendation: *Each of professional development programs and events should transition to support and develop educators' identities as ICT competent professionals, fluent ICT users and adaptive, socially aware experts throughout their careers. Programs should address specific challenges when it comes to ICT-promote learning. The ongoing professional development should be job embedded and available just in time.*

Statement of issue: *The professional networks and community of practices.*

All ICT implementation programs contain the organization of courses to improve the qualifications of teachers. These courses are usually short-term and teachers do not have the opportunity to consolidate the acquired knowledge and skills during the courses. During the courses, teachers cannot verify how new the ICT-promoted educational decisions work in different conditions. Teachers who return from such courses often do not have the opportunity to use the acquired knowledge in the workplace. As a result, the effectiveness of such courses is low. Teachers have long known the best way to acquire a new professional experience. They take it from the practice of the work

of other teachers and test it in their class. The ability to get advice and help from an experienced colleague quickly is an important element of this approach. The use of Internet has made it possible. The internet-based professional communities are a new form of ongoing professional development.

Recommendation: *Support the use of the internet-based professional communities and other online learning opportunities for ongoing professional development of teachers. To meet this need, governments need to ensure teachers have access to current information regarding best practices and a conception of the best use of online technologies to support the ongoing professional development in online and blended spaces.*

2.3. Developing culture for ICT-promote educational changes

Technology alone does not transform learning but helps enable transformative learning. These transitions will not happen without strong leadership at state, district, and school levels [12]. The focus areas of effective leadership include:

- Collaborative leadership.
- Improved student learning.
- Robust ICT infrastructure.
- Personalized professional learning.

Statement of issue: *A vision for the use of ICT to enable learning.*

Over the past decades, education workers saw many changes. Not all of them led to noticeable improvements in the students' learning. Therefore, teachers, parents, and other interested parties are not ready to become active and creative partners in the transformation of the educational process that is necessary for the harnessing ICT. To prevent their inevitable passive resistance all stakeholders need a clear understanding of the goals of the initiative and the difficulties that they will have to overcome in during the forthcoming changes. They need to know the expected practical results of the additional work they have to perform. Without the stakeholders' support and initiative, the harnessing ICT will fail, or it will require substantially more time and money.

Recommendation: *Set a vision for the use of ICT to enable learning such that leaders bring all stakeholder groups to the table, including students, educators, families, technology professionals, community groups, cultural institutions, and other interested parties.*

Statement of issue: *The funding models and plans.*

Very often governments' officials view ICT as an add-on component to support learning. They seldom try to take stock of current systems and processes across educational systems and identify those that can be augmented or replaced by the more efficient ICT-based solutions.

Recommendation: *Develop funding models and plans for sustainable ICT purchases and leverage openly licensed content.*

Statement of issue: *Communities of practice for education leaders.*

On the market of ICT solutions for education, many novelties are proposed that promise high efficiency. However, this effectiveness depends on many factors that can be identified only in the course of practical work. Leaders should have the opportunity to constantly be acquainted with the successes and failures of their colleagues from other regions in solving problems arising during the harnessing ICT in order to be able to analyse this experience and use it.

Recommendation: *Develop the sustainable communities of practice for education leaders (in person and online) at all levels that act as a hub for setting vision, understanding the research recommendations, and sharing best practices.*

2.4. Building digital infrastructure to promote learning and teaching

Building a robust digital infrastructure for learning starts with an understanding of the goals and desired outcomes. When based on learning goals, technology infrastructure decisions become clear. The essential components of a digital ecosystem to promote learning and teaching capable and support transformational learning experiences include

- persistent access to internet in and out of school;
- access to devices that serve as a tools in teaching/learning process and connect learners and teachers to the digital resources, to the internet and facilitate communication and collaboration;
- digital learning content and tools that can be used to design and deliver relevant learning experiences.

Device and network management is also the important technical component that includes a number of the supporting activities (user help desk and technical support, maintenance and upgrade of equipment, licensing for digital content and software, network monitoring and management, and so on).

Statement of issue: *Targeted interventions in the development of digital infrastructure.*

The access of students and schools to the Internet, as well as the equipment used by them, can vary considerably between schools and regions. A useful tool for planning and managing technical aspects of the use of ICT in school education is a map reflecting this picture. Network management tools allow researchers to create and regularly update such maps quickly enough.

Recommendation: *Create a map and database of connectivity, device access, use of openly licensed educational resources, and their uses across the country.*

2.5. Access to internet

Reliable connectivity, like the electricity and water supply, is foundational to creating an effective learning environment for the 21st century education. Students, teachers, school administrators, and parents cannot take advantage of the online communication, information access or leverage high-quality learning resources without consistent access to the internet.

Statement of issue: *Connection and Internet access.*

The effective use of ICT depends largely on the connectivity and access to internet. Although connectivity itself does not ensure transformational use of ICT to enable learning, lack of connectivity almost certainly precludes it. The internet should be affordable both inside the school and outside (home, local library and so on). As more and more people start use the internet, the bandwidth of communication should grow also.

Recommendation: *The government has a critical role to play in widening access to internet in the deregulation of telecommunication services to encourage competition between telecommunication suppliers and, at the same time, implement careful regulation to ensure internet access to all.*

Recommendation: *As a temporary option is the decisions like APTUS can be used for provision of offline web connectivity in the classrooms [13].*

2.6. Access to devices

Selecting appropriate devices depends in large measure largely on the age of the students, their individual learning needs and the types of learning activities that will be ongoing in the classroom or after school program. Schools may provide students with appropriate learning devices or use BYOD (Bring Your Own Devices) policies that permit students to use their own mobile devices at school. BYOD policies are reasonable but some considerations should be taken into consideration if schools use this approach:

- There are students whose families cannot afford the devices. This situation also may raise legal concerns because schools are expected to provide a free education for all students.
- It is difficult for teachers to manage learning activities when they have to support multiple platforms and device types. Some activities may be incompatible with some devices.
- Student-owned devices may not have appropriate safeguards in place for storing their learning data. The personal devices not always have the required security features.

Statement of issue: *The access to ICT devices.*

In order to actively and successfully participate in the educational process, which involves the use of ICT as an indispensable component, every teacher and student must have the necessary access to the computer and other relevant digital devices. Schools cannot develop and implement curricula and teaching methods that involve the use of ICT if teachers and students do not have access to the necessary devices.

Recommendation: *Ensure that every student and teacher has an access to devices, appropriate software and resources for research, communication, multimedia content creation, and collaboration for use in and out of school.*

Recommendation: *The decision on specific technology should be local. States and districts should make sure such device purchases are funded sustainably with a plan for device refresh.*

Recommendation: It is necessary to develop special guidelines for the implementation of the BYOD policy, if the only possible solution is the use of student devices.

Recommendation: Smartphones of students can be successfully used as a device for teaching and learning. It is necessary to develop, test and implement a teaching methodology for activities that use smartphones as an educational device.

2.7. Digital learning content

The ability to curate and share digital learning content is an important component of a robust infrastructure for learning. Schools need to ensure students have access to a high-quality digital learning materials and resources to support their learning. The effective way to provide high-quality digital learning materials at scale is to use openly licensed educational resources [14].

Open licenses for learning resources have been created by Creative Commons. The Open Source Initiative or the Free Software Foundation recognizes a number of open license types that are appropriate for the educational software solutions.

These resources and solutions may be used, modified, and shared without paying any licensing fees or requesting permission. Openly licensed materials can be more accurate than traditional textbooks because they can be updated continually as content changes. Openly licensed materials allow teachers to exercise their own creativity and expertise so they can tailor learning materials to meet the needs of their students.

Statement of issue: Use of openly licensed educational resources and software solutions.

Openly licensed educational resources and software solutions (OER) used to support education. Administrators and policymakers at all levels and in formal and informal spaces consider the diversified learning paths and potential cost savings inherent in the use of such openly licensed resources.

Recommendation: The government should support the development and use of openly licensed high-quality educational materials to promote innovative and creative opportunities for all learners and accelerate the development and adoption of new open technology-based learning tools and courses.

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ИСПОЛЬЗОВАНИЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ ДЛЯ СОВЕРШЕНСТВОВАНИЯ РАБОТЫ ШКОЛЫ: РЕКОМЕНДАЦИИ РУКОВОДИТЕЛЯМ ОБРАЗОВАНИЯ

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Аннотация

Решение об использовании ИКТ в школьном образовании может преследовать в качестве основных целей знакомство учащихся с ИКТ, сокращение расходов на образование или улучшение результатов обучения. Политику и программы по использованию

ИКТ в образовании рекомендуется рассматривать как политики и программы по обновлению школы. Среди приоритетных направлений: учение и обучение с использованием ИКТ; развитие культуры педагогических инноваций, стимулируемых ИКТ; создание цифровой инфраструктуры для учения и обучения с использованием ИКТ. Сформулированы проблемы и предложены рекомендации по каждому из указанных направлений.

Ключевые слова: ИКТ в школьном образовании, образовательная политика, обучение с использованием ИКТ, школьная трансформация.

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НОВОСТИ

Пилотные регионы для системы образовательных цифровых сертификатов определяют в апреле

В 2019 году в регионах стартует тестирование системы формирования национального кадрового потенциала. Модель тестирования утвердили на заседании рабочей группы «Кадры для цифровой экономики» при АНО «Цифровая экономика».

На основании открытого конкурсного отбора уже в апреле будут определены субъекты РФ, где пройдет тестирование цифровых сервисов и технологий, позволяющих преодолеть разрывы между возможностями системы образования, потребностями работодателей и потенциалом развития каждого человека.

В трех регионах — победителях конкурса пилотный проект будет реализован за счет средств федерального бюджета, остальные участники конкурсного отбора в этом году смогут принять участие в апробации на основе собственных ресурсов с соблюдением общей методологии апробации.

Оператор тестирования, назначенный главой региона, должен будет до июня 2019 года выстроить в регионе модель цифрового взаимодействия образовательных организаций, органов исполнительной власти, операторов рынка труда и компаний-работодателей. Тестирование будет направлено на проверку различных моделей реализации персональных цифровых сертификатов, создания системы независимой оценки компетенций цифровой экономики, формирования цифрового профиля компетенций для каждого учащегося и выстраивания для него персональной траектории развития.

Цифровые сертификаты — возможность бесплатно пройти обучение — позволят привлечь к участию в пилотном проекте население регионов. По данным аналитического центра НАФИ и АНО «Цифровая экономика», 57 % опрошенных уверены, что развитие IT-компетенций поможет им в трудоустройстве.

Пилотное тестирование системы цифровых сертификатов пройдет с апреля 2019 по июль 2020 года.

«Первые бесплатные сертификаты будут выданы уже в июне этого года. До конца 2019 года предполагается раздать 5 тысяч сертификатов. Еще 30 000 сертификатов будут выданы в 2020 году», — сказал координатор центра компетенций «Кадры для цифровой экономики» Олег Подольский.

Открытый конкурс по выбору региона для тестирования в рамках федерального проекта будет опубликован в апреле 2019 года на площадке центра компетенций.

Критериями конкурсного отбора центр компетенций «Кадры для цифровой экономики» обозначил: поддержку проекта главой региона; социально-экономические характеристики региона, в том числе уровень безработицы; инфраструктурную готовность и уровень развития информационных технологий в регионе; возможность создания регионального «консорциума» не менее, чем из 27 организаций, подтвердивших участие в пилотном проекте: образовательных учреждений всех уровней, центров занятости и рекрутинговых агентств, компаний крупного, среднего и малого бизнеса.

Результаты тестирования позволят выявить эффективные модели взаимодействия участников процесса для масштабирования на всей территории России.

«Сертификаты будут адресованы, в первую очередь, взрослым, заинтересованным в развитии своих цифровых компетенций. Использовать их можно будет на дополнительное профессиональное образование. Планируется, что концу 2024 года обучение с использованием цифровых сертификатов пройдет 1 миллион российских граждан», — отметил директор по направлению «Кадры и образование» АНО «Цифровая экономика» Андрей Сельский.

(По материалам CNews)