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Re-imagining education for desired futures: lessons from a field study

MA thesis

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Tartu, 2022

Abstract

Education should emerge as a result of diverse futures-based social contracts to help people sustain in a fast-changing world. To explore if people engaged in education can collectively elaborate future-based development strategies and avoid disintegration, action research of 21 sessions was conducted among communities of learners, educators and parents. Sample comprised 900+ participants across Russian-speaking communities in 8 countries. Frequency statements analysis revealed significant intersections within one session and between sessions, showing that learning communities can independently create reliable coordinated futures-based development strategies, and this would not cause disintegration of the educational landscape, but has a great potential to raise its diversity. These findings encourage further efforts to transform schools into prototyping playgrounds of new social contracts.

Keywords: innovative education, collective thrivability, futures-oriented education, common greater good

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1. Introduction

The massive changes emerge in education technologies and practices compared to a dominant model of the 20th century, though not yet systemic, but considerably affecting the educational landscape as a whole (Edsys, 2020; Gidley, 2011). Due to their silo presence, we still can't talk about the emergence of a new education system, but they are obvious enough to presume that the transformation is already in progress. They owe their appearance to two main processes. One of them is rather superficial and organized around evolutionary natural improvements in technologies, followed by optimizations in economy and social relationships, which at the same time bring new products and solutions to education (e.g., edtech) and force education to prepare newly shaped players for newly shaped industries and markets (WEF, 2019). This is a short-term and rather easy-to-react reason, which causes shaping of educational markets within old models, but does not lead to changes on systemic level (level of worldviews). The other, which is significantly more complex and demanding, is ignited by global challenges, which are, in their turn, caused by our previous performance, based on "defective" cultural myths and resulting in well-observed negative developmental scenarios, which humanity now should be able to react to or prevent. We can no longer rely on the old ways of processing and creating knowledge, because they, in particular, have led us to all the negative situations that we do not know how to adequately respond to. And the most harming heritage of traditional educational models is our inability to deal with unknown, or go beyond the known, and to independently evaluate the possible consequences of one's action in the situations where there is not any prescribed right answer, and it is reproductive and pattern-based character of traditional education which shaped our thinking protocols for several generations. Being implied without changes to a new extremely diverse and fast contexts we now experience, it results in predominance of reflex actions with typically unpredictable outcomes on different scales, and in inability of the agents to verify if these outcomes are really desired, as they were never trained to self-assess the quality of their choices. This determines a necessary shift in the role of education and turning it into laboratory of new life practices (or "futures laboratory"), which would help people raise themselves as carriers and distributors of fundamentally new ways of thinking and acting, suitable to completely reframe social constructs and life maintenance patterns, not curing the incurable old patterns leading to multiple systemic crises we face now (Udwin, 2020).

Educational paradigm of industrial era is characterized by reproductive character of learning, raising a person as a functional "social unit", well-packed with everything that should

be known, brought up to conform to the most acceptable social models, and well-trained to place his/her productive utility over personal values, thus becoming a collection of behavioral and performance manifestations proven to be effective for previous contexts. Considering educational organizations as "societal incubators" or "institutions where norms and values are in control" (Jonasson, 2016, p. 5), we should admit that this approach is only acceptable for highly predictable context, marked by limited diversity, as diversity and predictability are in inverse dependence, in which the existing "model of being" proved to be optimal now and hence. In such a "plateau reality", self-development through adaptation to the best examples is somehow fair, but since diversity starts to grow, standardized preparation for life with a unified and limited pack of skills and knowledge starts to fail. The reality we live through now is characterized by extreme diversity of different trends affecting and shaping our being, and, consequently, by low predictability. We experience multiple systemic crises, which clearly indicate that the behavioral models of the previous context are no longer effective. In this context the adaptive model of self-development solely through the appropriation of patterns of the past looks counterproductive and can rather lead to maladjustment of the individual in hypothetical future contexts. Instead, new desirable patterns of living and acting should be collectively generated by real participants of the educational process based on how they perceive the concept of sustainable well-being, and new ways of learning and teaching should emerge in response.

In this thesis I start from the assumption that to launch necessary transformation of education to meet both current and prospective needs of humanity, we need simultaneously:

- recognize emerging practices proved to be effective as responses to global challenges and involve them into basic curricula,
- build a strong body of futures practices to help students and educators verify learning and teaching paths according to their visions of desired futures. Only this two-fold transformation will make education meaningful and helpful now and then.

Another assumption, which cause my efforts to make education future-oriented, or even future-based, along with efforts of many local and international groups and organizations to be mentioned further, is that motivational goals for development by definition lay in the future (Nuttin & Lens, 1985; Husman & Lens, 1999; Cabras & Mondo, 2017; Andre et al., 2018;). Studies of the relationship between the presence of ideas about the future, the skill of thinking (anticipating) the future and motivation indicate that people with a more distinct and extended time perspective of the future demonstrate greater self-confidence, purposefulness, higher motivation, are better aware of their own identity and are more resilient. For schoolchildren

and students, the ability to plan and design their future gives greater academic success and a more interested attitude to the process of learning new things (De Volder & Lens, 1982).

> "... the adaptation model is not easy to apply to those forms of human motivation, the purpose of which is not adaptation to the existing reality, but its change… an essential component of human motivation, which causes individual to go beyond the status quo and upset the equilibrium in order to achieve something else. " (Nuttin & Lens, 1985, pp. 36-37)

The more diverse the possible scenarios for the arrangement of personal and collective life proposed by reality, the more obvious it becomes, that we should overcome the industrial era "engineering approach" to upbringing of personal and collective behavioral patterns based on the concepts of default fidelity of traditional and known and utility role of a personality as a means of sustaining and reproduction of traditions, and place genuine motivation for development, originating from a person's vision for desired future and pushing him/her to choose a certain development strategy, in the center of education. And the more complex are the challenges we face, the more we should coordinate our efforts to create a motivational support based on collective envisioning of desired futures that provides fundamental choices of development pathways, to part with the top-down approach, which critically reduces the amount of variety that we can handle. (Effective Practice in a Digital Age ..., 2009). This requires educational institutions to act as collective "future laboratories", where every participant has the power to co-create desired future image and build his/her educational strategy on its basis feeling involved in making life better and gaining self-empowerment by every learning activity and achievement, as it is adjusted to the common creative process and gives more opportunities to contribute to a common greater good and at the same time get more and more self-fulfilled.

To emphasize the importance of participatory character in envisioning the desired futures, I would like to turn to yet another concept of hyperconnectivity (Monaco et al., 2020). Development of digital technologies, new ways to exchange and create information, with learning networks and collab spaces partially substituting books and research centers, rapid development of transportation and infrastructure in fact make every product, solution or phenomenon easily spread outside its point of origin and have influence, as well as make everyone dependent on global trends, no matter where or how he or she lives. Globality, mobility and information transparency as key reality traits determine extreme connectedness, much higher than ever in human history. This drives us to a presumption that we live in a time

when everyone is practically responsible for everything (Laszlo, 2015). Today the “butterfly effect” is stronger than ever. Potentially any group or even person can trigger a change with global impact. Being extrapolated to social matters, it defines new necessary personal learning outcomes, where skill of cooperation and collective problem-solving plays the major part, and new social structures prototyping new ways of living and acting, based on collective thrivability or common greater good as a terminal value.

As education is directly responsible not only for equipping a person with skills and knowledge needed immediately, but for empowering to act and self-fulfill in the upcoming new situations, and is a training ground for behavioral and societal patterns that will be performed by a person throughout lifecycle, which in fast changing world means the responsibility for navigating into unknown, it becomes critical that school should transform into future-oriented learning community, which collectively creates a holistic, consistent image of the desired future, and build its current curriculum and further development strategy on the basis of this vision, acting as prototyping playground of the desired (Luksha et al., 2018).

This assumption is now a rising trend in educational innovations, being supported with a number of global surveys and international and local organizations (methodological centers), which I am going to list in the “Theoretical overview” chapter, and which tend to develop frameworks and solutions to support schools’ future-focused transformation. But it is still a question to be justified if a school community, which is most often a set of people who got together rather randomly, is able to collectively create a future vision coherent enough to become a reliable basis for a complex development strategy.

Nowadays we may observe a lot of efforts to turn schools into future-oriented communities of development and change, which independently construct their current steps and further decisions on the basis of their collective futures vision, and which I’m going to describe in a theoretical chapter. These efforts definitely contribute much to schools’ academic freedom, sense of agency and reality awareness. Still there’s a risk, that if each learning community would create its own educational strategy and learning framework based on its own vision of desired future, we could apparently come up with high atomization and isolation of learning communities and society itself, as each of them would build its own learning and teaching framework, which may cause miscommunication between personalities raised in different communities, difficulties in changing schools, impossibility to form any coherent educational policies on regional and national level. Wouldn't this approach to strategizing lead to disintegration and disorganization of the educational landscape?

My research objective is to investigate how school communities are able to create consolidated educational requests and strategies not on the basis of some standardized or averaged methodologies, but on the basis of their own vision of desired future, and still stay coherent on regional and macroregional scales. I am based on the assumption that a future-oriented approach to strategizing wouldn't seriously affect schools' connectedness. When we talk of desired future as collective entities belonging to humanity, we would definitely have many in common in our wishes and intentions, and there can be highlighted certain common traits in our future images we dream of, ways of living and acting we desire to perform, and, consequently, competences and knowledge we eager to develop. This hypothetical unity derives from, on one hand, some global cultural patterns of "common greater good" category, and from other hand, from current conditions and events which we perceive as global challenges. I suppose, that if we transform educational organizations into collective futures laboratories, developing their own strategies directly from their visions of desired futures, we wouldn't get negative effect of disintegration, as communities originating from one regional and cultural background would majorly derive their statements from common basic values, and their strategizing outcomes would be rather similar, but we would enjoy a positive effect of more meaningful verification of methods and tools a school need, and more conscious attitude to learning among students, who will, by contributing to the whole strategy and a right to change it, gain their sense of agency. Moreover, acting this way, we can gradually turn the educational landscape into a rich ecosystem (Hannon et al., 2019) of different lifestyles, bearing some common traits and have certain crossings as prototypes, while using the same educational solutions to prototype these common traits.

To provide support for my ideas and assess both the ability of a diverse group to create meaningful future-based strategy and possible risk disintegration caused by independent future-based strategizing, I collected a representative set of data from different school and local communities, using future-based collective thinking framework Community Learning Lab (hereafter CLL), which I constructed independently, though after the test series of CLL sessions has been conducted and the methodology was adjusted to participants' feedback and released, I discovered it to be much in course with UNESCO Futures Literacy Laboratories (Transforming the Future.., 2018) concept. In the "Method" chapter I'm going to describe the CLL design and the methodological background behind it. The "Results" chapter includes findings and conclusions made during two series of research taken with the help of CLL, clarifying my hypothesis. To make my work practical and useful for educators, who want to apply CLL to their schools, or willing to choose and implement appropriate teaching formats

upon their students' learning requests, I added an Appendix, which contains the script to host and facilitate CLL session.

2. Theoretical overview

2.1 Future-focused learning: mapping the territory

Despite the "futurizing education" discourse being rather new, we may observe a number of systemic initiatives working in this field. Since 2012, UNESCO has been developing a new direction, the Global Futures Literacy Network, the purpose of which is to introduce into education methods and tools for developing a new type of literacy - literacy in the field of working with images of the futures and prospecting of personal and collective being. The program is guided by Riel Miller, and its concept is described in Miller's work "Futures Literacy Laboratories (FLL) in practice. An overview of key design and implementation issues" (2018). As part of the UNESCO program, more than eighty laboratories have been deployed around the world to develop practices for working with the futures and for integration of the practices into the educational process, among which the most active is the Finland Futures Research Centre in the University of Turku, headed by Markku Wilenius and Laura Pouru (2018).

Another international provider of methodologies and practices for working with the futures in education and the author of the Future-focused schooling concept is the OECD. A division of the OECD, Center for Educational Research and Innovation (CERI) since the late 90s develops and implements the international project "Schooling for Tomorrow". This project has an open knowledge database that allows any education team to use the futures thinking development practices developed by CERI. The database includes the OECD typology of six scenarios for school development (OECD, 2001), which allows the team to identify themselves with one of the types and choose a more appropriate development framework.

The limitation of CERI's approach compared to UNESCO, is that CERI uses the standard foresight "trends-based" methodology, working with the maximal probabilities of the development within current trends and scenarios, which does not imply qualitative changes in social, political, and economic relations. This position is fairly criticized by the key modern futurists like Riel Miller, Sohail Inayatullah, Otto Scharmer, who point out that humanity is now at a turning point and faces the need to rethink the very paradigm of collective being, since the ways of organizing and using life that until now were considered "most natural" for humanity, led us to multiple systemic crises, therefore the approach, which starts from the

future, where we first come to an agreement upon the desired, and then build various scenarios to choose the most appropriate one, seems to be more productive.

To name other most active futures studies initiatives, except above mentioned Finnish Centre, which work to install futures practices into education, and thus involve all direct participants of the educational process into collective reimagining of education (Goddard et al., 2019), there are The Australian Futures and Foresight Association, associated with UNESCO Futures Literacy Chapter, the New Zealand Council for Educational Research within state Ministry of education, working under patronage of OECD, and National Agency for School Improvement (MSU) in Sweden with its "Futures Pedagogy Project", also associated with OECD, aimed to teach school teams foresight and innovative thinking and include these practices in basic educational process.

This approach is gaining popularity against the background of data regularly collected by various researchers on how traditional education is perceived by youth, as well as by parents supporting them. These studies convincingly show that young people commonly experience high level of anxiety concerning their education, as they feel disconnected from the decision-making process about what and how they should study, and therefore perceive education as something that goes against their visions and intentions (Goddard et al., 2019; Spencer-Keyse & Warren, 2018). These findings correspond with the observations from my own educational practice. As I started to conduct intergenerational discussion clubs on educational needs and perspectives since 2015, I have got clear notifications that kids, parents and teaching practitioners experience themselves to be under high pressure of standards and prescriptions coming from the reasoning they are not aware of and feel strong intention to be more involved in framing educational content and learning objectives. This was a spot, where my research and methodological story started, guided by search for answers for two key questions:

- if a school community is able to collectively create its own developmental strategy, which meets their diverse perceptions of what should be learned and the whole variety of expectations about optimal learning outcomes, and which motivates the community to take responsibility for.
- what should be the starting point of this collective work to make its results a long-term guideline helping learners and educators navigate into unknown realms of a fast-changing world.

My basic assumptions were that, on one hand, such reframing of educational strategizing requires equal polylogue of all stakeholders to make the outcomes meaningful for each participant, and on other hand, should consider participants' beliefs and perceptions of

their desired futures, from which they could derive solutions to be implied in their present behavior. I assume that such a participatory approach to strategizing of education grounded upon the visions of all stakeholders allows everyone to gain equal agency in shaping education according to real-life challenges and beliefs of a better future and thus reframe the perception of education from meaningless social ritual to empowering future-oriented journey. "Ultimately, inclusivity and collaboration between all stakeholders is necessary for effective change, otherwise key insights and needs risk being missed in the education ecosystem as it is developed" (Spencer-Keyse & Warren, 2018, p. 7).

In order to investigate if communities of learners, parents and educators may become independent co-creators of their schools' developmental strategies on the basis of their own collective desired future image, and still preserve common core allowing them to form coherent education system, I designed a comprehensive framework of collective futures thinking called Community Learning Labs, hereafter CLL, which equally serves as a set of practical steps for school communities to collectively work out a development strategy and engage all stakeholders, including students, teachers and parents in its planning and implementations, and as an action-based research tool, allowing to collect data on desired futures images and skills needed to be able to bring these scenarios into life, and thus check the hypotheses stated above. In 2021, CLL methodology was recognized as one the leading innovations in education by the HundrED expert board and entered the list of winners of "HundrED Top 100 Global". In the "Method" chapter I'm going to describe CLL as a futures-based action research tool, as its design accords with Second Person Futures Action Research pattern, described in "Linking Foresight and Action: Toward a Futures Action Research" (Ramos, 2017).

But before proceeding to the design of my study, I want to say a few words about the principles on which I relied, and which are important for understanding the structure of the sessions. They concern major changes that are taking place today in the field of futures studies, and which must be taken into account when constructing any practice of working with the future.

2.2. What is the "using the futures"[1] approach?

Education as an organized sphere of human activity aimed to provide everyone with everything needed to cope successfully, collectively as well as individually, with emerging reality is by definition future-focused, which means that process of learning and educational environment should be designed for and facilitate student's taking entrepreneurial position over

[1] The term is borrowed from Miller's work "From Trends to Futures Literacy" (Miller, 2006)

his/her learning, social engagement and prospective strategizing (Lackéus, 2015). As the world is changing rapidly and in nonlinear ways, we as educators are now facing the challenge of preparing people to live and act in the contexts that don't yet exist. We are now in a "chaos" domain (Snowden, 2001), in which there is only current position and there is no target image, experts, best practices, etc., but a rich variety of possible scenarios to define and build life and professional strategies to feel happy while dealing with the unknown (OECD, 2018).

We experience various stresses and shocks under pressure of new conditions and challenges, as we are not prepared to cope with them by what we have learned from traditional ways of educating people. In today's fast-changing world, traditional systems, and education among them, rapidly lose their power to lead the transformation, as they react too slowly due to their rigidity, while outside the systems we observe numerous weak signals. Individuals and groups perform new ways of being and acting, which they were never educated to, but which fit much more in current conditions than any "industrial" behavioral or activity patterns, marking the emergence of new normal (Saul, 2006) and possibly predicting significant societal changes and new requirements on learning and educational strategies (OECD, 2019) at the next development stage. This forces us to look outside the education sphere to find emerging solutions and initiatives, which successfully, though still rather intuitively, cope with new agendas ("grassroots of futures") and analyze them in order to derive new educational strategies and new skill sets from their experience. To say more, these "grassroots" witness the potential of local communities to perceive changes and offer responses to current challenges in their desired ways, thus literally making their visions of futures the key principle of their current transformative actions (Ramos, 2017). These phenomena give practical support to the assumption that communities are able to self-transform into prototyping spots of desired futures, and schools, being developmental communities themselves, may follow this root and thus occupy more meaningful societal position, namely involving all stakeholders into educating for change and uniting them "around collective endeavors and provide the knowledge, science, and innovation needed to shape sustainable futures…" (UNESCO, 2021, p. 11)

To name some "grassroots of the futures", appearing as responses to societal perceptions of global challenges of emerging reality ("future shocks" (Toffler, 1970)), I've made a table, which can be helpful for hypothesizing on what and how can be changed in education in relevance to emerging real-life processes of change (see Table 1):

Table 1. Grassroots of possible futures (weak signals)

Emerging reality key traits	Current global challenges ("future shocks")	Emerging prototyping actions (responses)
Globality and Complexity	Complex crises, tension everywhere at the same time as a reaction to complexity The crisis of traditional control systems due to attempts to simplify complexity Intolerable responsibility leading to diffusion of irresponsibility	Development of volunteering and civil initiatives Professions like citymaker (public), etc. Mindfulness practices UN Sustainable Development Goals
Overwhelming diversity	Excessive comfort - reduced resistance, weakened life skills Excessive secondariness (reposts and interpretations) – a crisis of confidence Excessive consumption - exhaustion of the planet, panic, competition, consumer apathy	Minimalism, decluttering, downshifting Circles of Trust, Rise of reputational capital, participatory economy Eco-trend, craft fashion and micro-niche economy, "return to the earth" trend and development of minor territories
Rapidity and Uncertainty	"Train fall" neurosis New Luddism Crisis of planning and the collapse of "Traditional" Business Models New DIY professions without relevant competencies (devaluation of professionalism) Depression and search for familiar niches, degradation	Development of cultural and social practices of futures literacy Development of the helping professions Flexible organizational technologies (Agile, Post-lean, etc). Value navigation and professional navigation (self-determination) Hackathons, science slams, children are innovators trend, etc.
Digitalization	Meeting of civilizations (human and AI), contact situation Fake reality Ethical conflicts, revelation of imperfections of traditional communication styles Loneliness on the net, online is not perceived as live communication	New ethics, technoethics, technohumanism Social projects, basic digital literacy Training of "centaurs": a person is an artificial intelligence system Cultural enlightenment Meta-reality (life-like phantoms) Neuroart

Mobility and Hyperconnectivity	New Babylon, high mobility, no time for cultural appropriation "Hikikomori" effect - digital hermits Crisis of traditional relationships, alienation, no stable ties, rejection of permanent intimacy Everyone can change the world, the growth of the influence of an individual (overresponsibility and risk of atomization)	Development of eco-villages, eco-systems Growth of self-organizing communities, new communards (technomads) Coworking spaces, coliving spaces, residences – ecosystems of life Ecosystemic businesses Social flashmobs, spontaneous movements of "improvement of the general being" (global meditations etc.) Trend towards work with the level of people's happiness (happiness managers)

But in order to help those who are studying today to navigate this diversity and place their bets on this or that scenario, we must first of all help them to:

- construct their own desired futures images,
- understand what image of the desired future lies behind this or that "grassroot", and how it correlates with their own visions,
- navigate them to consciously support one of the "grassroots" with their own development and activity or to launch their own "grassroot" (i.e., change initiative).

To resume, "using the future" approach to development strategizing concentrates around desired future image as a key means of verification of diversity and determination of one's choices and strategies in the present (Angheloiu et al., 2020), thus allowing to avoid being stuck to inertia of "used future" and "disowned future" concepts (Stone & Stone, 1989; Inayatullah, 2007), and unconsciously reproduce habitual societal patterns instead of dynamically rethinking the education at a speed of changes. In this case, a rational process of designing and comparing alternative futures transforms its function to become a measure to boost reflection on current sustainability challenges and to make conscious choices on personal and community levels, which derive from value and ethical foundations, thus transforming an educational organization to incubator where the future is actually provisioned and built, but not appropriated from external predictions in passive and defensive position (Facer, 2016).

2.3. Futures practices for education: critical paths

Usually, futures practices for educational purposes are divided into the following three types (e.g., Pouru & Wilenius, 2018; Emanuelli et al., 2018; Wheelwright, 2011)

1) Practices for identifying and clarifying students' own motivation (forming of learning requests and learning journey routes for the purpose of further choosing a specialized education and professionalization).
2) Practices for creating and adjusting educational programs taking into account current challenges and global trends, possible scenarios for human development.
3) Practices for transformation of managerial decisions and models of educational organizations.

The common trait for all these types is that they suggest deriving desired future image and, consequently, prospective goal setting from the current challenges and emerging processes. Such approach is generally based on foresight techniques and is quite accurate to describe task areas in which it is advisable to apply the futures practices for building of the possible scenarios in the context of somehow predictable social reality predictable reality. Nevertheless, it may cause limitations in the context of diverse and low predictable social reality as we perceive now, when new ethical and behavioral norms, as well as new social constructs are gradually evolving, and we cannot say that we clearly know what to expect from people as societies as the most possible responses to challenges. Moreover, we are those people, who are now constructing this new social reality, and the bias in favor of trending of previous and current contexts may make us blind to consider desirable and possible, but hardly probable scenarios (Miller, 2006).

Firstly, as I mentioned above, such use of futures practices focuses on the current situation and linearly derives solutions from the current moment, which limits the creative potential and agency of the participants, and, moreover, is unable to bring the participants' imagination beyond the borders of routine, making it nearly impossible to construct any different image comparing to sustaining situation and blocking their efforts to elaborate changes. (Heinonen & Ruotsalainen, 2013)

Secondly, this approach to futures practices focuses on the global and social aspects of transformation, making the participants feel as if all the tasks that they will have to solve within their personal and social activities are external to them, and all they have to do is to support this or that trend, which appeared and gained - or will gain - power with or without their contribution. Such insight of "somebody constantly building future behind my back" may be

accepted as a deal or challenge, provoking to raise one's influence and power to change, for example, with notable academic achievement or activism, only if a personality is already considerably mature and experiences some significant outcomes of his/her agency, but may cause strongly opposite depressive effect on children, whose agency is only emerging, and even grow-ups, who experience living in societies with high level of paternalism.

Another disadvantage of a major part of practices involving kids in futures thinking is their individual character. They mainly address personal needs and expectations and offer techniques to envision individual thrivability, thus forming forward-thinking literacy in an ego-systemic manner (Scharmer & Kaufer, 2013), narrowing a person's vision to individual success. Meanwhile, in hyperconnected world, collective thrivability is a question of value-based collective problem solving and of high-level concurrence (Laszlo, 2014), which, in its turn, requires a new social scenario, i.e., formation of active and responsible communities acting as conscious collective entities for the greater good (Scharmer, 2016). As we actually live in a world that organically involves everybody into the process of creation and implementation solutions for sustainable development of the whole human race, there is simply no way for a "separate future". We can't roll back to simplify the technologies to the extent where one can build an isolated infrastructure not affected by the rest of the world – of course if we don't count in a global war which would break the technological civilization to the ground and throw us back to the times of primitive isolated communes. In the complex world of hyperconnectivity no one person or team can create desirable futures or outcomes in isolation.

To resume, this design approach to futures practices could be useful in specific cases, but only after we have already gone through a certain path of joint work in human-centered relationships and environments and have formed both the personal agency of each participant, and the system of subject-subject relations, or co-agency (OECD, 2018), where each participant acts and feels like a co-author of common managerial and methodological decisions. That means that basically futures practices should serve as a means of forming synchronicity of vision (image of the desired) and communication space, where each participant is given an equal space for being and actions (Laszlo, 2014).

If we construct futures practices in this way, treating them as focused on the development of the students' agency and community empowerment, their entrepreneurial and authorial position, which is critical for living and acting in a fast changing world (Inayatullah & Milojevic, 2018), the ability to anticipate and envision the image of the desired outcome and consequences of one's actions, and to bind different visions and perspectives into non-

controversial entity, they not only become a part basic literacy, but also should acquire certain specifics:

1) Scenario building instead of planning (multidimensional thinking)
2) Collective character of futures practices
3) Creation of fields of probabilities and consequences instead of linear strategies
4) Dreaming precedes research
5) The desired future weights more than the most probable
6) Category of common greater good as “quality metrics” instead of category of effectiveness/expediency
7) Transforming action as necessary part of a practice

In fact, moving from a predictable world to an ever-changing world, the critical path in futures thinking skills comes down to moving from planning the future as a logical continuation of the present to designing multiple futures, and deriving our present strategies from the most desired one (Miller et al., 2013)

In this regard, futures studies actually become an area of investigating various collectively created images of desired futures and problematizing positive and negative versions of development from the present with respect to these images, as well as searching for strategies to achieve consistent diversity in favor of the common good and sustainable development (UNESCO, 2021). Futures literacy, in addition to the traditional focus on the ability to keep abreast of what is happening, compare and analyze contexts and trends and find solutions in the area of probable and event-driven, acquires a new focus in the area of skills of conscious dreaming about the impossible (unlikely), operating with intentions and the category of common good and creating solutions and projects that are not just new, but innovative and at the same time humanistically conditioned, most likely leading the community where they originate, to the realization of the community’s image of the desired future, cohered with the desired futures images of other communities. “Future studies create alternative futures by problematizing basic premises. By asking questions into the future, analyzing emerging problems, creating scenarios, we thereby strive to get out of the present and create opportunities for new futures to arise” (Inayatullah, 2013).

Extrapolating this approach to management in education, we should admit that asking questions into our desired future on what and how we should learn to arrive there, i.e., to transform our school into prototyping and construction ground of our desired future, may become a powerful tool of verification of educational methods and practices offered to schools by different providers and stop adopting educational solutions blindly or so as to be social. The

hypothesis is that educational practices, which suit conscious requests, will be easily accepted by a school community and have actual transformational potential when applied, so the selection of practices should be based on accordance of a practice essense with the community's request for change, but not on the suitability or effectiveness of the practice shown in some other context or organization, or on the generalized standards. "The transformation we are really talking about in education… shifting away from an assumption that coercion and non-consensuality are okay in education—from a belief that the role of adults is to decide what is important and force kids to do it—to one that affords basic human rights to children and approaches education from a position of equity and co-creation instead of command-and-control" (Eden, 2020, p. 113). And here a new question arises: to what extent educational innovators and providers of educational solutions dive into visions and expectations of school communities to learn and take into account their vital demands for new practices, which they are ready to accept, or they, consciously or inertially, impose their own desired or expected future on school communities, thus depriving their agency.

2.4. Futures thinking practices taxonomy

To resume, in today's fast changing world, where every person or group is constantly influenced by many factors of reality, and influences the emerging reality as well, which makes a vast variety of different change scenarios equally possible, the more efficient would be to construct the futures thinking practices for education on the principles of participatory scenario building and making the collectively created future image a driver of present changes (Ramos, 2017):

1) Thinking starts from the future and gradually flows to the present in order to form common semantic and value fields, put the landmarks and mark the direction of movement, then goes back from the present to the future to find gaps, assess resources and set goals.
2) Various aspects of thinking and perception are on stage, through inclusion of conversational (discussion), narrative, creative and analytical formats in the overall design process.
3) Collective work on every format, even of personal origin, with subsequent synchronization of results.
4) Equity and holacracy, which means taking into account all positions and scenarios created in the course of work and finding strategies and solutions that take into account the voice and intention of each participant.

5) Ending up with planning and action. If the conceptualization stage is not inherited by the prototyping and implementation stage, participants lose a significant part of their motivational and educational (transformational) potential (Slaughter, 2004). Until the desired changes are tested and verified, they are not appropriated and do not give energy.

Based on the above, I propose a slightly different taxonomy for futures practices in education, which is more suitable to empower strategic thinking, collective intelligence and future-focused self-leadership, though different types may be mixed inside one complex framework (see Figure 1):

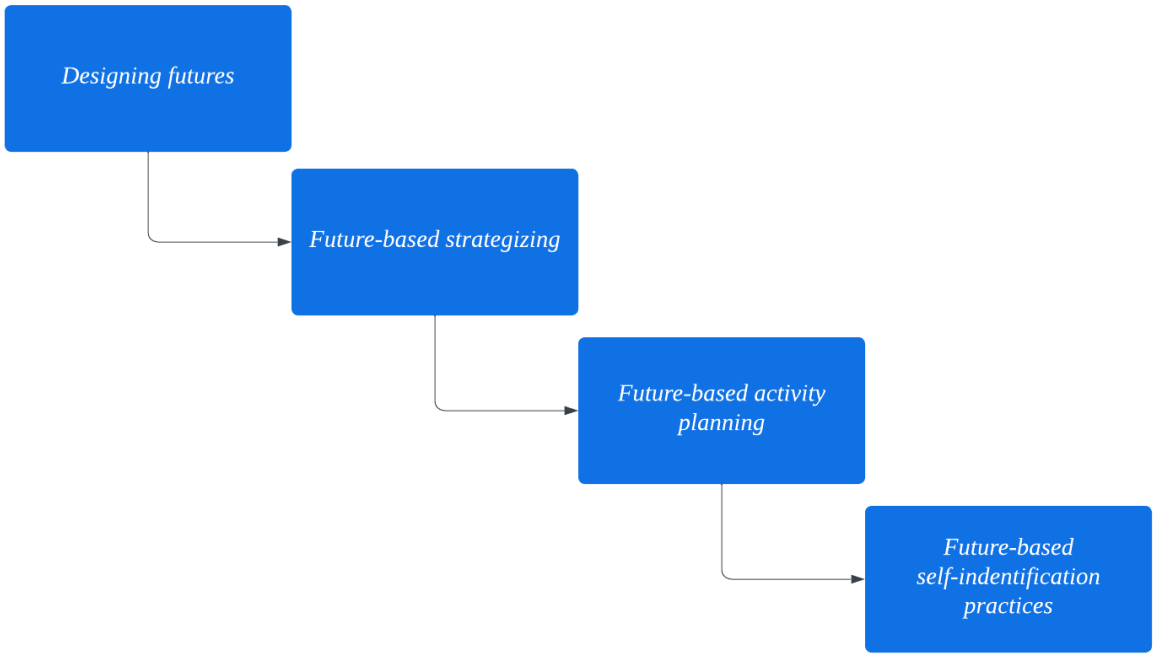

Figure 1. Taxonomy of futures practices

1. **Designing futures,** includes different methods of collective scenario building of the desired futures (Miller, 2006), which leads to the emergence of a group as semantic unity (sensing togetherness within class community, school community, city community, etc.) and the creation of a collective synchronized semantic field of key meanings and cultural practices that reproduce and translate these meanings in the daily life of the community.
2. **Futures-based strategizing,** includes practices of collective-personal strategizing and goal setting with subsequent entry into the activity phase. Here, not only the formation of personalized (personal and micro-group) requests for development and action takes place, but also an important new turn learning team's group dynamics occurs - as

collectivity transforms into community united by common meanings and values identified in the scenario building process, as well as the allocation of potential working (research, project) groups within the community, united with common interests and developmental requests.

3. **Futures-based activity planning** involves prototyping practices, conducted by a complex community[2], which designs and implements managerial and procedural contour of educational organization as a "continuous development hub" and is able to manage its development strategy "for desired future" constructed and synchronized with the help of "designing futures" practices.
4. **Futures-based self-identification practices**, used to help individual agents to occupy responsible positions within the designed tasks in accordance with their competencies and intentions, including collective initiatives for organizational development of their school communities, as well as individual objectives concerning their own development in the course or "learning for desired future".

This approach to construction of futures practices correlates with contemporary discoveries and concepts in psychological time perceptions, which are rarely considered in classical futures studies. As many researchers stated, future time perspective is closely related to motivation, as ability to imagine and structure personal future becomes a powerful driver emitted behaviors (Nuttin & Lens, 1985; Husman & Lens, 1999; Lens et al., 2018; Herrera, 2019), shaping a person's current actions as conscious steps towards realization of the desired. The suggested cascade method of design, progressively leading the participant from dreaming to action planning, again relies on what we know about the connection between time perspective and sense of agency, empowering a person to make a leapfrog from desired to accomplished, which includes a) perceiving desired as realizable (Fraisse, 1963) and b) believing that a person is able to exercise control (or imply changes) over events that affect his/her life (Bandura, 1989; Emirbayer & Mische 1998).

3. Research method

CLL, which I used as a data collection tool, is a simple open-source methodology for collective thinking sessions designed upon the above suggested requirements for futures practices and

[2]A higher-order collective agent, consisting of active individuals and groups self-identified while undergoing the second stage activities, who have taken a leadership over their individual development and are aware of their value in the overall process of community development.

aimed to launch and strengthen the essential process for “education forming the future”, the process of intergenerational dialogue to collectively construct education for a desirable future. Laboratories on "Education for a desirable future" involve all participants of the education process, including students, teachers, parents, and school management in search of best solutions to empower people to become constructors of common greater good and to transform school into “community for development.”

3.1. Samples description

During the study, CLL was conducted in two series of sessions, samples for each series being different by origin, but similar by age and social role.

For the first series I succeeded in collecting data from twenty-one sessions, including five sessions outside Russia (one session in Latvia, one session in Uzbekistan, two sessions in Belarus, one session in Ukraine). Each session consisted of 2-5 groups which worked separately and coordinated their results at the end of the session to see if similarity level allows them to create a common map of desired future traits and skills needed to support and prototype this image. In the sessions of the first series, it was more important to check if different people are generally able to create a coordinated vision of the desired future, if they are placed in a situation of an equitable generative polylogue, and if they can use this generated futures images to ask themselves meaningful questions of what and how to learn today if they want to end up there, that is, whether they are able to formulate conscious complex learning requests and to take responsibility for the future by means of their own development and activity. Therefore, mixed samples took part in a series of sessions, that is, the sessions were held at independent sites among students, parents and teachers both from public and private, traditional and alternative schools and homeschooling communities, who were united by a common concern about the quality of education and by desire to contribute to the formulation of educational requests based on their vision of the desired future, which could then be included in the educational agenda of their local communities. The data of this stage were collected with the help of CLL method, and clustering order (taxonomy) was directly derived from the collected statements topics.

The second series had a slightly different objective of clarifying if active members of a certain school community could get along in their desired future vision and derive the school development strategy and certain measures and innovations directly from it. Therefore, all sessions were conducted in separate school communities and had additional stages of voting for certain innovations and roadmapping after data collection and structuring stages. For the

second series, my colleagues and I conducted ten sessions mainly in state-owned schools, including three sessions outside Russia (one session in Estonia, one session in Kazakhstan and one session in Montenegro). Each session consisted of 3-12 groups of participants which worked separately and coordinated their results at the end of the session to see if similarity level allows them to create a common map of desired future traits and skills needed to support and prototype this image.

By limiting the study to native speakers of one language, I tried to avoid biases that could arise during translation, because due to the nature of the study, it was not possible for me to find out the authors of all statements and ask them personally what they mean. The only exception was the session in Montenegro, which was facilitated in Serbian.

The selection criteria for the sample participants were as follows:

- willingness to take part. Participation in sessions was purely voluntary, as I wanted respondents to be enthusiastic about formulating their visions and demands for actual education.
- age not less than 12 years old. As a collective thinking session is a complicated activity, it is not effective for the ages under 12, as juniors would experience difficulty doing continuous mental work for 2-3 hours.
- being either a student or a teacher of a general education organization, or a parent of secondary or senior class students, or a student of an alternative educational organization (alternative school, homeschooling community).

Gender was not included in criteria, since I do not consider this characteristic to be decisive for the content of the statements participants make during the sessions. The exact number of participants also was not a requirement, except the minimal quantity of participants should not be less than 12 people, therefore, different sessions varied in the number of participants from 20 to 120 people involved.

The first series sample was uniform, with a ratio of adults and children of approximately 50/50, while within the group of adults, parents dominated: they accounted for 60% of all adults. In the second series sample, children accounted for about 60% of the total number of participants, and in the adult part of the sample teachers dominated, while parents who were not educators themselves, in total, were no more than 15% of the number of adults.

3.2. CLL stages and rules

Basic part of CLL, which is namely was taken as data collection technology, is organized as three-stage collective thinking session, where the first one is collective dreaming, and two others are analytical:

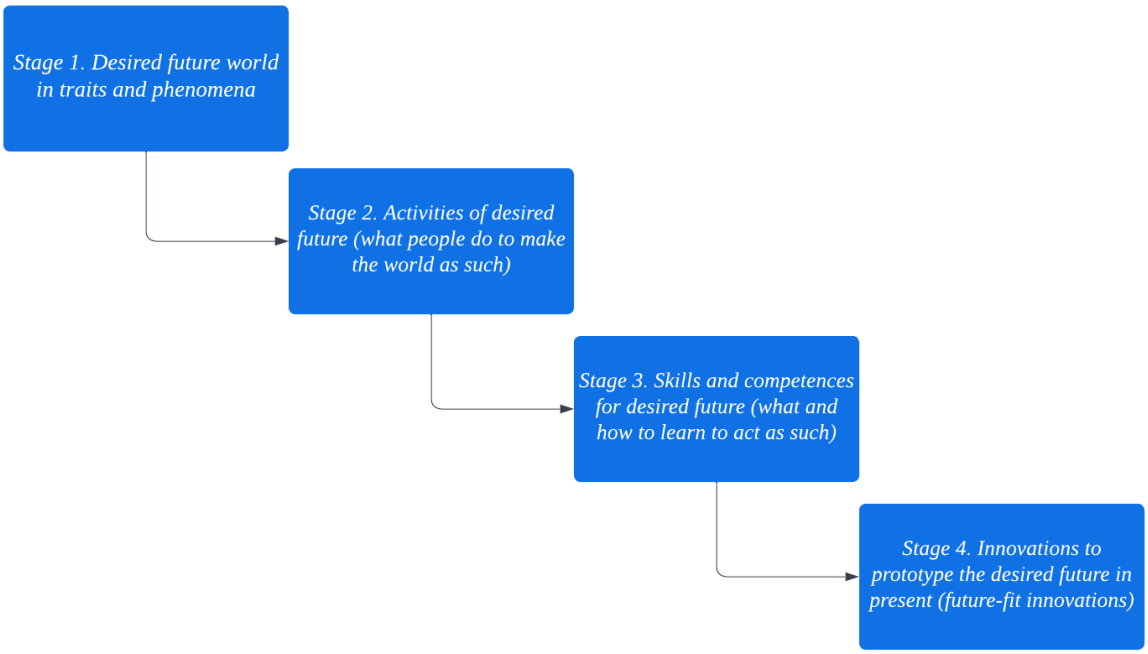

Figure 2. CLL basic stages

Stage 1. Desired future world. During this stage participants offered to construct an image of the desired future world consisting of events and phenomena they feel to be critical for their desired future. Facilitator asks participants to write events and phenomena in a simple and detailed form, one item on one sticker, and place stickers on a flipchart. After a while, facilitator invites all participants to look at the entire array of statements and suggests clustering them according to spheres where they originate (e.g., ecology, social relationships, architecture and urban development, medical care, etc.), under every statement has equal value and no statement being excluded rules. Participants collectively cluster the statements, then brief time is given to discuss the main traits of the world they created.

Stage 2. Activities of desired future. As in the first stage participants define how the world of their desired future is arranged, during the second stage they are offered to think about the lifestyles and activities of the people who inhabit it. Facilitator points out that, after all, everything that is observed is a result of efforts, as people in this world choose certain professions or behave in a certain way on a daily basis. The mechanics of the stage is the same:

all participants put their personal statements on flipchart (or Miro board if the session is online) and group them, marking repeating statements. The only difference is that in the first stage all the statements are a result of imagination, while in the second stage they derive logically from the results of the first stage. During the discussion time, facilitator helps participants to check logical connections between desired future processes and artifacts and activities, asking questions like “What this activity is needed for (what is effect of this activity)” or “How (by what activity) this phenomenon (technology, artifact) appeared in your world”, thus boosting participants to find lacking or “empty” (not connected to any phenomena) activities.

Stage 3. Skills and competences for desired future. In the third stage, participants are asked to logically trace necessary basic skills directly from the activities mentioned previously. The facilitator suggests focusing not on some highly specific skills required by certain professions, but more on the basic skills that are needed to lead such lifestyles, support emerging such a world, and feel confident in it. Facilitators may provide examples like “if everyone in your world is actively traveling, then they possess some trained ability to move easily from place to place, and if the majority works remotely, they are definitely doing well with digital literacy and self-organization,” etc. Personal statements are then being clustered and discussed, as in stage 2, to find lacking and redundant skills.

Stage 4. Innovations to prototype the desired future in present (future-fit innovations). The final stage is aimed to brainstorm the concepts of innovations or changes to be applied to the school environment and curriculum to start prototyping the desired ways of thinking and acting with in-school learning and social activities. Participants are asked to revise both the traits of desired future and the competencies they want to be developed and map the personally suggested innovations around the traits and competencies. After that a group may be suggested to select one innovation to be turned into a project, they are ready to carry out themselves.

As a final product, each group creates three coherent maps: a map of desired future world image, a map of activities supporting this world, and a map of skills and competences needed to create and support it. These maps serve as a basis for strategizing and projecting of school development, or students’ group changemaking projects, or personal development (learning) paths, which is to be described further. Final stage results in a list of ideas for DIY projects a certain school community is ready to launch as “seeds of change”, which makes the session valuable as a starting point of collective transforming activities (Ramos, 2017).

To get the most authentic results, CLL is conducted under the following rules, which are to be supported by facilitators during group work:

- using the future: participants should derive 2-3 stages outcomes and their suggestions on preferable educational innovations directly from the desired future traits designed during the first stage
- collective thinking: the outcome of each stage should be created collectively; all unclear and controversial issues are to be resolved in brainstorm
- being specific: each statement should clearly describe certain phenomenon or activity; too generic or evaluative statements are to be clarified by facilitator
- creative equity: every point of view has equal value
- non-judgement: we try to avoid evaluative statements as well as judging others' statements, making session space safe for free thinking and sincere self-expression
- looking for similarities: we use "search for likeness, not for difference" principle, thus problematizing common mental pattern "different is opposite" and learning to see the multipolarity of reality
- going beyond the usual: no future is crazy enough to be neglected, the only question is what is desired one among multiple futures

3.3. Approbation of method and data collection

Laboratories have been conducted since 2016. Until the end of 2018, the labs were mainly held by a small team, as lab technology was undergoing the experimental stage. By the end of 2018, after the technology was tested among non-specific intergenerational local communities of teenagers, parents and educators in Moscow, St-Petersburg, Vladivostok, Tobolsk, Tyumen, Tomsk, Riga and Minsk, and several specific communities of certain schools in Moscow, St-Petersburg, Tomsk, Tolyatti and Minsk, it became clear that it may bring very interesting data on what real participants of educational process want to be included in it according to their visions of desired futures and in what to learn to make it real. To collect more data, I proceeded to a scaling phase and made the technology open source. In December 2018, I wrote a post on my Facebook page, with a concise description of the lab's objectives and values and invitation to adopt the technology and organize a lab. The post went viral and gave birth to a community of educators interested both in developing futures literacy in their places and in involving all stakeholders into horizontal dialogue on desirable education needed for collective sustainable development and thrivability.

After a short preparation, this community, acting as facilitators in their cities, organized a series of CLL in Belgorod, Omsk (two labs with different samplings), St-Petersburg, Moscow

(two labs with different samplings), Kazan, Naberezhnye Chelny, Ekaterinburg, Novosibirsk, Kemerovo, Vladivostok (two labs with different samplings), Izhevsk, Minsk (two labs with different samplings) and Chistopol (Belarus), Tashkent (Uzbekistan), Riga (Latvia), Kiev (Ukraine) and Tallinn (Estonia). The labs not only made it possible to meet up different local communities and generations, representatives of formal and informal education, of schools and universities, and inspired them to seek for common ground in their vision of desirable future and for education able to empower people to make this future come true, but also inspired local educators to start implementing futures literacy to their curricula. These laboratories formed the first series and brought me the first set of data for my research. To collect the data during the first series, which was conducted offline, I organized a set of instructional webinars in order to prepare local facilitators for correct questioning to get the accurate data and asked them to take photos of all flipcharts with stickers containing participants' statements immediately after each stage and send them to me to avoid data loss and interpretations of the statements participants actually made during the sessions.

In 2020, I have got support from the fund "Education for society" and RANEPA, which allowed me to conduct a second series among state schools, aiming both to unite school communities and to engage parents and students in co-creation of their schools' development strategies and to check the first series outcomes within specific school communities. To conduct the series, I prepared a group of facilitators and remastered the technology to be suitable for online facilitation. During the second series, which was conducted online, the participants posted their statements through Google forms and worked with shared spreadsheets, so that I could get access to any data of any team immediately, which guaranteed 100% data security.

In both series of sessions, participants were divided into groups according to their "social roles," which means that students, teachers and parents worked in separate groups. This solution was implemented to 1) avoid probable psychological pressure on children from adults and to get the most clear and sincere statements from each group, and 2) to explore if there are critical differences in visions and demands exposed by children and adults.

During each stage participants in each group used sticky notes to place their personal statements on a flipchart if the session was guided offline or posted their statements into a shared spreadsheet through Google forms if the session was guided online. After statements were collected, facilitator offered to organize the flipchart, i.e., to:

- take away identical statements except one sticky note and draw "+" signs on it equal to the number of repetitions. This allowed group (and me as well) to highlight the frequent statements within each group.

- group statements under categories (topics) to which they relate. Several key set topics like “ecology” “culture”, “education”, politics”, “technologies”, “economy” derived from a 2-years test period, were offered to each group by facilitators, other categories were created after similar statements were grouped. This allowed participants and us to see which topics seem the most urgent for each group and the sampling within each session.

During each stage following the first, participants were asked to look at the results of a previous stage to derive their statements logically from them. This made it possible not only to ensure inheritance between stages, but also to reversely detect important statements that, for some reason, were omitted at the previous stage. To do this, participants were asked to make a reverse analysis of their statements after three basic stages of a session and detect statements that are not supported by any phenomenon from the previous stage. After such statements were detected, the facilitator questioned the group if the “unsupported” statement points to something important that is missing, or if it is just a mental cliché a group was unable to get rid of. This made it possible to get rid of statements that appeared solely due to the participants’ habits and were not related to their vision of the desired future.

Every session ended up with the reflection stage which allowed us to assess the quality of the session. Reflection circles were organized in a form of semi-structured interviews, which facilitators conducted in their groups orally in a form of conversation circle. The conversation circle format allowed the participants to determine themselves what questions they were ready to answer, relying on their state at the end of the session. Thus, we tried to preserve the spirit of voluntary involvement, which is critical for openness and sincerity, though the facilitators encouraged participants to respond. The reflection questions can be found in the full version of “Instruction for CLL facilitator” (Appendix 1).

After the whole two-series set of CLL was finished, I collected, grouped and analyzed the most frequent statements across all sessions. The statement was considered frequent if it repeated in more than 50% groups in one session and the situation repeated not less than 5 times across all sessions.

4. Results

4.1. Desired futures visions comparative analysis

When we conducted the first CLL series to address the question if diverse groups strategizing outcomes would be rather similar, and the data were clustered, a high homogeneity

of opinions was found both within one site and between sites. It turned out that it was quite easy to identify elements of a vision of the desired future that are common to all sites, and skills that were called key for such a future in each case and necessary for mastering right now by all sites. It provided evidence that people, even those who came together by chance and were not connected by previous interactions, can create a holistic, consistent image of the desired future and collectively formulate a conscious educational request that can become the basis of a development strategy for a separate school or the educational agenda for the whole region. In addition, comparing the results of sessions from different cities and even countries also proved the assumption that there is a large intersection in the visions of the future and the educational demands arising from them, so we could resume that if school communities of different geography base their development strategies on the desired future, different schools, wherever they are, will have a common core of social practices and skills being developed.

Then the following assumption arose: could the intersection be caused by the fact that the call to participate in such sessions attracted people with a certain mentality, originating from a certain socio-cultural layer, which, although geographically extended, can be very thin and not give an adequate picture of how people from different school communities in different regions see the future and, in connection with this, define their necessary educational tasks.

To test this, together with my colleagues I conducted a second series, this time predominantly in public schools, and each session involved only representatives of one school - students of 7-11 grades, their parents, teachers and administration representatives. The collected data showed that again there were no significant discrepancies in the key features of the desired future and the key skills needed to carry out such a future, although there were small differences in the frequency of mentions of the same desired future traits and necessary skills in different schools. Thus, we may assume that if schools rebuild their curricula based on these statements, they will all have the same core, but different profiles.

Nevertheless, it is important to mention some shifts in the results of two series and raise the next research question about their nature, which would need further investigation. In general, the first series resulted in rather technological and scientific future with the most frequent future traits coming down to space exploration and domestication, followed with green technologies of all kinds and robotization of most routine and dangerous activity spheres, and accompanied with variety of statements illustrating rapid development of innovative education, supporting science and technologies. In the second series, all these traits were also named as frequent, but space dropped to the last place among top ten of frequent statements, losing ground to statements on political and social justice, global equity and tolerance, sympathy and

trust as norms for interpersonal communication. The interesting finding is that the first series did not bring any economic-related statements among frequent, while in the second series there were many of them. Table 2 offers more detailed comparison of the frequents statements on desired future traits, where the central column presents common statements, left column contains the statements, which are frequent for the first series frequent, but absent or rare in the second series, while right columns consists of the statements which appeared as frequent in the second series but were absent or rare in the first series.

Table 2. Frequent desired future traits

1st series (2018–2019) unique	Common	2nd series (2020–2021) unique
Politics	**Politics**	**Politics**
	No wars	Global state
	No state borders, world is open to all kinds of mobility	Real democracy
	No terrorism	Citizens play active role in policymaking
	No racism and cultural intolerance	
Technologies	**Technologies**	**Technologies**
	Interplanetary flights	Teleportation
	Colonizing Mars	Smart homes
	Robotic helpers	
	Flying private and public transport	
	All routine and dangerous jobs are made by robots	
Ecology	**Ecology**	**Ecology**
Moderate consumption	Clean and renewable energy	Zero waste (all waste is sorted and recycled)
Resource managements skills	Greenery is everywhere	Regenerating of vanished species
	People volunteer planting green	
Urban life	**Urban life**	**Urban life**
Open educational spaces	Cities as parks	Many spaces for kids
	Many equipped public places	People mainly move by bikes/scooters
	Cities are more populous but well-structured, which makes them spacious	
	Flying buildings	
Education	**Education**	**Education**
People learn throughout life for pleasure	Basic education is free	Learning gadgets imitate real production processes
Education is accessible from everywhere (global learning platforms)	Personalized learning	Practice-oriented learning (practice-based professional orientation)
	Everyone improves in what he/she likes	
Teaching is conducted by real-life practitioners		
Peer education, open		

learning happenings		
Healthcare	**Healthcare** People practice healthy living Curing for all types of cancer	**Healthcare** All serious diseases are cured/eliminated Prosthetic devices for all body parts and organs
Social relationships Individuality is valued People support each other in self-realization	**Social relationships** No violence Rise of public initiatives All people communicate like friends AI serves to facilitate collective problem-solving Equity is a basic value People work by vocation	**Social relationships** Mutual respect between generations Elders caring programmes Relationships based on trust Common greater good is above all
Culture Local cultures are supported and studied to preserve cultural diversity Universal cultural patterns exist with respect to local cultural specialties	**Culture** Natural cultural diversity (diverse cultures are valued and studied without any external or artificial support measures) Almost all engaged in creative activities	**Culture**
Economy **No frequent statements observed**	**Economy**	**Economy** Barter and sharing economy Global currency No poverty No wealth disparity Free basic goods and medicine No jobless

As we can see from the table, there is a significant intersection between desired futures traits between two series of research, so we may assume that certain community affiliation does not much affect the image of desired. The second important observation is that there is a large body of common statements within each series of FL, as well as between two series of FL, which allows to presume that if a school or local community would be given freedom to elaborate its agenda and learning curriculum directly from its vision of desired future (what, how and for what to learn), there would be no significant differences between what different communities tend to do for their development based on desired futures vision. Nevertheless, two series of observations exposed slight differences in frequency of certain statements, as well as several unique topics of concern, which I would like to stress out.

As for differences, though both series have a positive environmental agenda atop of the most frequent desired futures traits, the first series has green and renewable energy sources ranking the first within an ecology related body of statements, while the second series resulted in waste recycling ranked atop. More significant changes were seen in topics related to space exploration: in the first series space ranked first by the number of mentions, equally to ecology, while in the second series the overall amount of space related statements dropped from first to ninth position in top ten, yielding top positions to other groups of statements. At the same time, the second series showed significant growth of frequency in statements related to political and social justice, which brought this topic to the second place among the most frequent, as in the first series it was well represented, but was not among the most frequent. The most significant shift between two series was observed in the "Economy" topic, as in the first series there were no frequent statements in this category, while in the second series the full set of specific statements on economy were recorded among frequently expressed traits of the desired future.

4.2. Competencies for desired future comparative analysis

Through the second stage where the objective was to name and group most typical activities needed to develop and support such a world of desired future, the participants logically proceeded to construction of a set of competencies, which are basic for these activities and necessary to develop and support their desired futures. Here we also got a visible intersection between separate groups and the whole series outcomes, which allows us to collect a list of common frequent statements (see Table 3).

Table 3. Frequent competencies for desired future

1st series (2018–2019) unique	Common	2nd series (2020–2021) unique
Communication skills	**Communication skills** Skill to communicate with different worldviews and different languages of self-expression Skill to listen to and hear others Skill to express one's position honestly and clearly Skill to cooperate Skill to negotiate and find win-win solutions Teaming skills	**Communication skills**
Emotional intelligence	**Emotional intelligence** Skill to manage one's	**Emotional intelligence**

	emotions, self-governance Coping skills, resilience Solicitude to one's personal boundaries Empathy, skill of compassion	
Positive thinking		
Cognitive skills	**Cognitive skills** Skill to think creatively, to find new viewing angles	**Cognitive skills** Innovative thinking, skill to color outside the lines
	Logical thinking Skill to analyze and structure copious amounts of data Futures thinking (skill to build alternative models and think of currently impossible)	
Systemic thinking		
	Critical thinking	
Self-organization	**Self-organization**	**Self-organization** Skill to do everything your shoulder on high quality level
	Self-discipline, skill to concentrate Sense of purpose and skill to complete a task	
Self-development	**Self-development** Skill of constantly learn something new Skill of being open and adaptive to changes	**Self-development**
Global awareness	**Global awareness** Skill to take care of environment and every live creature	**Global awareness** Social accountability (skill of being socially active) Skill to create (generate) positive changes
Resource management	**Resource management** Skill to effectively distribute time resources Skill to organize spare time	**Resource management**

	(relax mastery) Skill to lead a healthy life Skill to be independent	
Project management skills Personal talents management skills		
Functional skills	***Functional skills*** *Financial management skills* *Basic medical aid skills* *Foreign languages* *Basic psychological literacy* *Basic legal literacy* *Basic information literacy (data searching skills)* *Waste sorting skill*	***Functional skills***
		Crafting skills
	Job seeking and changing skills *Self-care skills* *Cooking skills* *Math skills* *Basic programming skills* *Practical physics*	
Basic engineering skills		

Among the most needed cross-contextual[3] competencies for the desired future, communication tops the list in terms of frequency of mentions. Within this group of competencies, the six listed above are mentioned the most frequently, being distributed rather evenly. The second place in frequency of mentions goes to emotional intelligence with empathy (in some versions compassion) taking the first place within the group. The third place is formed by a range of cognitive (thinking) skills, where creative thinking and skill to process and structure copious amounts of data are mentioned the most. Initially, after the first series of sessions, self-development competencies were ahead of the self-organization group, but when all the data were collected, the latter bypassed the former by the frequency of mentions, as there was a significant amount of such statements in the second series sessions outcomes. The global awareness group showed high popularity within the second series, so it finally took its place in the shortlist, though related statements were not frequent among the first series, except ecological literacy (Skill to take care of environment and every live creature), which was

[3] The terms cross-contextual and contextual skills are derived from the GEF report "Educational Ecosystems for Societal Transformation" (https://globaledufutures.org/educationecosystems), as I consider them to be more accurate then frequently used "hard skills" and "soft skills".

equally frequent across both series of sessions. The same pattern was observed for the group "Resource management" (competency in organizing, distributing and utilizing personal resources, like time, energy, health).

As for visible shifts in frequency and priority of separate groups and separate competencies, besides mentioned above, I should highlight the following observations, which might be interesting for further analysis:

- positive thinking (skill to stay positive in any circumstances or quickly return to a positive state of mind), which appeared among frequent in the first series, but was nearly absent in the second series
- innovative thinking (skill to think outside the box, to avoid pattern thinking, to seek for unknown perspectives) which showed a reverse trend, i.e., was rarely mentioned in the first series, but appeared among the most mentioned within the "Cognitive skills" group in the second series
- social accountability (skill of being socially active), which was not mentioned at all in the first series sessions, but was one of the most popular in the second series
- personal talent management skill (skill to know and consciously utilize own talents), which was frequently mentioned in the first series and nearly absent in the second series

In relation to the category of functional or contextual skills, I used a slightly different analysis tactic, as it showed a significant diversity in mentions. These were collected under a bit different condition of being repeated more than in five groups across all sessions of the whole research period. I included them in the research results because this set of data is also useful and descriptive in terms of further research on if the most popular existing educational programs really meet learners' developmental intentions, which I'm going to state in the "Discussion" part.

Though it is worth mentioning that financial management skills confidently lead among all frequent contextual skills, being mentioned in nearly 90% of the groups across two research series. Basic medical aid skills (including self-treatment) and foreign language skills hold second position, closely followed by basic psychological literacy (mainly interpreted as the ability to help oneself and others in stressful situations). Legal literacy rounds out the top five according to general calculations, but in some sessions, it was bypassed by basic data literacy (skills to search and verify information).

4.3. Requested innovations in education for desired futures: community viewpoint

During the reflection session at the end of each CLL, we used prospective reflection approach to help participants reimagine their schools or homeschooling communities as prototyping playgrounds for the desired future and asked them to list necessary innovations to be implied now to start prototyping by learning and living "for desired future" inside school community. After I collected and observed all ideas across all sessions, it became obvious that they basically fall into four groups, namely "Environment (physical and digital)", "Rules and protocols", "Approaches and methods" and "(Innovative) curriculum implications". The most frequent ideas were clustered around these groups (see picture below).

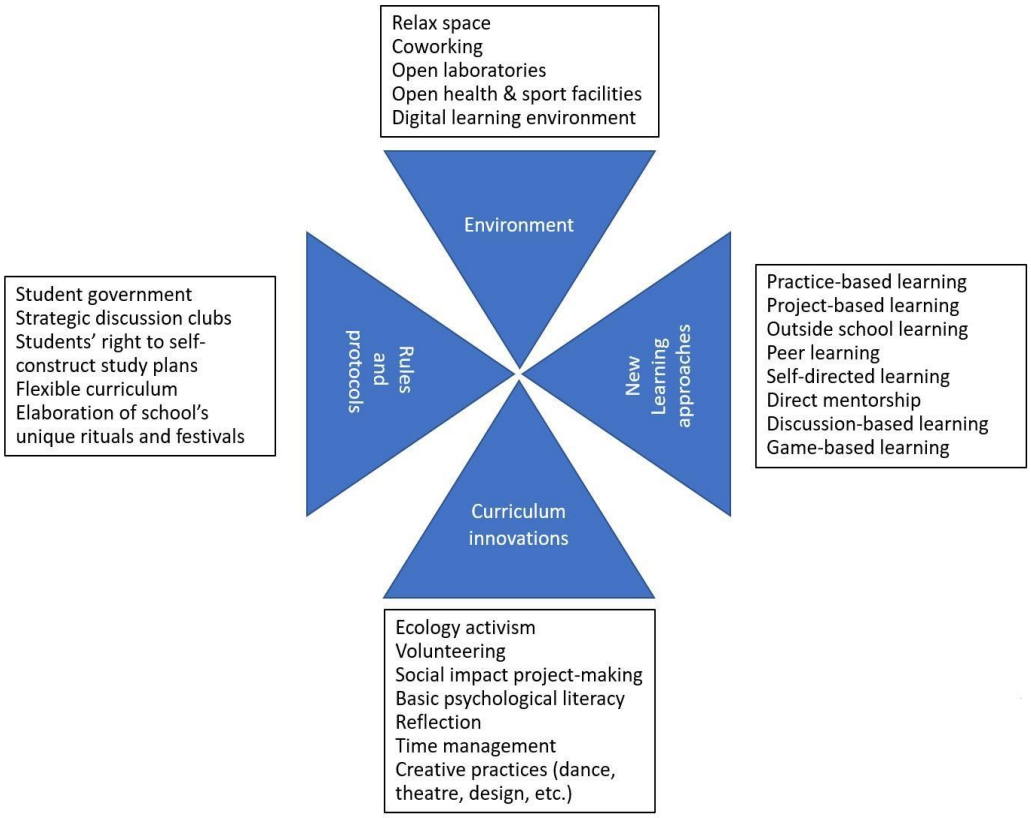

Figure 3. Most needed innovations to develop "competencies for desired future"

Talking about certain figures, "Students' right to self-construct study plans", "Practice-based education" and "Flexible curriculum" (including right to learn from home upon request using school digital environment) ranked atop across two series, with a total number of mentions equal to 32, 25 and 25, respectively. "Project-based learning" and "Direct mentorship" (from practicing experts) also showed high frequency with totals of twenty mentions, which accords well with urge requests for practice-based learning. Deserving special

mention are some proposals for curriculum innovations that turned out to be frequent in the second series but were not identified as frequent in the first series, namely ecological initiatives with seventeen mentions in the second series, basic psychological literacy with eleven mentions and volunteering and charity education with six mentions.

4.4 Requested innovations in education for desired futures: expert viewpoint

As a final step of my current research, I decided to compare what educational innovators and providers of educational solutions would suggest as the most effective ways to develop skills and competencies, which CLL participants named as most needed for their desired futures, with what participants themselves suggested, and to check of there are noticeable gaps in views of school communities and professional opinion leaders, who shape the transformation of educational landscape.

To do this, I invited a random sample of education experts from my social circle who met the following criteria:

- the respondent must have practical experience in conducting educational formats, that is, understand how exactly they work and what are effects caused by the practices that he recommends
- the respondent must have a reputation as an innovator in the professional community

I sent out 35 requests for written interviews and received 25 responses. As an interview, the experts were offered a long list of frequency competencies obtained as a result of the CLL. Under each of the competencies on the list, respondents were asked to indicate the educational solutions they felt were most appropriate for developing those competencies. After the responses were collected, I selected the frequent statements and grouped them according to the same pattern that I used to structure the most desirable innovations in the educational environment and curriculum named by CLL participants (see Figure 4):

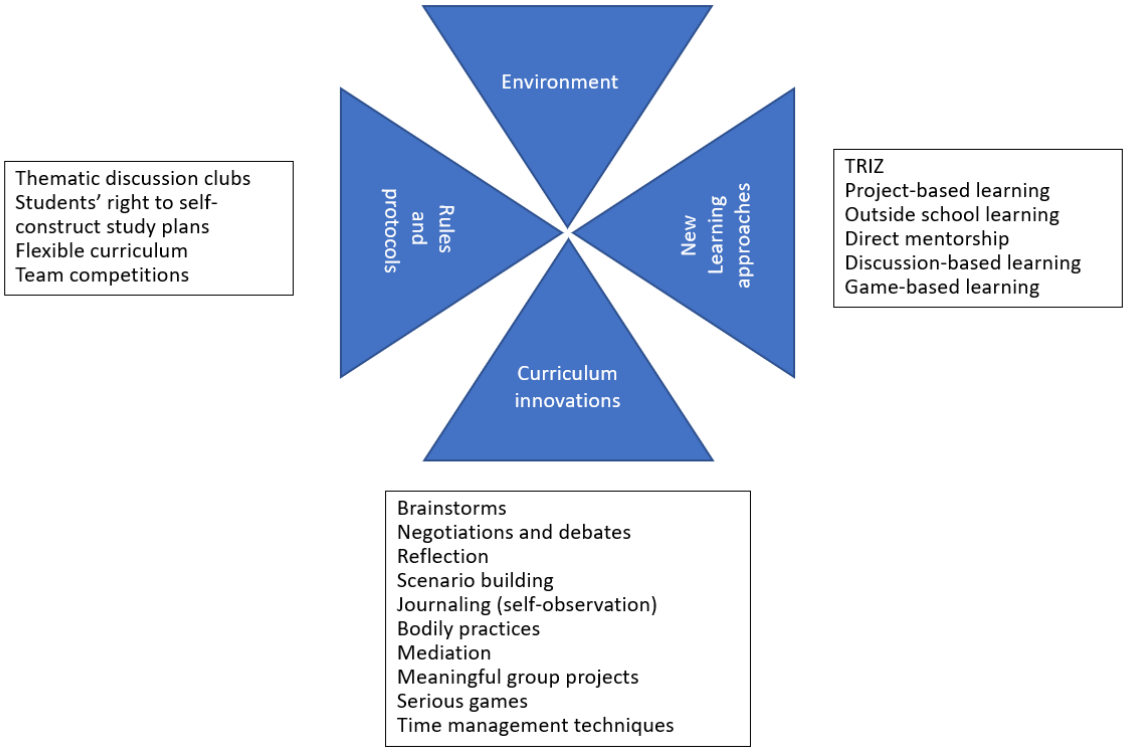

Figure 4. Most needed innovations to develop "competencies for desired future", expert view

To generalize, the most frequent recommendations given by experts referred to different kinds of trainings and interactive formats, including time management trainings, brainstorms and strategic sessions, debates and discussions, serious games, group projects, etc., as well as self-observation and self-development techniques, like journaling, essaying, self-reflection, time planning.

5. Discussion

After 3 years of collecting data through CLL sessions, we gained evidence that a diverse school community is able to produce consolidated image of desired future through procedure of collective thinking and derive meaningful development strategy directly from it, as each session participants, regardless of age and professional level, were able to suggest meaningful implications to innovate school curriculum and management based on their collective desired future vision, as all groups successfully fulfilled the task to trace meaningful educational requests and certain necessary innovations to transform their schools and regional education policies directly from their desired futures traits. After CLL outcomes were collected and structured, a number of school communities, which accepted and passed CLL interventions, have undergone significant changes in their curricula structures and development strategies, for example:

- Termalnenskaya secondary school in Kamchatka, where the majority of students named ecological literacy as a desired core of their curriculum, launched a set of ecological initiatives and transformed into regional ecological learning hub, which now successfully implements and scales up their youth ecology projects.
- school #1935 in Moscow, where cooperation and participatory approach to solving urgent and developing new ranked first among frequent requests, adopted participatory self-management model and launched a school council which includes representatives of students, parents and teachers, and makes decisions on the general functioning and development of the school, solving current problems and introducing innovations.
- private school Dukley Academy in Budva, Montenegro, gained social entrepreneurship as the most desired activity and repositioned itself as youth project hub, completely switching the whole secondary and senior school to project-based learning.
- at Maloyaz rural school, Bashkortostan, the main concern was that children feel disintegrated with local community, which resulted in that group of ninth grade students, supported by school administration, launched a school entrepreneurial hub where every community member could hire students for one-time or part-time jobs, and part of money earned by hub members went to support their school.

If we adjust this observation to the need to reimagine the role and purpose of education for a rapidly changing and hyperconnected world, it gives an interesting perspective of transforming educational organizations into playgrounds for establishing of new social contracts and prototyping of new life scenarios to cooperate for common greater good (UNESCO, 2021), and local ecosystem hubs, playing the meaningful role of community development centers. On one hand, this correlates with shared vision of education's necessary appearance from CLL participants, who require education to be straightly connected to actual life problems and challenges and filled with real-life activities allowing learners to imply their visions to real world, which could be seen from the outcomes of the reflective part of the CLL sessions, where participants talk much about their intention to make education more self-directed and self-governed. On the other hand, this reflects the mainstream of leading education innovations initiatives, like UNESCO Futures of Education Initiative, OECD Learning Framework 2030, etc., as they raise global programs to let students' voices gain power and influence in shaping education.

Two series of large-scale research sessions we have conducted, discovered significant similarities in results, regardless school regionality (rural/urban area; inside Russia/outside Russia) or legal form (state/private; formal/informal), with 36 of 47 frequently mentioned

“competencies for desired future” being the same within all sessions. This allows to support the assumption that if we shift to reinvent schools as future-oriented learning communities, which co-create their development strategies based on their collectively constructed desired futures images, it wouldn’t cause any visible disintegration between schools, nor create obstacles for schools’ interactions and learning mobility. Moreover, it may boost the transformation of educational landscape into a rich variety of learning ecosystems, yet diverse, but not confronting, able to create syntony (Laszlo, 2014; UNESCO, 2021; Hannon et al., 2019), as they would bear many common traits and have certain crossings as prototypes, while using the same educational solutions to prototype these common traits. The diversity of concepts, emerging directly from collective visions of different collective entities acting within the same landscape, may result in a more conscious and engaged approach to educational innovations and reshaping education to meet these diverse needs more precisely (Bolstad, R. & Gilbert, J., 2012).

Analyzing the answers to the question about the competencies required for the desired future and highlighting the general statements of this stage of the study allowed to identify a noticeable gap between what modern students want to learn, if they rely on their vision of the desired future, and what the most part of standard educational programs offer to them. This supports the previous statement that most educational policies and organizations are still implying what is habitual without clearly questioning themselves “what future do we create with our actions”, thus unconsciously building generalized “disowned future” (Stone & Stone, 1989) instead of envisioning desired one. This makes the educational process meaningless in means of empowering students to be the authors and actors in the future world, and educational organizations prove to lose their status of empowering centers. Moreover, the sessions made it clear that externally imposed expected learning outcomes of the most of the state approved programs and learning plans in Russia and other Post-Soviet countries where the CLL sessions were conducted, are at odds with what the students themselves would like to achieve, thus we may assume that for a significant part of youth education perceived as mostly negative experience, not preparing them for real life, preventing them from getting skills they really need and blocking their agency, which causes high level of anxiety and low motivation. This finding on post-Soviet countries situation is quite new, as there are no systemic field research highlighting the problem, but it corresponds well with observations made globally by Big Change Project (Goddard et al., 2019) and HundrED researchers J. Spencer-Keyse and F. Warren (2018) within their large-scale studies on youth attitudes and expectations towards education.

But the question of transforming education goes far beyond changing the standards. What should be brought to discussion among the global educational community, is that the meaning and content of the concept of "standard" itself should change. We cannot shift to a learner-centered approach by balancing between self-regulation inside learning tasks and external expected outcomes dominating over learners' intentions and concerns, and we cannot shift to future-focused learner-centered education if these results and outcomes are not created by learners based on their desired futures vision. If we want learners to be agents of their own learning, and the learning itself to be meaningful and adjusted to what learners really wish to create in the world with their learning, we should shift to interpreting the "standard" concept as what a certain learning community collectively decided to consider as expected learning outcomes based on their vision of desired future. These very decisions should become unique agreed standards for a certain learning community until a community decides to renegotiate them, thus establishing the educational process and environment adopted by a community as a fair social contract. And, again, the high level of coherence between different communities observed in the third stage of CLL sessions on "key competencies for desired future" and reflective stage, where "necessary innovations to reimagine education for the desired future" were created, prove that this independent "learning standards" creation would not cause disintegration between different learning communities and fragmentation of educational landscape.

The persisting reluctance to give school communities more freedom to decide what and how to learn in today's world led me an idea to compare what educational professional from Russia considered to be innovators, mainly working in private and alternative educational organizations or as independent experts in educational innovations, recommend as best practices to develop such competencies "for desired futures" to what CLL participants required as practices and conditions to develop such competencies. This comparative analysis led me to the following observations:

- participants of CLL sessions attach foremost importance to the environment (certain physical and digital solutions) as a means of developing new competencies, whether the expert community has not mentioned a single environmental solution.
- participants of CLL sessions frequently name self-learning and peer learning as tools to develop many necessary competencies, like resource management (e.g., time and vital energy), empathy, communication and cooperation, self-development and self-organization, while in expert surveys self-learning was mentioned only once as a means of improving self-development skills (learning to learn).

- participants of CLL sessions frequently consider different forms of in-school self-organized activities, like student government, self-organized discussion clubs and supplementary learning clubs to be especially useful to support learner's agency and upskilling, while in expert responses all suggested activities were prepared and expert-driven.
- when it comes to coincidences, both CLL participants and expert group frequently mentioned project-based learning and different cooperative project activities as basic to develop many of these competencies, as well as practice-based learning and outdoor learning (learning while traveling), adding direct mentorship with real-life experts as another point of intersection.

Significant differences between what school communities and educational experts assume to be the most needed innovations for education, raise another question - do we possess any innovative practices among those suggested to schools by providers which may be considered to have systemic change effect? Though we observe a huge number of educational solutions which can be to come extent attributed to future-oriented education on the Post-soviet landscape, we cannot confidently call any of them systemic, as we are lacking investigation in what is expected and would be appropriated by learners themselves, as it correlates with their vision of "learning for the future". Adding the fact that mentality differs significantly from region to region, we end up with a sad conclusion that nearly not a single innovation can be considered to really have a systemic effect. The Wave is aiming to gather the first bunch of data from different regions' active (ready to accept innovations) societies and to analyze it to extract effective innovations and reveal "requests with no answer".

These observations highlight the importance of data collected through CLL sessions not only for school communities and policymakers, but also for educational innovators and changemakers, and justify the need for more sessions on a larger scale, as they allow to launch innovations from the common ground of what expert community considers to be progressive and what school communities request as important and thus are ready to accept and exercise. This, on one hand, may increase the rate of adoption and diffusion of innovations, and on the other hand would make these innovations more learners-focused and futures-focused.

6. Limitations and further development of the study

The first major limitation of the approach is that CLL sessions are designed to attract mainly those who are willing to think about future and perceive this to be important for their

life planning and goal setting, i.e., people with developed FTP (Zimbardo & Boyd, 1999), who experienced future-oriented thinking and strategizing before taking part in the sessions, though not necessary being specially trained to do that. This narrows down currently collected data to significant predominance of Future-positive (Mello & Warrell, 2015) type of beliefs and preferences toward futures. Occasionally we got a bunch of statements expressing different beliefs, as small part of participants who took part in our sessions were less motivated to futures thinking and got into sessions accompanying their friends, students or children, so I can witness differences between intentions in different FTP lengths and orientations, which is to be further investigated and taken into account, as it would definitely influence the final picture within a certain school community and on larger scales (city, region).

And here I would like to mention the connected limitation, which is lack of opportunity to investigate fears and cliches about the future and structure the main disruptions between desired and expected, which, in its turn, may lead to a more meaningful and multidimensional work with the topic of raising learners' awareness and consciousness. This is now a fashion theme of education, but it still lacks clarity and complexity due to self-leadership, mindfulness, entrepreneurial thinking programs majorly ignore the fact that ability to expose agency is strongly dependent on personal time-space attitude and self-perception within time-space context (see Figure 5). This leads to a situation when the outcomes we get are adaptive, not agentic, apparently making a person resilient within current contexts, but still not equipped with the ability to change the context for the sake of desired images.

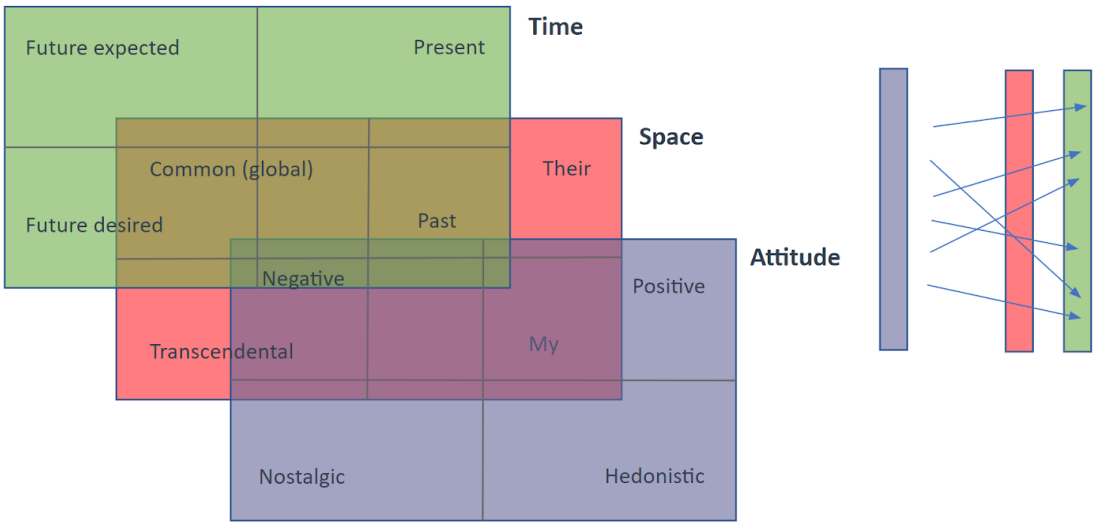

Figure 5. Self-placement within social time-space context

The next limitation refers to relative cultural homogeneity of respondents, which may affect the results and conclusions, as culture plays a significant role in how time perspective is developed in person (Jones, 1988). By now, we have obtained first cases in Kazakhstan, where 70% of participants were Kazakhs, with different native language and culture, Uzbekistan, with 80% of participants being ethnic Uzbeks, though all of them spoke Russian, and Montenegro, where 100% of participants were Serbian teens from rural schools who never learned Russian language and been affected by Russian culture. These cases, which showed significant similarity to what was collected in Russian communities, make it possible to assume that there are some global desired future traits and beliefs that would sound within any cultural background and may form the basis for global programs of future-oriented education, though the research should be continued outside Russian-speaking communities to collect more data, firstly in order to check if communities based on other cultural codes show any significant differences in desired futures traits and educational requests based on them, and secondly in order to identify and explain cases of deviation from the overall picture.

Acknowledgements

I would like to thank the following people, without whom I would not have been able to complete this research, and without whom I would not have made it through my master's degree!

My supervisor, prof. Emanuele Bardone, for his support and encouragement.

My friend and colleague Pavel D. Rabinovich, who organized negotiations with schools and found grant support which allowed to conduct the second series of CLL sessions.

Charity Foundation "Education for Society" for grant support of the second series research.

My colleagues from the Navigators society who facilitated the sessions of second series research.

Author's declaration

I hereby declare that I have written this thesis independently and that all contributions of other authors and supporters have been referenced. The thesis has been written in accordance with the requirements for graduation theses of the Institute of Education of the University of Tartu and is in compliance with good academic practices.

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Appendix. Instruction for CLL host and facilitators (offline version)

CLL is a future-based collective thinking method which may lead a class or a school community to insights about their personal and collective development based on their vision of desired future. Datasets and frameworks constructed during the basic three stages of CLL may be used as preparatory phases for different further strategizing and navigating activities such as construction of personal learning paths, creating group projects and elaborating certain school reframing, as it shown on general CLL scheme on Figure 6.

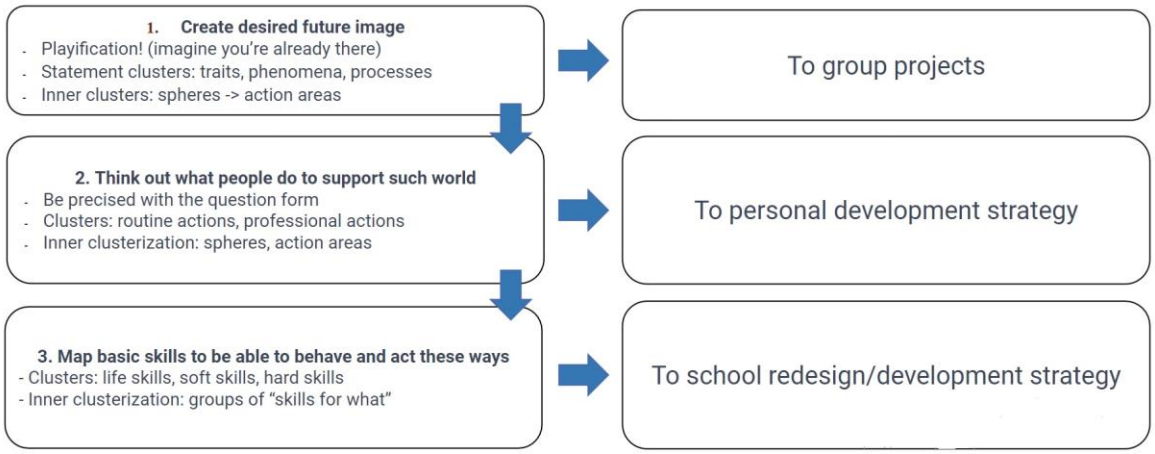

Figure 6. General CLL structure and its outcomes

Before conducting a CLL session, please divide the participants into groups of 4-10 people. The groups may be mixed, but according to our experience, people feel more relaxed and express themselves more sincerely when working with companions of the same age, so it is better to organize teens and adults in separate groups. Please manage to equip each group with four flipchart sheets (one for each stage) and sticky notes.

To guide the session in a proper way, please carefully read the following instructions.

General instruction for host:

1. Before the session, the host should introduce the session participants to the goals of the session and the sequence of stages. There is no need to reveal the content of each stage in detail, it will be enough for the participants to have a common understanding of the logic of the upcoming event.
2. At the beginning of each stage the host describes the detailed content and requires outcomes of the stage by the scripts given below.

3. Host manages the general timeline of the session, in-stage parts are guided by facilitators.
4. After each stage the host guides the mini-conference, inviting each group to report their results, and collects the common statements on separate sheets.
5. Host DOES NOT express his/her opinions, neither gives suggestions about exact wording of the statements.
6. After the conference of the final stage, the host draws attention to common statements he/she collected and offers questions for the next step (e.g., construction of personal learning paths, creating group projects or elaborating certain school reframing) according to the community's actual needs.

General instruction for facilitators:

1. Facilitator does NOT express his/her opinions.
2. Facilitator DOES NOT organize or provoke discussions, except the finalizing part of each stage, and prevents judgments of statements, recalling that every statement is equally valuable.
3. Facilitator proposes a taxonomy option for an array of statements after the drafting part, but puts it forward for discussion, the discussion does not exceed 3 minutes, if there are no more reasonable proposals, he/she takes his/her own.
4. Facilitator monitors clarity of the participants' statements, if too generalized or unclear statement appears on the screen, facilitator reads it aloud and invites its author to write in a chat or say in a voice what was meant.
5. Facilitator keeps the internal timing of each stage.
6. Facilitator holds the exact wording of the question and reminds it to the participants during the drafting process.

Notes to the moderator.

1. Please emphasize that when formulating a statement, the participant is not limited by anything, but chooses exactly what is important to see in the desired future. Phenomena, processes or activities should not be an improvement of the present, they exist in the desired future world, because the participant wants to see them there.

2. Ask participants to avoid comparisons with the present, such as "became more…" / "became less…". Negative statements (with "not") are acceptable, but only as facts,

but not changes / improvements - for example, "people do not fight among themselves" or "there is no visa regime between states" are ok.

Instructions for host and facilitators by stages:

Stage 1. The world of the desired future.

Task formulation (read by host). Imagine that you are in the not-too-distant future - that is, this world is quite recognizable. But, moving and observing, according to certain signs (phenomena, artifacts and processes that you observe), you understand that this is exactly the world in which you dreamed of living. You look around and joyfully realize that, yes, this is the best world for me, the one I want to live, develop and work in. Now please take sticky notes (please open form 1, if the session is conducted online) write down your findings/observations that make you understand that this is the world of your desired future.

Stage guidance (provided by facilitators).

1. Facilitator announces a 20-minute slot to make the statements and asks each participant to write one statement on one sticky note, then place it on a sheet in a random order. *Before the drafting time starts, it is important to emphasize that we are talking about the desired and optimal future for the participants, and not about the most probable or habitually pessimistic scenarios.*
2. At the end of the drafting time, the facilitator invites all participants to look at the entire array of statements and suggests clustering them. *Possible options for clustering: 1) generalized areas (e.g., ecology, economics, etc.); 2) this exists in the present, there are weak signals witnessing it in the present, there is no such thing in the present. The taxonomy is discussed with the participants from the position "how such clustering can be useful to us".*
3. Statements are grouped into clusters, headings added to each. While participants group statements into clusters, the facilitator highlights repeated statements, i.e., removes duplicates, and writes the number of repetitions next to the sampler sticker. Grouping takes 20 minutes.
4. In 10 minutes, the facilitator sums up the outcomes, drawing attention to repeated statements, and emphasizing the most different statements, which may seem controversial. Along the way, the facilitator may ask the question: is it possible for these two phenomena or processes to exist in the same world at the same time . The task is to

remove the contradictions and identify the possibility of different scenarios to emerge simultaneously.

Stage 2. Activities of desired future.

Task formulation (read by host). You saw now how this world of your desired future is arranged, and you thought about the way of life and activities of the people who inhabit it. After all, all this that you observe is created by them, as they choose certain professions or simply behave in a certain way. Please write two types of statements - the professions that are most characteristic of this world and allow to keep it the way it is, and the usual behavioral practices of people, what they do in everyday life to keep the world like this. For example, if there is no waste at all in the world you are in, it is due to both professionals who work with waste recycling, and people who are used to moderate consumption and sorting and recycling of all waste.

Stage guidance (provided by facilitators).

1. Facilitator guides the same timeline as in stage 1.
2. Facilitator asks participants to use sticky notes of two exact colors, one for professions, and one for everyday habits.
3. Facilitator emphasizes that the utterances of the second stage should be based on the utterances of the first one, and not just be the result of free dreaming, as it was in the first stage.

Stage 3. Skills and competences for desired future.

Task formulation (read by host). If in your world of the desired future people are doing such things, as you described during the previous stage, they definitely have skills allowing them to do this. Of course, every profession has some special skills, but you also need basic knowledge, skills and abilities just to lead such a lifestyle, to maintain such a world. For example, if everyone in your world is actively traveling, then the ability to easily move from place to place is inherent in everyone, and if the majority works remotely, they are definitely doing well with digital literacy and self-organization, etc. Now, please elaborate the basic skills you think to be necessary for a person to lead a full happy life in the world that you have created, and to do things that are most characteristic of this world.

Stage guidance (provided by facilitators).

1. Facilitator follows the process described in the first stage.

2. During the clustering and summary parts facilitator refers to previous stages outcomes and asks if any mentioned skills and competencies are redundant for the world constructed, as they have no use in the processes and events described earlier, or if some important skills are missing, to encourage participants draw the whole non-controversial picture of the skills for their particular desired future.

Stage 4. Innovations to prototype the desired future in the present (used to prepare ground to launch transformation of educational organization).

Task formulation (read by host). The future is cool, especially because you are lucky to get exactly where you dream of, but it's time to go home. And when you returned, of course, you started thinking, what can be done now to bring this future come true. Well, of course! The thing is what these people know and what they are able to perform - that's where we need to start from: what and how to learn to be like them. Please think about what could be changed or implemented in your school today so that you can start learning today what is needed in the world of your desired future, and thus to form the habits that allow you to live such a life right now, not waiting for the future to come. Write down your thoughts on sticky notes and post them on a shared sheet.

Stage guidance (provided by facilitators).

1. Facilitator follows the process described in the first stage.
2. During the clustering and summary parts facilitator suggests a group to choose one innovation they are eager and able to bring to life themselves.
3. Facilitator guides the discussion to choose one particular innovation and to make participants realize why they want to do this.
4. Facilitator helps a group to prepare a pitch talk to present the desired innovation, its value and possible changes it would bring to school life.

After-session reflection questions

After the session each facilitator guides a reflection circle in his/her group to assess how participants feel, what insights they collected during the session, what difficulties they experienced. Facilitator is suggested to use following questions:

1. How do I understand, what was it about?
2. What key thoughts and insights I appropriated during learning?
3. How was the communication organized, and was it comfortable for me?

4. Did I experience any difficulties during the session, what they were, and how I coped with them?
5. Did I experience any bright feelings during it, and what they were?
6. What would I do in a different way if I organized the session?

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Lidiia Kremneva

31/05/2022

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