Participatory Design of New School Learning Environments

O. S. Ostroverkh, A. V. Tikhomirova

Oksana Ostroverkh, Candidate of Sciences in Psychology, Associate Professor, Institute of Economics, Management and Environmental Studies, Siberian Federal University. Address: 79 Svobodny Ave, 660041 Krasnoyarsk, Russian Federation. Email: ostrovoksana@mail.ru (corresponding author)

Anna Tikhomirova, Lecturer of the Individual and Group Psychotherapy Department, Faculty of Consulting and Clinical Psychology, Moscow State University of Psychology and Education. Address: 29 Sretenka St, 127051 Moscow, Russian Federation. Email: nutih@mail.ru

Abstract

This article looks into the legal and psychological aspects of child and youth participation in discussions and decision-making on issues relating to their lives and gives an overview of the current trends in participatory development.

Participatory design is interpreted within this study as activities that result in participatory action of children in the educational process. Participatory action is characterized in its intentional component and its persistence (reflected in searching for ways of bringing the intention to life) by initiative, consciousness, autonomy and responsibility. Participatory design is regarded as a tool for creating conditions to develop adolescents' subject position.

A new method of engaging children in participatory design of learning environments is offered and implemented in the study. The article describes successively the steps of method implementation and its testing within the framework of Pedagogical Design Studio's activities.

> "The distinctions I am making among three different kinds of culture—
> postfigurative, in which children learn primarily from their forebears,
> cofigurative, in which both children and adults learn from their peers,
> and prefigurative, in which adults learn also from their children—are
> a reflection of the period in which we live."
> — *Margaret Mead, Culture and the World of Childhood, 1988*

How do we reorganize the school to meet the demands of human beings preparing for life in a rapidly-changing world? In the context of searching for new ways of secondary education development, we suggest changing the approach to design of learning environments by adjusting it to the fundamental principles of cultural-historical psychology and activity-based learning. Specifically, we are talking about the role of children in the design of learning environments that will contribute to their development. Should a child take active participation in instructional design, and will this participation help them develop a conscious and responsible attitude toward their learning? In our view, society is now facing an urgent need to give a positive response to this question and redefine the boundaries of young people's responsibility for their education by providing them with more decision-making opportunities. The widespread occurrence of children's participation in social projects dictates the need for exploring a new approach to participatory design of educational institutions and processes.

This article looks into the possibility of participatory design of learning environments that would promote subject positioning in adolescents. The concept of participatory design is elaborated, on the one hand, through the legal aspect of minors' participation in social processes, and on the other hand, through the psychological patterns of adolescent development.

1. Legal Aspects of Participatory Design

The legal aspect of participation implies deciding whether or not children and adolescents have the right to discuss and make decisions on vital issues affecting their lives. It was already at the beginning of the 20th century that a new understanding of childhood and a new attitude toward children as full members of society began to emerge. Publication of Ellen Key's book *The Century of the Child* in 1909 is recognized by Western childhood researchers as a tipping point in society's views on children's rights [Key 1909]. Initially, the children's rights movement began as an effort to protect and enhance the life of children who were disadvantaged or exposed to pressure, abuse or exploitation by adults. Gradually, however, the adult world's attitude to children and childhood began to change, in particular as a result of works and efforts produced by Janusz Korczak, Maria Montessori, Eglantyne Jebb, Astrid Lindgren and many other researchers, educators and social and cultural activists. Eventually, the idea that children and

their opinions should be respected and that children can decide for themselves what is in their own best interest was consolidated in the 1989 Convention on the Rights of the Child (CRC).[1] The CRC reflects the shared position of researchers, international organizations and States with regard to children's rights and States' obligations to respect those rights. Attitudes toward the implementation of such rights and obligations are not homogeneous across the world. The global community is particularly disunited and wary about Article 12, which establishes the child's right to participation and the State's obligation to "assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child."

Most often, debates erupt over children's unpreparedness for discussing serious matters due to their lack of competence, vulnerability and exposure to adult influences. Recognition of the concept of children's right to participation would bring about "a dramatic change in the manner in which most families, communities and societies are used to functioning. In general, most of us were not, and are still not, prepared to face the immense implications of accepting children as co-actors in our world." [van Oudenhoven, Wazir 2010:108]

Promotion of participatory design in education requires, on the one hand, proceeding from the child's right to participation and society's obligation to accept and organize such participation, while on the other hand making allowance for challenges associated with society's relative readiness to implement the said right. As the legal framework of children's participation in discussions and decision-making on issues affecting their lives is being developed, theories and practices of such participation emerge, including methodologies, designs, taxonomies, practical tools, scientific research and case studies. In 1992, Roger Hart proposed a "ladder of participation", in which he made a distinction between tokenism (the three bottom rungs) and genuine, or true, participation. Tokenism is when children's participation is performative and staged by adults, while the "child initiated, shared decisions with adults" type of participation is placed by Hart at the highest rung of the ladder [Hart 1992:8]. Hart's Ladder of Participation received a lot of criticism, and there have been more recent approaches to structuring and classifying types of children's participation. For our purposes, however, it should be emphasized that Hart focused on the value component of adults' attitude toward youth participation, which was found to be the most powerful inhibiting factor in the present study.

International organizations play an essential role in the distribution and promotion of participation practices. The movement has been ac-

---

[1] http://www.un.org/ru/documents/decl_conv/conventions/childcon.shtml In Russia, the Convention on the Rights of the Child was ratified on June 13, 1990 by Resolution of the Supreme Soviet of the USSR No. 1559-I.

tively supported by the United Nations Children's Fund (UNICEF), particularly in situations relating to child safety, exploitation and neglect. In developing countries, children are engaged in political processes and declare their rights and interests at the national level, making governments "listen to children's voices". "The most positive outcome of these multiple initiatives, from every region in the world, is that they do provide powerful testimony as to the capacities and desire of children to be more involved. There is now significantly greater recognition of the expertise and wisdom that children contribute to policy making." [Lansdown 2010:22] The Western world has also been making great progress in participatory development by paying a lot of attention to analysis of children's involvement in community governance, education, social welfare and healthcare [Percy-Smith, Thomas 2010], the results being reflected in analytical reports published by the European Commission.[2] Not only practical but also methodological experience has been accumulated by the global community: research has been pursued to identify the key principles and elements of children's participation in social life and to analyze the most successful practices and technologies as well as participation assessment instruments.[3] Advances have been made in Russia as well, including the involvement of children in non-governmental organizations' research and practice [Podushkina, Tikhomirova, Shamrova 2016], the development of guidelines on promoting child participation in community policy-making in 2014,[4] and the upcoming publication of a textbook on child participation.

For the purposes of our study, of utmost interest are participation practices that are directly associated with education and instructional design. There are multiple examples of involving children in school decision-making in Russia as well as in other countries.[5] As a rule, these include participation in school councils, reconciliation services, mass media, school interior design, etc.[6] All of these practices constitute

---

[2] Evaluation of Legislation, Policy and Practice on Child Participation in the European Union (EU). Research Summary. Available at: https://op.europa.eu/en/publication-detail/-/publication/f425176f-cc2c-46bd-8a3a-65d958fff780

[3] Council of Europe Child Participation Assessment Tool 2016. https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=09000016806482d9

[4] Kalabikhina I., Kuchmaeva O., Lukovitskaya E. et al. (2014) *Metodicheskie rekomendatsii po razvitiyu uchastiya detey v prinyatii resheniy, zatragivayushchikh ikh interesy, v munitsipal'nykh obrazovaniyakh* [Methodological Recommendations on Promoting Children's Participation in Community Policy-Making Around Issues Affecting Their Interests]. Available at: https://istina.msu.ru/publications/book/7660992/

[5] Evaluation of Legislation, Policy and Practice on Child Participation in the European Union (EU). Research Summary. Available at: https://op.europa.eu/en/publication-detail/-/publication/f425176f-cc2c-46bd-8a3a-65d958fff780

[6] Semya G., Kalabikhina I., Shvedovskaya A. (eds.) (2018) *Doklad po itogam monitoringa effektivnosti realizatsii Natsional'noy strategii deystviy v interesakh detey na 2012–2017 gg.* [Report on Monitoring the Effectiveness of Implementing the Na-

an important experience, but they are instituted within the existing schools conceived and set up by adults. We wanted to find instances of children or adolescents being involved in the design of school and learning processes. Studies of this kind do exist in architecture, specifically school design. Henry Sanoff—American researcher, professor of architecture, co-founder and developer of participatory approach—authored a number of design projects for cultural centers, public spaces, schools and universities. Sanoff considers user participation in design to be a critical factor affecting success of the whole project because co-participation is what makes people co-authors and co-owners of the project as well as of the prospective space [Kiyanenko 2010]. In his book *School Design*, Sanoff analyzes examples of student and parental involvement in design of learning environments across different countries, describing the technology of participation. He believes that involvement of students in school design is a promise of their future responsible attitude toward school as a physical space and an institution, participation "has a didactic effect leading to increased social awareness, and a generally higher intellectual level of school community" [Sanoff 2017:418]. Analyzing participatory school design practices, Sanoff shows that they benefit not only the designers—by rendering the project more successful, and not only the society—by increasing its levels of democracy and consciousness, but students as well—by raising their levels of responsibility and involvement in school life. One of the most significant effects of participation is the sense of ownership, which students develop when they can contribute to design of their learning environment and which, in its turn, has an impact on their learning engagement [Walden 2009]. Involvement in the process of creating their own learning environment becomes the foundation for subject positioning, when a student comes to perceive themselves as an actor who has set up a place for their own learning process. This self-perception as an actor has positive effects on the quality of learning. Youth participation in design of school as a physical space, described by Sanoff, is a major step toward participatory design of learning processes.

2. Psychological Rationale and Psychological Significance of Participatory Design

Educational design is becoming the foundation for new forms of adult-child interaction and thus requires the introduction of new methods and tools in education that will foster the development of children's subject position at specific stages of development [Gromyko 2018; Rubtsov 1998; 2008; Slobodchikov 2010].

tional Action Strategy in the Interests of Children for 2012–2017], Moscow: Federation Council, Vol. 2; Karonozova L. (ed.) (2014) *Shkol'naya sluzhba primireniya i vosstanovitel'naya kul'tura vzaimootnosheniy: prakticheskoe rukovodstvo* [Reconciliation in Schools and the Restorative Culture of Relationships: A Practical Guide], Moscow: MOO Tsentr Sudebno-Pravovaya Reforma.

Participatory design provides opportunity for discovery and generation of a new semantic field of action, a new space for one's own development. The words "participation" and "own" are key to this concept; "unlike with classical mediation, it is not the teacher but the learner who must initiate, or at least co-initiate, trying of a new field of action" [Elkonin 2010a:120]. Boris Elkonin [2010b:222] describes students' autonomy and initiative as a measure of their subject positioning, specifically their "participation in the learning process". In this case, participation is about devising one's own modes of action in situations requiring such action.

Participatory design plays an especially important role in adolescence, the period characterized by human being's growing interest in themselves and their external and internal characteristics as well as a rapid development of self-awareness. Unfortunately, the processes of growing up and learning are not correlated in modern school, and progress in learning does not serve as a measure of adulting [Froumin, Elkonin 2010]. The school does not provide children with "places" for growing up, which results in a protracted crisis of adolescence [Polivanova 1998]. A hypothesis put forth by Polivanova suggests that design is the leading type of activity in adolescence as it leads to a new developmental accomplishment: participatory action as a self-initiated and autonomous action. "By design activity, I understand that interconnection of intention and realization in which the actor, modelling and experimenting with reality in a holistic, artistic form, discovers the connection between the situation of action and their own states and experiences. The center of this interconnection is the sphere of human relations" [Ibid.:16]. When adolescents in school settings can produce their own participatory actions, i. e. generate projects and bring them to life, conditions are created for turning performance into trying and therefore for a comprehensive development in adolescence [Rubtsov, Ivoshina 2002]. In participatory design, adolescents can generate projects and persist in completing them: articulation of ideas, sympathy, empathy, acceptance or rejection are forms of intimate interpersonal communication in which adolescents discover the relation between their own state and the possibility of action. By participating in design, adolescents show initiative for changing the situation, i. e. they adopt an active and deliberate stance which is an indicator of subject position [Zaretsky 2014]. In our view, subject position is primarily characterized by autonomy and responsibility, which manifest themselves as adolescents' purposeful persistence in their idea throughout its implementation—and this sort of experience is provided in participatory design.

Therefore, we suggest that participatory design is an activity that leads to adolescents' participatory action in the learning process. Participatory action is characterized in its intentional component and its persistence (reflected in searching for ways of bringing the intention to life) by initiative, consciousness, autonomy and responsibility. As

mediators in participatory action, adults make the idea and the implementation "meet", thereby creating conditions for the development of subject position in adolescents.

Participation in practice has moved far ahead of participatory action research and its interpretation recently. Researchers, practitioners and policy-makers believe that it is still a long way to go to elaborating a well-grounded scientific approach to participatory design [Percy-Smith, Thomas 2010]. Promotion of participation practices will allow looking deeper into the participatory approach in education, describing it from a psychotechnical perspective, substantiating its psychological significance, and evaluating its possible contribution to the development of subject position in children and adolescents.

A new method of engaging children in participatory design of learning environments (PDLE) is offered and implemented in the present study. The PDLE method can be used for designing a real learning environment as well as for promoting subject position and participatory action in youth. Two outcomes are achieved as a result of participatory design of a learning environment of the "ideal" new school. On the one hand, adolescents generate ideas, bring their initiatives to life and feel responsible for school functioning; on the other hand, they contribute to changes in the school environment.

Modern schools offer few forms of adult-child interactions fostering adolescents' conscious attitude to learning. The participatory design method developed in this study is aimed at alleviating this shortage and can be used for involving young people aged 11–17 in design of learning environments and processes. Since construction of an effective learning environment requires participation of all stakeholders, parents and teachers are invited to participate, too.

3. The PDLE Method

The method proposed here uses a step-by-step algorithm based on the steps design procedure [Zaretsky 2002]. When explaining the concept of design to adolescents, we describe this activity metaphorically as planning a route from A to B. In route planning, we need to understand:

- What A is and why we want to leave it;
- Where we want to arrive (description of B);
- The terms and requirements that should be satisfied and applied to the route.

That is, design activities can be represented as "description and preparation of a route from A to B while meeting specific requirements".

Student work is structured in the following order:

1. Self-determination. Discussion of students' personal interest in participation: the value of taking part in design of a learning envi-

ronment, the reasons for wanting to participate, and the aspects of the design project that are of most interest.

2. Analysis of the existing situation (description of A). At this stage, it is vital that the group remain on a constructive track to prevent the discussion of what is wrong with the school today from transforming into a stream of negative emotions. What should be done is to state specific facts, which can be used as a trampoline for working out the necessary changes. This stage can also be used for pre-design research, which includes media content analysis, surveys, project resource analysis, etc.

3. Description of the desired situation: what the new learning environment should be like (description of B). This stage involves talking about specific, tangible characteristics and success criteria to assess whether the desired outcome has been achieved. Adolescents should be involved in research at this stage as a way to answer the question about the target audience's vision of an ideal school.

4. Problematization as a point of entry to the researcher and author position is the most challenging stage of design which requires critical thinking. As soon as the key concepts have been defined, it is time for setting the problem question and finding associations among the concepts. The problem question here is, "How to get from A to B without losing anything that is valuable and important to us?" The challenge of problematization consists in drawing from situation analysis not only the facts describing the situation but also the underpinning values. And this problem question is key to the project as it implies searching for new ways of solving the problem without losing meaning or value. The lack of such problem question always leads to choosing familiar but often irrelevant modes of action. In "adult" design practice, one comprehensive problem question is formulated for the whole project, embracing every tiny detail from situation analysis. With youth, a simpler version may be to build the problem question around the A-B dyad which matters the most to them.

5. Search for ways and methods of solving the problem. This stage involves describing what exactly can be done and which steps can lead to the desired changes. For this purpose, it may be useful to go back to stage one and run the self-determination phase again to understand how one's interest has changed and what new ideas have emerged after analytical work. This stage also includes project resource analysis and project sizing.

Progressive execution of the steps described above allows adolescents to come up with a well-founded, well-considered project idea and proceed to planning specific activities associated with project implementation.

The role of an adult in participatory design is that of a mediator who helps young people generate ideas and discuss ways and meth-

ods of bringing them to life, thereby contributing to the development of adolescents' subject position, meaning a conscious and responsible attitude toward what they do.

4. Testing the PDLE Method within the Framework of Pedagogical Design Studio's Activities

The PDLE method proposed in this study was used in participatory design of a new learning environment within a studio based on the ProP-SY Professional Orientation Center (Moscow State University of Psychology and Education). Design activities were carried out between December 2019 and April 2020 and involved training sessions, gameplay, discussions and practical research. All in all, there were 12 meetings with adolescents and two group discussions with their parents. Each meeting was attended by 4–15 school and college students aged from 12 to 17, of whom seven were present at all times. A friendly and respectful climate was maintained at the meetings: the 12-year-old and 13-year-olds engaged actively in discussion and had their opinions considered, while senior students tried to make their messages clearer and explained their ideas patiently. Responsibilities in the group came to be divided: it became clear who was concerned more about what, who was ready to speak and tell parents and other adults about the group work results, and who preferred taking responsibility for other aspects of work.

At the first two meetings, we wanted to understand the value and motivation behind young people's participation in school design, find out what they think makes an ideal school and how they understand the main school processes, and discuss the possible prospects of participatory design.

We told the youth about our plans and our desire to design and create a new type of school and shared our doubts about adults' ability to design a school for children without child participation. We also discussed with students what we did not currently like about the school, what the school of the future should be like, and what we could do to make it a reality. After that, everyone interested was invited to take part in school design, and rules and procedures of further work were agreed upon.

Every subsequent meeting started with reflections on emotional states and discussion of items on the agenda and ended with another portion of self-reflection and a summary of group work results.

Cooperative work with adolescents gave rise to a metaphor of a ship being led by a crew which is unhappy with their life at "A" (each member may have their own reason for being unhappy) and is trying to get a sense of where and how they should sail. We agreed upon discussing first of all what was wrong with "A", i. e. the school at its current state. Next, we would figure what B should look like, mostly by describing expectations from the school. Finally, we would work out the rules, principles and terms that should be observed in order to achieve the desired outcome.

The metaphor of sailing on a ship turned out to be highly understandable and was internalized smoothly by the group; it was easy to go back to this metaphor in group work self-reflection sessions to understand where we were and where we should go next.

4.1. Analyzing the Existing Situation: Description of "A"

At this stage, the task discussed with the participants was to describe specific phenomena characteristic of the current situation at school without lapsing into negative emotions. In our view, adolescents did an excellent work and produced a highly specific list of problem areas.

The brainstorming session set up to elaborate and generalize the selected characteristics involved only school and college students (seven participants). The process was facilitated by an adult who did not contribute to the content of discussion.

The most important problems identified by young people were as follows:

- Lack of focus on children's individual needs and attention to their personal values;
- Pressure and coercion in student-teacher relationships. Adults perceiving themselves as superior to children as if they were "carriers of truth" and treating students "as objects";
- Formalized learning processes, tedious and dishonest practices;
- Overall system rigidity;
- Human needs being unmet by the school environment.

4.2. Articulating Expectations from School: Description of "B"

The group discussion of what makes an ideal school was conducted using the brainstorming technique, resulting in the following list of criteria:

- Physical space (cozy; nice; fancy; tasty);
- Climate and values (non-authoritarian; non-violent; freedom; intercommunication and dialogue among students, teachers and administrators; cooperation; a place one would want to return to; participation; boundaries; an environment for self-expression; my own decisions about my own life; rules; all students may decide what school life should be like; free entry and exit; diversity and mutual understanding; easy communication; toleration; accept one another);
- Content (the school teaches independent thinking; the school teaches consciousness; responsibility as a goal; individualized approach and focus on personality and personal needs; self-reflection skills and a place for reflection; balance among knowledge, ability to apply it (competencies) and personality traits; the school teaches critical thinking; soft skills; giving the joy of learning; not occupying the largest part of one's life; a lot of things should be outside of school; grades are not the goal);

- Workers (teachers should be people from the real world, researchers and practitioners).

4.3. The Good School Performance Study

During situation analysis, adolescents acted proactively and suggested conducting a study to find out what good school performance was about. In the course of discussion, they came to a conclusion that the proposed list of school performance outcomes reflected the opinion of only one small project group and wondered what a broader audience would say. Eight people took part in the design and execution of the study: two adults and six adolescents aged 12–17, participating jointly. The study consisted of four stages: (1) identifying the "school performance outcomes" categories for discussion (brainstorming, generalization, categorization); (2) ranking the categories and discussing the results; (3) extending the sample: it was decided that students would ask their academic peers and friends to choose the six most significant categories of school performance outcomes from the list; (4) conducting a survey and discussing the results.

In the extended survey of 70 adolescents, results on one category were different from those obtained for the initial sample: "I can think", the category associated with cognitive competencies, moved up to the very top.[7] Data obtained in the extended survey generated a strong emotional response in the initiators, obviously indicating that the findings were significant and valuable to them—which we believe is a critical component of research activity. As researchers, the initiators found it meaningful that no extended survey respondent used the "Other (specify)" response option, which means their list of school performance outcomes was sufficient and good.

Since the study was aimed at finding categories to describe expectations from a good school, joint discussion with students was continued. Having generalized some of the categories, we selected the five most important performance indicators that schools should take as their targets and three additional educational outcomes that we considered important but yet unclear. The joint decision was made that the latter should be discussed and clarified before being included in the expected outcomes of our school project.

Main outcomes:

- I can think (analyze, reflect, process information, etc.);
- I have a sense of who I am, I know what I'm interested in, and I have a sustained interest in something;
- I can learn;
- I can communicate and interact, and I have friends / I am part of a team;

---

[7] Similar results were produced when the same survey was conducted on an even larger sample of students from Moscow State University of Psychology and Education (450).

- I feel ready to change the world.
- Additional outcomes:
- I have self-regulation skills;
- I have a sense of the world;
- I have the basic knowledge.

The three additional categories were lobbied by the elder part of the group. Most adolescents tend to ignore things associated with self-regulation, basic knowledge and basic worldviews. It turned out that the self-regulation category proposed by adults was new to young people, and they needed a separate discussion to make sense of it. They also suggested bringing up the question "What is basic knowledge?" for an open group discussion with the participation of adults—experts, teachers and parents. As a motivation behind this initiative, they explained that they did not quite understand what "basic knowledge" meant; furthermore, basic knowledge is inescapable at any school, so students possess it "by default".

During the group work self-reflection and result analysis phase, students pointed out that it had been interesting to conduct surveys and analyze the results; they had become more interested in mathematics; and they wanted to make sense of basic knowledge and conduct more surveys themselves—but discussing the same things over and over again had been a bore.

4.4. Problematization

To initiate the process of problematization, we put the description of "A"—the list of the group's current concerns about the school—on the left side of the whiteboard. The original detailed list of problems was used, without generalizations or categories. On the right side of the whiteboard, we put the description of "B", which consisted of three lists: a list of good performance outcomes, a description of ideal school characteristics, and a description of an ideal teacher that had been produced at one of the meetings.

The middle part of the whiteboard was left empty to be used for working on questions that describe the journey from "A" to "B". As we decided jointly with the youth, the more specific the questions were, the more adequate methods of travel we would find.

Adolescents formulated their questions individually and then put them down onto the whiteboard, explaining and refining their formulations.

This exercise yielded the following list of problem questions (wording left unedited).

What should be done so that the school...

- becomes an open system?
- does not kill the child inside the human being?
- makes children want to learn?

- transforms from a close-minded rigid system into a self-improving neural network?
- combines freedom and learning?
- has benches and tangerines?
- helps children learn to structure themselves and make sense of the world as well as provides them with fertile ground for creative inquiry?
- gives me the opportunity to choose how I develop?
- offers a comprehensive picture of the world?
- can be transformed from a "buggy program" into an organism capable of thinking and evolving?

In our view, these are great problem questions, and each of them may give a start for designing a new type of school. For the project group members, these formulations became a new informative step toward conception of the new school. While reflecting on the work done, they said that it had been interesting to articulate the questions and they could now see that "the words written down are filled with meaning". One of the participants pointed out that he could have asked a question like that without preliminary analysis, but now it had a different meaning to him. At the stage of discussing good school performance outcomes, building a picture of the world was not considered as a significant outcome; however, during the problematization stage that followed, one of the school students said that his attitude toward the value of systemic knowledge had changed. Upon discussion, the group members decided that it was worth organizing open talks not only on basic knowledge and worldviews but also on the problem of freedom and responsibility for learning because they found it absolutely insoluble: "Even if we design the best possible school in the world, there will be people who won't want to learn but will fool around instead." As we can see, adolescents made their own way to recognizing the need to solve one of the most difficult philosophical problems: the one of balancing freedom and responsibility.

4.5. Discussing the Design Results with Parents

While working as a project group, adolescents would often ask themselves, "What our parents or teachers would say if they heard us talking about it?" Since parents are as important stakeholders in the educational process as children and teachers, they were involved in similar discussions, but in a briefer format. At the two meetings with parents of elementary- and middle-school students, the same project steps were performed: self-determination, situation analysis, description of desired outcomes, and problematization.

As the preliminary work was done, the two groups were brought together for a joint discussion, analysis and generalization of results. The final discussion involved 20 participants: five school students, three college students, seven parents, four experts, and one moderator. It lasted about two hours and was followed by a round of self-reflection.

Adolescents presented the results of their work to the group, answered the questions asked, and explained the meaning of the metaphor of sailing from "A" to "B". Adults, in their turn, shared their own results and outlined questions that they were most concerned about. It turned out that the school's most significant problems identified by young people and parents were identical: lack of attention to actual human needs, lack of understanding what knowledge and competencies students possess as a result of learning, and the need to return the responsibility for learning to students. In the process of self-reflection, it was pointed out that adults and children had reached a consensus and mutual understanding in terms of the current school problems and had come to a common metaphor of today's school as a meat grinder (turning heterogeneous and individual things into a homogeneous mass). Perceptions of "good outcomes" were different between parents and students: parents experienced high levels of anxiety and confusion about what should be taken as targets, while students felt much more confident and cool-headed. Joint discussion of the school problems articulated by adolescents and parents allowed determining the key questions that should be solved in the process of design:

- How to make school experiences enriching for everyone?
- How to make school processes open, clear and transparent for everyone?
- How to make everyone cooperate and partner?
- How to make school processes effective and observe that effectiveness?
- How to make the school environment safe and cozy?
- How to turn children, teachers and parents from objects into fully-fledged participants?
- How to make the needs and interests of all students considered?

The most challenging part of joint discussion was to overcome the adults' urge to explain "what's right" to the youth and their unwillingness to actually listen to the younger participants. The moderator had to draw the participants' attention to such cases: when the debate got particularly heated on the side of parents, students would simply "drop out" and lose their motivation for involvement. On the whole, however, the meeting was constructive, and what the participants referred to as their main achievement were "jointness and equality", the pleasure of having the opportunity to discuss such complex issues together. Many adults were surprised at how much adolescents could be involved in discussion, concerned about the quality of school education and constructive in their reasoning. Everyone agreed that subsequent group discussions should cover the concept of basic knowledge, the balance between freedom and responsibility in learning, and the problem of teacher–student cooperation.

The activities described above gave rise to a community of adolescents, parents and teachers willing to find solutions to problems in practice. This experience was used as a foundation for the educational projects Virtual Own School and SUrok ("Own Lesson") Open Educational Environment and served as the basis for making the first steps toward solving the problems articulated in the process of participatory design.

4.6. Results of Applying the PDLE Method

A self-reflection session was carried out to wrap up the design project, where the participants gave their feedback on the whole process. Analysis of the feedback received allowed drawing some inferences about adolescents' position in participatory design of learning environments:

- Adolescents are willing to engage in education research and design activities as they are concerned about the education system's functioning and attach a lot of importance and value to this topic.
- The fact that adolescents pay attention to systemic issues of modern school education and can see and formulate the problems lying not on the surface but at the heart of the school crisis indicates that they have developed a conscious attitude toward school business.
- Adolescents see the main problems of education in the paradigm of "how" rather than "what". Social interactions emerging inside and around the learning process are much more important to them than curricula. "In this case, it is not only the problem of what to teach that comes to the foreground but also the problem of how to teach, i.e. the problem of organizing effective cooperative forms of learning." [Rubtsov 2005:17]
- Cooperation and partnership inherent to participatory design are significant to adolescents and constitute critical prerequisites for the development of participatory action in learning.
- Participation in design changes the attitudes of school and college students toward their own learning. All the participants of the project group reported having developed a more conscious approach to how they learn and a more responsible learner position. Of course, only tentative conclusions can be made upon such a short-term, narrow-focused project. The impact of the development of subject position through participatory design on young people's motivation for learning constitutes an important avenue of further research.
- Involvement in real research improves the learning motivation of adolescents. In the group participants' opinion, research gives the feeling of pleasure from "gaining" information, spurs the urge to substantiate the information obtained, and brings meaning to the acquisition of specific knowledge and skills. Some of the participants perceived the results of the study as personally significant. During the study preparation stage, some students "suddenly" realized the practical value of knowing mathematical formulas. At the

same stage, discussing the balance of freedom and responsibility became for some participants the point of departure for reflections on their own life philosophy. The influence of research as a process on the adolescent participants is one of the significant effects of participatory action research [Shamrova, Cummings 2017].

5. Advantages and Limitations of Participatory Design

Analysis of the results of using the PDLE method allows concluding that not only can adolescents participate in design activities together with adults but they also make a unique and valuable contribution to the content component of design process as they have their own vision of what a good school should be like. Design participants create a specific product that should be taken into account when designing educational processes. There are elements that are not prioritized by adults but are highly important to adolescents, such as the balance of freedom and responsibility, the undermining of learning processes by unmotivated children, the significance of life outside of school, and many others.

The use of the PDLE method allowed detecting both the advantages and limitation of this approach.

- One of the barriers faced by adolescents in projects like this is the small amount of free time which they cannot allocate at their discretion.
- The greatest challenge in participatory design is the attitude of adults that are not ready to take adolescents' design outcomes seriously. Elements of such attitude could be observed at group meetings and at project presentations in a public space. In our view, such dismissal of students' design efforts underlies the problem with design activities in today's school, when design projects are formalized and real outcomes are of no importance.
- Meetings with adults and joint discussions were an essential element of the participatory design project. Parental meetings were supposed to be held separately from adolescents, but it became obvious in the process that feedback from adults was important to youth. Organization of discussion and dialogue are a critical stage of participatory design. Adolescents could see the value of their contribution to the settlement of a problem that was parents' concern as well as theirs. In addition, they received support and found out that cooperation and partnership with adults were possible and real. Dialogue of this kind is equally important to experts attending the joint meeting, whose skepticism about youth participation in design gave way to recognition of the value and relevance of such work not only for adolescents themselves but also for experts' deeper understanding of the subject of design.
- In the process of design, participants gradually adopted the subject position, internalizing their accomplishments, coming to re-

fer to their school as "our school", showing initiative, and working out further steps for project improvement, such as virtual summer school. This position of participants is what is crucially important for designing learning environments as environments for development.

• The described example of participatory design represents the "adult-initiated, shared decisions with children" (sixth) rung of Hart's Participation Ladder [Hart 1992:8]. Further development of participatory design practices implies assigning more and more responsibility for the process to children and adolescents.

• As any form of child or adolescent involvement in real-life, "grown-up" projects, participatory design is a novel kind of activity that requires a high level of expertise. If we want to become professionals in this field, we need to scrutinize our own activities, reflect on every single step, and rely on methodological practices of Russian and international organizations.

Method testing as one of the very first steps in participatory design opens up a wide range of application possibilities. The work done as part of the present study matters a lot for curriculum design as well as for the participants' development. Changes in how students position themselves in learning and how adults perceive the value of adolescents' contribution confirm the fundamental premise of the cultural-historical and activity-based approaches that co-participation is imperative for promoting subject position in youth. Development and testing of the PDLE method is a step toward creating a school centered around the idea of each student being a subject in the learning process. Therefore, the participatory design method can be used in school life practices focused on cultural "adulting" of adolescents, meaning that they engage in participatory action as self-initiated, autonomous and responsible action in the learning process.

Involvement of young people in decision-making on issues relating to their lives—specifically their learning, leisure and health—provides them with an opportunity to become the agents and designers of their own lives. This is exactly how we should apply the Convention on the Rights of the Child and create conditions for actualizing the idea of respecting childhood and valuing youth's contribution to social development.

References Day L., Percy-Smith B., Ruxton S., McKenna K. et al. (2015) *Evaluation of Legislation, Policy and Practice on Child Participation in the European Union. Research Summary*. Luxembourg: Publications Office of the European Union. Available at: https://op.europa.eu/en/publication-detail/-/publication/f425176fcc2c-46bd-8a3a-65d958fff780 (accessed 20 July 2021).

Elkonin B. D. (2010a) Glavnaya zadacha razvivayushchego obucheniya [The Main Task of Developing Training]. *Mediation. Action. Development* (ed. B. D. Elkonin), Izhevsk: ERGO, pp. 221–232.

Elkonin B. D. (2010b) Obrazovatel'nye rezul'taty i rezul'taty razvitiya [Educational Outcomes and Developmental Outcomes]. *Mediation. Action. Development* (ed. B. D. Elkonin), Izhevsk: ERGO, pp. 119–121.

Froumin I. D., Elkonin B. D. (2010) Obrazovatel'noe prostranstvo kak prostranstvo razvitiya ("shkola vzrosleniya") [Educational Space as a Space of Development ("School of Growing up")]. *Mediation. Action. Development* (ed. B. D. Elkonin), Izhevsk: ERGO, pp. 83–94.

Gromyko Yu.V. (2018) K probleme sozdaniya obshchenarodnoy shkoly budushchego: sintez predmetnogo i proektnogo obrazovaniya [On the Issue of Establishing Public Schools of the Future: A Synthesis of Subject and Project-Based Education]. *Psikhologicheskaya nauka i obrazovanie/Psychological Science and Education*, vol. 23, no 1, pp. 93–105. doi:10.17759/pse.2018230108.

Hart R. A. (1992) *Children's Participation: From Tokenism to Citizenship*. Florence, Italy: UNICEF International Child Development Centre. Available at: https://www.unicef-irc.org/publications/pdf/childrens_participation.pdf (accessed 20 July 2021).

Key E. (1909) *The Century of the Child*. New York; London: G. P. Putnam and Sons. Available at: https://archive.org/details/centurychild00frangoog/page/n10/mode/2up (accessed 20 July 2021).

Kiyanenko K. (2010) Henry Sanoff: k arkhitekture, ozabochennoy chelovekom. O proektirovanii lyudey, s lyud'mi i dlya lyudey [Henry Sanoff—Toward a Humanely Concerened Architecture. Designing People, with People and for People]. *Arkhitekturny vestnik*, no 1, pp. 96–101.

Kränzl-Nagl R., Zartler U. (2010) Children's Participation in School and Community: European Perspectives. *A Handbook of Children's and Young People's Participation: Perspectives from Theory and Practice* (eds B. Percy-Smith, N. Thomas), London; New York: Routledge, pp. 164–173.

Lansdown G. (2010) The Realisation of Children's Participation Rights: Critical Reflections. *A Handbook of Children's and Young People's Participation: Perspectives from Theory and Practice* (eds B. Percy-Smith, N. Thomas), London; NewYork: Routledge, pp. 11–23.

Mead M. (1988) *Kul'tura i mir detstva* [Culture and the World of Childhood]. Moscow: Nauka.

Oudenhoven N., Wazir R. (2010) *Novoe detstvo: kak izmenilis' usloviya i potrebnosti zhizni detey* [New Childhood: How the Conditions and Needs of Children Changed]. Moscow: University Book.

Percy-Smith B., Thomas N. (eds) (2010) *A Handbook of Children's and Young People's Participation: Perspectives from Theory and Practice*. London; New York: Routledge.

Podushkina T. G., Tikhomirova A. V., Shamrova D. P. (2016) Sistemny analiz dokazatel'stv vliyaniya uchastiya detey v otsenke sotsial'nykh program na ikh psikhologicheskoe razvitie [System Analysis of Evidences of the Impact of Child Involvement in Evaluating Social Programs on Their Psychological Development]. *Sovremennaia zarubezhnaia psikhologiia/Modern Foreign Psychology*, vol. 5, no 2, pp. 39–50. doi:10.17759/jmfp.2016050205

Polivanova K. N. (1998) K probleme vedushchey deyatel'nosti v podrostnichestve [On the Problem of Leading Activity in Adolescence]. *Psikhologicheskaya nauka i obrazovanie/Psychological Science and Education*, vol. 3, no 3–4, pp. 13–17.

Rubtsov V. V. (2008) *Sotsial'no-geneticheskaya psikhologiya razvivayushchego obrazovaniya: deyatel'nostny podkhod* [Socio-Genetic Psychology of Developing Education:

O. S. Ostroverkh, A. V. Tikhomirova
Participatory Design of New School Learning Environments

An Activity-Based Approach]. Moscow: Moscow State Psychological and Pedagogical University.

Rubtsov V. V. (2005) Sotsial'nye vzaimodeystviya i obuchenie: kul'turno-istoricheskiy kontekst [Social Interactions and Learning: Cultural and Historical Context]. *Kul'turno-istoricheskaya psikhologiya / Cultural-Historical Psychology*, vol. 1, no 1, pp. 14–24.

Rubtsov V. V. (1998) Sovmestnaya uchebnaya deyatel'nost' v kontekste problem sootnosheniya sotsial'nykh vzaimodeystviy i obucheniya [Joint Educational Activity in the Context of the Problem of the Correlation of Social Interactions and Learning]. *Voprosy Psychologi*i, no 5, pp. 49–58.

Rubtsov V. V., Ivoshina T. G. (2002) *Proektirovanie razvivayushchey obrazovatel'noy sredy shkoly* [Designing a Developing Educational Environment of a School].Moscow: Moscow State Psychological and Pedagogical University.

Sanoff H. (1994) *School Design*. London, New York: Routledge. doi:10.4324/9781315160412.

Shamrova D., Cummings C. (2017) Participatory Action Research (PAR) with Children and Youth: An Integrative Review of Methodology and PAR Outcomes for Participants, Organizations, and Communities. *Children and Youth Services Review*, vol. 81, October, pp. 400–412. doi:10.1016/j.childyouth.2017.08.022.

Slobodchikov V. I. (2010) *Antropologicheskaya perspektiva otechestvennogo obrazovaniya* [The Anthropological Perspective of National Education]. Yekaterinburg: Information and Publishing Department of the Yekaterinburg Diocese.

Walden R. (ed.) (2009) *Schools for the Future*. Cambridge, MA: Hogrefe. doi:10.1007/978–3–658–09405–8.

Zaretsky Yu.V. (2014) *Subjektnaya pozitsiya shkol'nikov po otnosheniyu k uchebnoy deyatel'nosti v raznykh vozrastnykh periodakh* [The Subjective Position of Schoolchildren in Relation to Educational Activities in Different Age Periods] (PhD Thesis). Moscow: Moscow State University of Psychology and Education.

Zaretsky V. K. (2002) Organizatsiya kollektivnogo resheniya problem v khode razrabotki avtorskikh proektov [Organization of Collective Problem Solving during the Development of Author's Projects]. *Puti resheniya problemy sirotstva v Rossii* [Ways to Solve the Problem of Orphanhood in Russia] (V. K. Zaretsky, M. O. Dubrovskay-am V. N. Oslon, A. B. Kholmogorova). Moscow: Voprosy psichologii, pp. 82–127.

http://vo.hse.ru

145