TARGETING 21ST CENTURY SKILLS: THE DEVELOPMENT OF UNIVERSAL COMPETENCES NOT AS A SUBSTITUTE FOR SUBJECT KNOWLEDGE

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Abstract

The world has become saturated with information, changing rapidly and in many ways unpredictably. Routine work is being automated, professions are disappearing and emerging, communication formats between citizen and state, worker and employer are changing, and the internet and social media are expanding professional opportunities and boundaries of everyday life. The education model, in which the student is focused on memorising the right decisions and then applying them throughout his or her life, has ceased to work. You can't "learn the words" beforehand - you have to be able to keep refreshing your skills. In developing the new model of higher education, international organisations and individual countries focus on two key issues: what should be the modern content of education and what competencies a university graduate should possess. Of course, there is also the question of 'how': what pedagogical practices and learning experiences will be most productive for students' quality perception of subject content and for shaping the necessary competencies - how to form such experiences and how to assess learning outcomes. The research article presents the results of a study of educators and parents on pedagogical practices and expectations from universities. The aim of this study was to find out to what extent Russian educators work in the paradigm of “active learner” and how they perceive the task of developing “21st century skills” and to what extent their views coincide with those of parents.

Keywords: 21st century skills, russian teachers, teachers’ attitudes, instructional practices, parental expectations for universities.

1 INTRODUCTION

This article presents the study of educators on pedagogical practices and expectations from HEIs. The author sought to find out how educators perceive and use the pedagogical approaches that are becoming mainstream in countries that are leaders in education.

In the late 1990s and early 2000s, countries with rapidly developing innovative economies (Finland and Australia, some US states and Canadian provinces, South Korea, Singapore, Scotland, Ireland; a bit later, China, Japan, Germany, the Netherlands, Norway, developed countries of Latin America, post-socialist European countries) became aware of the acute lack of education in preparing graduates for life in the modern world. This world has become saturated with information, changing rapidly and in many ways unpredictably. Routine work is being automated, professions are disappearing and emerging, communication formats are changing, and the internet and social media are expanding professional opportunities and the boundaries of everyday life. The education model in which the learner is focused on memorising the right solutions and then applying them throughout his/her life, is no longer valid. You can't “learn the words” beforehand - you have to be able to keep refreshing your skills. What is needed is a university, graduates of which will be able to adapt to an unspecified professional trajectory and to take advantage of emerging technological and social opportunities.

In developing a new model of education, international organizations and individual countries are focusing on two key questions:

- What should be the modern content of education?
- What competencies should a graduate possess?

Undoubtedly, the next question is “how”: what pedagogical practices and educational experiences will be most productive for high quality perception of subject content and for shaping required competencies - *how to form such experiences and how to assess learning outcomes*.

Today, a globally accepted model has not yet been formed, but it is already clear: the focus of transformation is a systemic change in teaching and assessment methods. Following a common vector, each country is navigating its own path, taking into account its unique characteristics - cultural, historical,

socio-demographic and economic. Nevertheless, by comparing the strategies and socio-political circumstances in which countries have implemented education reforms, it is possible to identify common features that allow for successful progress along the path. The vector in learning shifts from instructions to students' activity. However, the educator's role remains central: he/she should be able to create learning situations that stimulate students' independent activity, structure it productively in relation to the subject material and promote the formation of "21st century skills".

Different authors and organizations include different elements in the concept of "21st century skills", but the general direction is clear:

- the universal competencies related to: thinking critically and creatively; interacting with others and social participation; and self-regulation and self-organisation;
- the everyday basic knowledge of relevant areas of life (finance, ecology, health, etc.).

The most important factor for success in educational transformation is the relative consensus of all stakeholders, especially educators and parents. For "21st century skills", this means - ideally - that educators are aware of the need for educational change, understand the principles of building universal competencies and are able to create learning situations for this purpose, weaving them seamlessly into subject content learning; they perceive professional development as an integral part of their work. Parents, in turn - in the same ideal case - coincide with the educators in evaluating the tasks of the HEI and support the formats of work with children proposed by the teachers. An important caveat: the development of universal competences is not discussed as a substitute for subject knowledge, but as a complement to it and the ability to apply it in the modern world.

2 METHODOLOGY

The research article presents the results of a study of educators and parents on pedagogical practices and expectations from universities. The aim of this study was to find out to what extent educators work in the paradigm of "active learner" and how they perceive the task of developing "21st century skills" and to what extent their views coincide with those of parents.

The study relies on three sources of data.

1 Teachers' E-questionnaire survey.

2 Focus groups with educators (5 focus groups of 8-12 people each).

3 Parents' E-questionnaire survey.

We are aware of the questionnaire limitations when educators describe their own pedagogical practices and attitudes and the options we suggested. Certainly, more accurate and objective results could be obtained through video observation. Nevertheless, the results obtained seem to be very important as they are a focused analysis of Russian educators' perceptions of "21st century skills".

3 RESULTS

The questionnaire asked educators what skills are commonly referred to as "21st century skills"and who they think is responsible for ensuring that the student develops certain skills: the HEIs and educators, the vocational education sector (extra curriculum activities), the family or the student himself/herself. All of these skills, in various forms, are included among the educational outcomes in countries that are making successful efforts to transform their education systems. According to the questionnaire survey, Russian educators feel their responsibility primarily for two skills:

- to communicate their thoughts well orally and in writing (89% of those surveyed consider this a responsibility of the HEIs);
- to convey good knowledge in basic subjects (81.7%).

About a half of teachers consider HEIs to be responsible for development of critical thinking skills:

- only 53,4% of questioned educators consider HEIs to be responsible for development of critical thinking ("ability to distinguish truth from fiction");
- 46.6% consider HEIs to be responsible for development of ability to think outside the box.

Less than half of the educators' link HEIs responsibility with the development of learning/studying skills:

- 53.4% thought that the task of motivating students to learn;
- 19.8% thought that the interest in learning was in the students' own hands;
- 15.3% believed that HEIs were responsible for the most important component of the ability to learn - self-organization skills ("plan your time, set your priorities");
- 47.3% believed that HEIs should teach how to apply knowledge in everyday life.

No more than a quarter of respondents believed that HEIs was a forum for learning how to interact with other people:

- 25% of respondents said that HEIs should teach communication and cooperation skills ("find common ground and work with other people");
- 2.9% felt that HEIs should help students develop respectful attitudes towards other people (the overwhelming majority felt this was a family responsibility);
- 15.3% see no role for HEIs in fostering responsible citizens.

Thus, the main focus for educators is still on pre-metric knowledge; social skills and the ability to learn are more often attributed by them to the responsibility of the family.

The focus group data supports this perception of the division of responsibility in social skills development between family and HEIs. The basic reasoning can be summarized as follows

- the child's identity is and should be formed in the family;
- the family fails to do its job;
- educators have to deal with social and moral issues themselves (sometimes voluntarily, sometimes involuntarily);
- educators are generally not very good at this task, as they may not have the time, desire or understanding to do it.

Educators reproach parents that children do not respect adults, are not industrious and are not responsible. Practically none of the focus group participants, however, set out to change anything in this respect. An important clarification from the focus groups was that educators, as a rule, did not distinguish between the issues of personal education ("decency") and the ability to interact with others (social skills, communication skills). It was mainly implied that the inner qualities of the individual were the basis that led to adequate interaction.

3.1 Building thinking competence: educators don't believe in developing creativity, social scientists teach critical thinking

Approximately a third of teachers perceive thinking skills as an innate talent in terms of "given or not given". The ability to develop critical thinking skills is questioned by 21% of the educators surveyed, the ability to develop creativity by 37%. There are perceptible differences between educators of different subjects in their decisions.

Social studies educators (73.3%) and natural sciences educators (60-61%) feel that HEIs are more responsible for developing critical thinking ("HEIs are responsible for ensuring that students can distinguish accurate information from unreliable information and truth from fiction"). A surprisingly low proportion of educators (47%) attribute HEIs responsibility to the need to teach students to assess the reliability of information: a comparison with educational programmes in other countries shows that critical analysis of information expressed in numbers and assessment of the judgements reliability based on statistical information are essential.

Similar attitudes were supported by a symmetrical question asking students to agree or disagree with the statement "you cannot teach to think critically". Among subject educators (24.5%) were the most likely to agree with this statement. It is noteworthy that this distribution is closest to educators of "creative" disciplines, among whom also an average of 24% believe that one cannot be taught to think critically. Educators of traditionally "creative" subjects (31%) believed in the possibility of developing creativity to a greater degree, while subject educators (41.1% doubted).

The proportion of teachers who have ever been to a foreign school for an internship or a short study visit (12.9% in our research sample) is steadily lower than the proportion who believe that creativity and critical thinking cannot be taught. Similar differences can be observed in the educators' practices: those who are more or less familiar with foreign experience more often offer task formats that stimulate thinking (e.g. open-ended tasks) and less often focus on a detailed retelling of the textbook.

The focus groups showed that teachers had difficulty formulating how they developed critical thinking skills. Various thinking methods development suggest open-ended problems with no obvious solutions as an important component. According to our survey, less than half of the educators regularly address these kinds of tasks in class. This is done more often by educators of social and humanities majors and less often by educators of science major.

Similarly, less than a half of educators note that they use the method, in which students have an opportunity to critically analyze the educators' reasoning, identify contradictions in it and come to the right solution on their own. At the same time, more than a half of educators note that they often try not to give ready-made answers to pupils and encourage them to solve the problem independently.

3.2 21 century skills are closer to the older generation educators

There are marked differences in attitudes and pedagogical practices between generations of educators. Educators in their fifties are much more oriented towards modern pedagogy and a shift in values from teaching to active learning. The difference is noticeable in the ideas of good performance: 38% of young teachers, but only 19% of the older generation, think critically and learn for themselves, whereas 72% of the older generation and only half of the younger generation think it is important (see Fig.1).

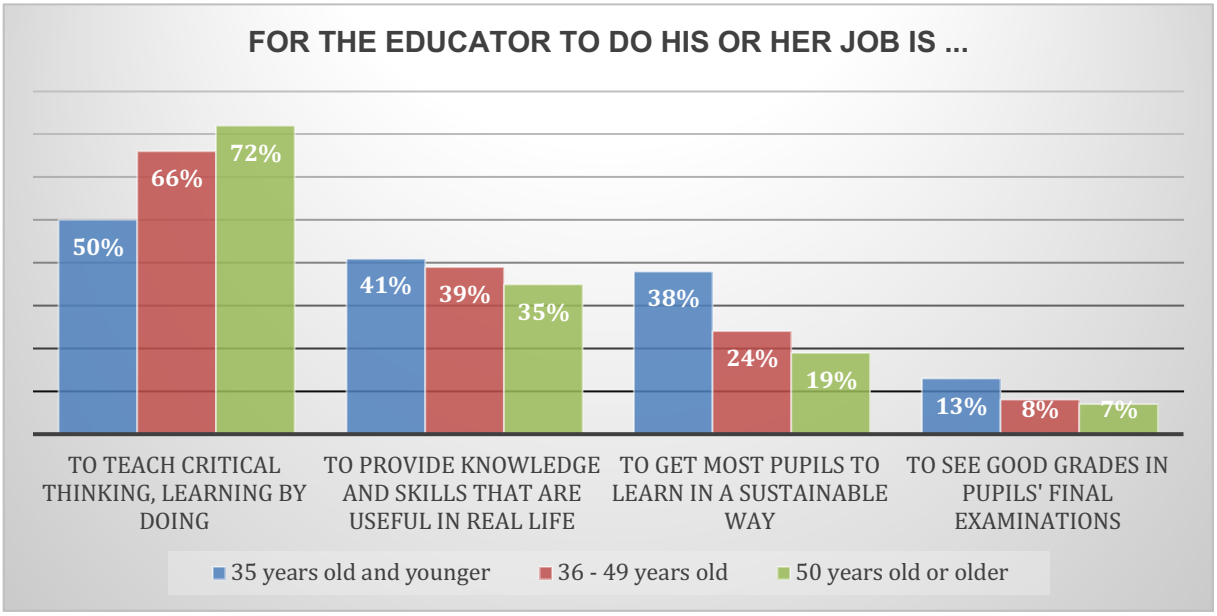

Figure 1. Differences between generations of teachers in professional attitudes, % .

The same differences appear in pedagogical practice. The older generation educators more often use methods oriented towards the development of thinking and learning skills and more often try to personalize the educational experience of students. Young educators are more likely to focus on behavioural issues and checking homework (see Fig. 2).

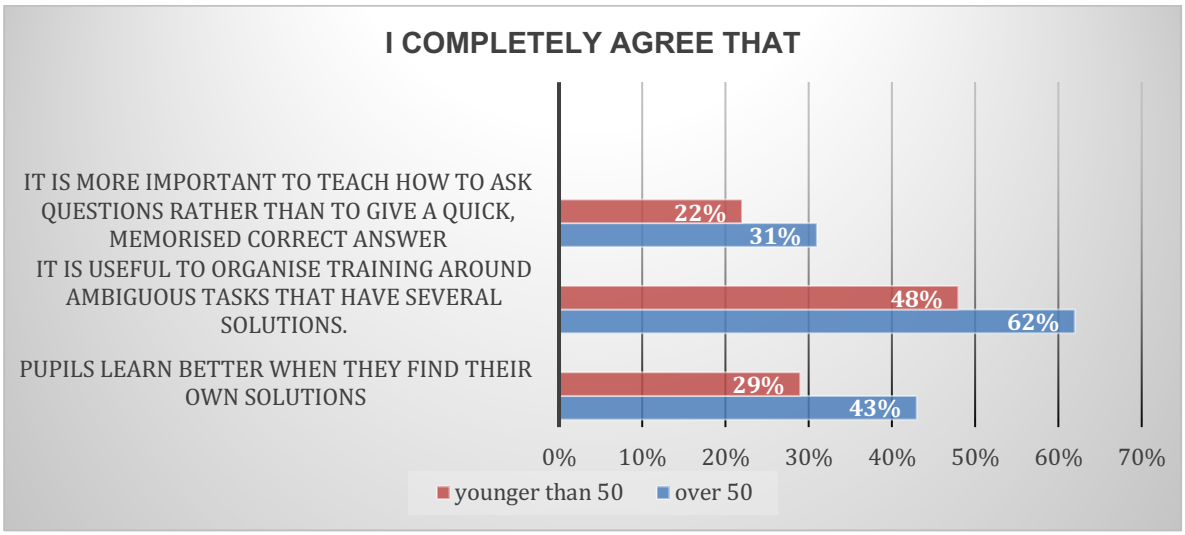

Figure 2. Differences between educators' generations of in their views on pedagogical practice.

Young and the older generation educators differ in their assessment the factors that hinder or help students' to achieve academic success. Young educators attribute success to parental help and, to a lesser extent, to natural ability. The older generation educators place a higher value on good teaching and natural ability (see Fig.3).

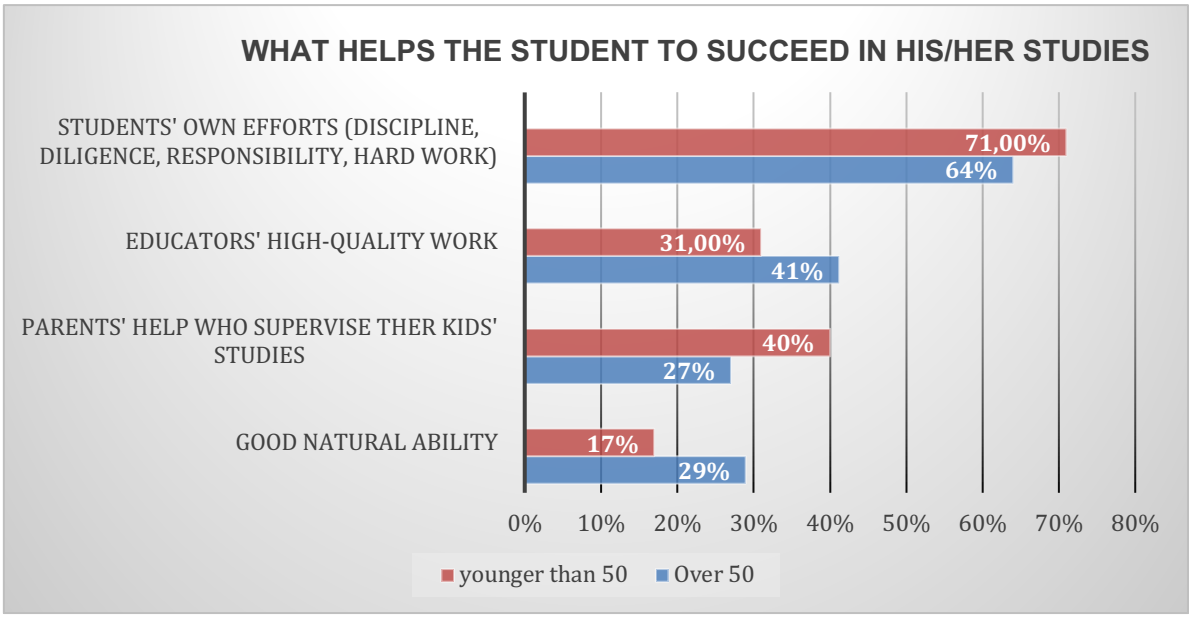

Figure 3. Differences between educators' generations in attitudes towards student success factors, %.

Young educators are more likely to organize their work around a detailed explanation of the textbook: overall, 87% of educators "often" and "sometimes" give a lesson explaining the textbook material, but almost 60% of young educators do so, and only 40% of educators of the older generation. When selecting a textbook for young educators, it is more important that the textbook "chews up" the material: this criterion is important for 27.5% of young educators and only 7.5% of the older generation educators. The older generation educators attach more importance to methodological support, the possibility of differentiating tasks and students' independent work with the textbook.

The older generation educators are more interested in meta-skills, assessment methods, and the use of digital technologies for learning. Young educators are more likely to look for opportunities to learn their subject better.

Younger generation (under 35): the pragmatic factor (steady income, ease of finding a job, convenient hours) is more important in choosing a profession. A total of 61% of them dreamt of becoming educators

as a child and 41% were definitely happy to be educators. The representatives of this generation are more focused on formal results (passing on as much knowledge as possible, getting high grades for grading examinations, etc.).

Older generation (over 50 years old): the idealistic factor of the choice of profession is strongly pronounced (I like teaching children, useful work for society). In this group, 66% dreamt of becoming a teacher as a child and 55.6 are strongly encouraged to be teachers. They are more skill oriented and see their profession as a vocation; they aim to develop students' potential and thinking skills. The middle generation occupies an intermediate position with a tendency towards the idealistic factor.

4 CONCLUSIONS

The study revealed a number of systemic shifts and deficits in educators' and parents' understanding of the challenges of HEIs, as well as directions for unlocking the existing benefits.

1 Educators are focused on subject knowledge, and this focus has not yet been expanded to include the development of critical thinking or communication skills. Half of the educators do not think that the tasks of HEIs include stimulating motivation for learning and supporting learning skills.

   Less than half of the educators surveyed (47%) think that HEIs are responsible for ensuring that graduates learn to apply their knowledge in life - that is, they do not link the learning process with the need to change what they have learned. Only a quarter of educators (25%) think that the task of HEIs is to teach graduates how to communicate, get along with other people and work together. Only 15% of educators believe that HEIs should teach graduates to plan their time, i.e. HEIs do not consider themselves responsible for the development of self-organisation skills, this task is fully delegated to the family. Only 15% of educators consider themselves responsible for graduates' civic education. And almost no one (2.9%) believes that HEI should help graduates learn to be respectful towards other people. This task is fully entrusted to the family. Thus, HEI does not consider itself responsible for developing skills that include interaction with others, self-organisation and responsible behaviour.

2 At least a fifth of educators believe that thinking skills cannot be developed ("it is an inborn ability, a talent"). At the same time, whereas 20% of educators do not believe that critical thinking can be developed, 37% of them do not believe that creativity can be developed. It means that educators need to be informed about the possibilities of developing thinking and to receive training to help them master the necessary pedagogical practices. It is useful to tap the educators' potential of 'creative' subjects (art, music), who are much more likely (compared to educators of core subjects) to believe that creativity can be developed.

3 The task of developing 21st century skills is unevenly distributed across subjects, and the potential of some subjects is not used. For example, the development of critical thinking is more associated with social sciences (history, social studies) and is unjustifiably rarely actualized in connection with the study of mathematics.

   For example, the majority of history educators (73%) consider the HEI to be responsible for teaching graduates to distinguish reliable information from unreliable information. The historians are followed by educators of the science block (60% of chemistry, physics and biology educators think so). Against this background, the proportion of mathematics educators (47 per cent) who consider HEIs responsible for developing critical perception skills seems surprisingly small: given the amount of information expressed in numbers and graphs that surrounds us, this skill is absolutely cornerstone in learning mathematics and allows us to link mathematical learning tasks with real life. In other words, more than half of the educators of mathematics do not see the potential and role that should belong to it today. Overall, subject content is not sufficiently used for competency development.

4 Practices that foster communication and learning skills are more frequently used older educators. This is a very risky situation, given that the older educators will gradually leave and the young educators will become the majority.

   Therefore:

   a. It is desirable to work actively with young educators under the age of 35 (both during university studies and with those already working in HEIs), showing them the possibilities of pedagogical practices that promote the development of universal competencies in the course of learning subject knowledge;

b. subject educators need methodological support to demonstrate how to deal with subject knowledge which also includes the development of competencies and new literacies.

5 There is a misunderstanding of what a “project activity” is: it is either a nice work by instruction or a research project (with emphasis on science). Educators do not accept the project as a group work of exploratory nature. The common expression “inquiry-based learning” adds to the confusion, confusing the word “research”, which is difficult to translate into Russian.

6 Assessment is perceived as a control tool, but not as a tool that can help improve students' learning experiences and stimulate their own learning activities.

7 Any HEIs transformation is sustainable and productive only when the expectations of parents and educators (as well as the state and employers) coincide - that is, when all stakeholders strive for the same goal.

The study found a negative balance between the views of educators and parents: both are generally oriented towards HEIs that provides the graduate with solid knowledge - all other skills are perceived as being more the responsibility of the family.

At the same time, there was a significant divergence of views on the most important area - stimulating motivation to learn. Most parents (70%) believe that the HEIs will try to motivate to learn, but only just over half (53%) of educators believe that they are responsible for their students’ learning motivation. If we add to this the lamentation of educators (according to focus group data) that parents are not interested in how their children are learning, then the child risks ending up “on neutral ground”, when his or her motivation becomes his or her own business (in reality, this is a complex process, in which the child himself or herself can rarely succeed immediately and without support).

A large-scale information campaign involving parents and educators is needed to discuss the challenges of modern education and the formats of modern pedagogical practices, including the learners’ role, the educators’ role and the family role.

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ABBREVIATIONS

HEI – Higher Education Institution

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