

**Child's creative activity as an opportunity to develop  
metalearning skills – analysis of an educational programme**  
*Creating my own textbook –  
I know what I want to learn and how*

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**ABSTRACT**

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The objective of my project entitled “Creating my own textbook - I know what I want to learn and how” was to develop children’s awareness of a broadly defined ability to learn, through the creation of their own textbooks, which they would like to use at school. The main aim of the research described below was to gain an understanding of what children themselves would consider to be an ideal textbook from which to learn, what they would really like to learn about, and what are their interests and needs in terms of learning at school. Twenty-seven pupils from the III-rd grade of primary school participated in the project. The educational project lasted five months. A basic assumption of the research was that pupils have their own personal knowledge with regard to the content of what they would like to be taught at school. Conclusions from the research were formulated on the basis of interviews carried out with the children and an analysis of the textbooks which they created. The results show that the pupils who participated in the educational project are able to describe what their ideal school textbook should be like. The objective of the present paper is to present the conclusions drawn from the educational project from the perspective of developing meta-learning skills in young, school-aged children.

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**INTRODUCTION**

Creating a learning environment which fosters the development of children’s creative activities as well as those which provide them with an opportunity to develop their awareness of learning processes has long since been a vital goal for teachers. Students who

are able to regulate their learning process of their own, are also aware of their strengths and weaknesses, and consequently, are able to learn how to select the most effective learning strategies and, at the same time, to assume responsibility for the effectiveness of the process. A variety of activities, including creative ones, are crucial to the process of a person's organised and conscious learning (Amabile, 1983; Esquivel, 1995; Westby & Dawson, 1995; James & Asmus, 2000; Buehl, 2004; Claxton, 2002; Sternberg, Reznitskaya & Jarvina, 2007; Sandlin, Redmon Wright & Clark, 2011; Gajda, Karwowski & Beghetto, 2016). The process of forming a body of knowledge by children is "described as more or less conscious learning of a constructive, and not reproductive, character, therefore it is linked to a creative process. The process of shaping a creative attitude in young school-aged children can also be approached as a broadly understood learning process, that is, the acquisition and processing of experiences obtained in the course of a creative activity" (Uszyńska-Jarmoc, 2005, p. 236).

Creativity or creative potential "is viewed as a natural ability in young children (...) The early years of education are viewed as a sensitive, and therefore important, period during which [part missing] to nurture children's creativity" (Rang Lee & Kemple, 2014, p. 82). The task of a contemporary teacher, who understands and notices the need to develop children's creative activities, includes: creating an environment conducive to constructive learning (Gordon, 2009; Mvududu, 2005), providing an opportunity for them to learn autonomously, and independently, but at the same time in a responsible manner (Parashar & Pingle, 2015; Robinson, Neergaard, Tanggaard & Krueger, 2016), organising the learning process while taking into account children's co-operation as well as their individual needs in terms of learning at school (Commeyras, 1995; Terwel, 1999). According to Uszyńska-Jarmoc (2005), the education of a young child should be based on organising his/her educational environment in such a way that the child is able to gather varied experiences and attribute personal meanings to the world. Children's creative activity, when developed "without hurry, outside of the obligatory educational classes (...) and the mandatory teaching curriculum, favours emotional security through allowing the children to act according to their predisposition and expectations. When creating, children discover soon enough that they are not the subject of evaluation or criticism, as there are many possible solutions to a given task" (Uszyńska-Jarmoc, 2005, p. 236).

The pedagogical literature distinguishes between three basic forms of children's activities at school: spontaneous, inspired and directed. The reason for students to become involved in spontaneous creation "include most often curiosity, pensiveness, reflection (...) however, in order to activate it, we need to provide the students with an oppor-

tunity to undertake various activities” (Bonar, 2008, p. 127). Spontaneous activity is the expression of actions initiated by children on their own; it usually occurs without prompting from the teacher.. A spontaneous activity can be triggered by various events, objects in the child’s immediate environment. This type of activity is usually the expression of children’s cognitive curiosity (Zwiernik, 1993, p. 58). An inspired activity takes place when the teacher, by establishing an inspiring educational environment, creates an opportunity for the children to undertake various actions, at the same time encouraging them to participate in them. However, directed children’s activity occurs when the teacher provides the child with a detailed description of the manner for completing the task (Zwiernik, 1993). In the present text I assume that “creative activity (spontaneous, inspired and driven) can be the main means of reflexive learning about the world and oneself (...). Through creative activities, children disclose and becomes aware of their own needs, experiences, way of thinking, values, and ways of relating to the world and to oneself” (Uszyńska-Jarmoc, 2005, p. 241). All three types of children’s activities matter in the process of school education, however, spontaneous and inspired activities are particularly important in fostering the creativity of both children and adults (Barrett, 2006; Khairullinaa, Bakhtizinb, Gaisinab, Kosintsevac & Belonozhkoa, 2016). According to Abykanova, Bilyalova, Makhatova, Idrissov and Nugumanova (2016, p. 3333), “successful learning by activating creative activity is possible with the presence of respectful attitude towards the pedagogic process subjects, creation of the conditions for potential capabilities and organization of educational process in such way where the subject feels emotional uplift, physical energy surge, feeling of success and confidence. In this case, learning would not be a burden but would rather become a joy of learning something new, making independent discoveries”.

### **The meta-learning skill - theoretical assumptions**

A human being learns all the time, regardless of time and location (Rogers, 2003; Spitzer, 2011). From a neurobiological perspective, learning is not passive - it is an active process during which changes occur in the learner’s brain (Spitzer, 2012, p. 17). Learning is a human being’s inborn ability, however, we are not always aware of it and we sometimes learn things unknowingly. Knowledge in the field of neurobiology regarding the functioning of the brain offers us the possibility of understanding the way human beings learn and employing this knowledge, both in everyday situations and in educational practice (Steffens, 2015). In the current text I assume, in line with Uszyńska-Jarmoc (2015, p. 144) that learning is “the process of gathering, arranging, modifying and generalising various experiences (cognitive, social, practical) in planned and/or unplanned situations,

at school or outside of it thanks to participation in cognitive or social interactions (direct learning) or learning through interactions initiated in a network or an organisation (indirect learning)". I understand the term "learning" within a broad perspective, as human beings' natural ability enabling them to build their own knowledge structures through gathering various, global life experiences and participating in culture, and also as a skill which demands reflection and a considerable effort, awareness and involvement in the process of intentional and planned learning.

Engaging in the activity of conscious, intentional learning, can be mastered thanks to the development of concentration skills (Oeszlaeger, 2007), detailed planning of the execution of the performed task (Bruner, 1966), appropriate management of one's time: the goal-setting skill, and also shaping the ability to manage and direct one's behaviour (Boucher & Avard, 2006). Knowledge regarding one's own learning process (and, generally, the learning process of a human being), the ability to use this knowledge, as well as the belief that our manner of learning is good and appropriate is defined as a meta-learning skill (Jackson, 2003). As is emphasised by Biggs (1985), the essence of meta-learning consists of being aware of the course of the learning process and the ability to control and monitor this process. The meta-learning skill involves the acquisition of broadly defined knowledge on the subject of learning. The components of the meta-learning structure include meta-knowledge, that is, knowledge about knowledge in the field of learning, meta-cognition, defined as knowledge about cognitive processes (including one's own) and meta-thinking, understood as thinking about thinking (also one's own way of thinking, receiving and analysing information, arriving at conclusions) (Mayer, 1998; Mayer & Shanahan, 2004; Young, 2004; Crittenden & Woodside, 2007; Puryear, 2015; Ebert, 2015; Bassett, 2016; Palennari, 2016).

According to Schaffer (2010) meta-cognition may be defined as knowledge concerning one's own abilities and cognitive processes. On the other hand, meta-cognitive knowledge refers to the reserves of information. Effective meta-cognitive processes, which develop between the age of five and ten, are regarded as extremely important achievements on the part of the child, as they have an influence on efficient cognitive functioning. Meta-cognitive skills are expressed in specific abilities such as meta-memory, which refers to having knowledge and skills for monitoring one's own memory (Chuna, Schacter & Sperling, 2009); meta-abilities, understood as knowledge concerning one's own abilities and skills (Malinowsky, Nygard & Kottorp, 2011); meta-competencies, which are concerned with the person's awareness of their competence for doing something (Mallow & Cameron-Kelly, 2006). Developing these meta-learning skills is connect-

ed with the ability to describe the contents of, and select appropriate methods for learning, becoming aware of the nature of one's own learning processes (one's own predispositions, possibilities), as well as creating one's own paths for learning, gaining skills for setting goals, and selecting appropriate methods for learning the desired contents (Uszyńska-Jarmoc, 2012).

Constructivist learning theory assumes that each child creates his/her own knowledge structures on the basis of the wealth of acquired experiences, and that each person constructs his/her own personal understanding of the world. Developing awareness of one's own learning processes can take place through a learning environment created by teachers in such a way as to provide children with an opportunity to gain diverse experiences in terms of co-deciding about their own learning processes. While carrying out my educational project I assumed that children's ability to think constructively and creatively, i.e. to solve problems in an original way, which is at the same time precious and valuable for themselves, can create an opportunity for them to think about their learning processes in a new, non-standard manner (Uszyńska-Jarmoc & Żak, 2013). The ability to act creatively can be used to design one's own curriculum. While carrying out the "Creating my own textbook - I know what I want to learn and how" project, described in more detail below, I started from the assumption that the conscious use of creative skills in the process of learning, understood in broad terms, would allow the child to obtain valuable experiences regarding planning, organising, monitoring and designing a learning style/manner which is best for the child.

In my project II assumed that "learning through a creative activity combined with drawing on experiences gathered in the past, is one of the most effective methods for children to construct personal knowledge about themselves and the world and for stimulating a creative attitude" (Uszyńska-Jarmoc, 2005, p. 239). Participating in the project proved to be an interesting opportunity for the children in terms of the development of their meta-learning skills<sup>1</sup>. Carmeli, Gelibard and Reiter-Palmon (2013) emphasise that the sharing of knowledge between persons who are aiming to solve a given problem together is paramount to finding a creative solution. However, it is not only the possession (exchange) of knowledge that matters, but also the ability to obtain information and integrate it with what we already know, in a new and original way. As the results of the study by Carmeli, Gelibard, Reiter-Palmon (2013, p. 10) demonstrate, there is a link between the ability to share knowledge with other people and the creative problem-solving skill. Althuizen and Reichel (2016) emphasise that the process of creative problem solving

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<sup>1</sup> This article contains excerpts from my unpublished M.A. thesis: *Proposals for the ideal textbook from the perspective of primary school pupils*. (Żak, 2013).

takes place mainly through the assimilation of new information into our existing mental structures. The creation of diverse connotations activates the knowledge that we already possess, through the retrieval of information from our long-term memory and the formation of new cognitive structures. Undoubtedly, perseverance, the ability to focus on the performed task and the capacity to endure in the pursuit of one's goal foster the creation of novel and effective solutions to a given problem (Baas, Roskes, Sligte, Nijstad, De Dreu 2013; Bye, Pushkar, 2009). According to Althuizen and Reichel (2016, p. 31), the profoundness of the processed information is positively correlated with the number of generated ideas. Studies (Althuizen, Reichel, 2016) demonstrate that more creative ideas emerge when the search for solutions to a given problem is paired with cognitive persistence. A deeper exploration of a given subject and reflection upon different, unconventional ways of solving the problem are related to the quality and quantity of ideas produced. Furthermore, the realisation that the work performed is meaningful, most of all for the person involved, contributes to its perception as significant and worthy (Pintrich, de Groot, 1990). Therefore the teacher occupies an important role in the problem-solving process, assuming the position of a mediator who supports the process of completing a creative task by the students, but abstains from imposing his/her own perspective and ideas regarding the solutions to a given problem (Caswell, 2006).

## METHODS

In order to develop and make the most of children's critical and constructive thinking, in my study I employed the Creative Problem Solving (CPS) method (Osborn, 1963; Chant, Moes & Ross, 2009; Treffinger; Isaksen, 2005). In the CPS model the process of creative problem-solving is based on the involvement of all the participants in the project (Chant, Moes & Ross, 2009, p. 62). The Creative Problem Solving method invites the students to develop their critical and constructive thinking skills (Cakin, 2008; Mayer, 2013) through the employment of diverse learning strategies (Samson, 2015). It can be used to solve different problems in a creative manner, individually or in co-operation with others (Brophy, 1998; Hughes, 2003). The methodological assumptions of CPS are related to constructive learning theory, which states that a person acquires/constructs his/her knowledge actively and autonomously by means of gathering experiences gained in the social and cultural environment (DeCorte, 2013).

The Creative Problem Solving model distinguishes between three stages of problem solving: first - exploring the challenge, second - idea generation and third - taking action (Chant, Moes & Ross 2009, p. 62). Each stage involves both divergent and convergent strategies (Chant, Moes & Ross 2009). The key aspects of creative problem-solving

include, above all, the understanding of the problem, that is, the process of identifying it, next, the ability to generate ideas, and finally, the aptitude to evaluate the selected ideas in the right manner and to employ them in practice (Mumford, Baughman, & Sager, 2003; Hughes, 2003). The first step consists of identifying the objective and of accepting the challenge to solve a given problem. Then data have to be collected and knowledge about a given problem needs to be systematised - what do we know about the subject at a given moment? Next, we need to understand the problem, that is, explain to ourselves what a given subject consists of - identify its origin and the ways of solving it. The process of formulating the problem necessitates above all, looking at the given subject-matter from many different perspectives (Hunter, Bedell-Avers, Ligon, Hunsicker & Mumford, 2008; Lin & Cho, 2011; Carmeli, Gelibard & Reiter-Palmon, 2013). The final step in the CPS model consists of activity planning and implementing the best idea. During each stage, as mentioned previously, the persons working on a given task develop divergent and convergent thinking skills (the former in order to generate the largest number of ideas and the latter to select the best workable idea). Divergent thinking matters in the process of creative problem solving as much as convergent thinking which helps us select one - the most suitable - solution (Althuizen & Reichel, 2016).

The objective of my educational project was to develop students' awareness of the broadly defined learning process through their participation in the creation of ideal textbooks from which they would like to learn in primary school. I wanted the books designed by the children to be the expression of their personal interests in learning. When carrying out the project I assumed that in order to discover the children's true image of the world, in their vision of an ideal textbook, I should allow them to create such a book themselves. The educational project was carried out in Poland, at Primary School No. 26, in Białystok, which is named in honor of Stanisław Staszica. The project participants included 27 pupils from the IIIrd grade - 19 girls and 8 boys. The mean age of the pupils was 9 years. The children's parents gave written permission for their participation in the educational project and for the results to be used in academic research.

The subject of my research are the opinions of 9 year-old pupils concerning their view of what would constitute an ideal textbook, from which they would like to learn. I started the research by carrying out initial qualitative interviews, after which there was a cycle of classes, during which the children created their textbooks. Interviews were also carried out on completion of the project in order to analyse any differences in the children's responses. Conclusions from the project were formulated on the basis of interviews with the children, observation of their work during the creation of their textbooks, as well as an in-depth analysis of their completed textbooks (characteristics of the types of instructions, exercises, graphic design and contents of their books).

## Characteristics of the programme

### *Creating my own textbook – I know what I want to learn and how*

As the children declared their willingness to participate in the project, and moreover, they felt that their input would be important and valuable, they were happy to begin working on the preparation of their books. At first I organised a series of classes introducing them to the subject of textbook writing. The main objective was to develop the children's ability to approach textbooks which they would like to use at school critically and constructively. The meetings took place during classes and extracurricular activities. Depending on the children's needs and interests, the subject selected was often discussed during more than one meeting.

**Table 1**

### **Themes for the classes conducted as part of the project**

Note: Developing the skills of conscious learning in the creative process (Żak-Skalimowska, 2018, in press)

<b>Class subject</b>	
<b>What are my interests? What would I like to learn?</b>	<p><b>The subject of discovery</b> When we get to know our interests and passions we can consciously decide what we want to learn.</p> <p><b>Elements that require emphasis</b> Each of us has different interests which we can pursue more effectively with conscious learning.</p>
<b>We discover the structure of textbooks used in different fields of science</b>	<p><b>The subject of discovery</b> Textbooks representing different scientific disciplines differ in many respects. In each discipline the textbook is constructed according to specific needs related to the objective of passing on specialist knowledge. This is why we can find a rich array of different instructions and layouts in different textbooks.</p> <p><b>Elements that require emphasis</b> It is important to get acquainted with textbooks used in different fields of science as they can be an inspiration in creating one's own textbook.</p>
<b>Our vision of an ideal textbook! We design the textbooks of the future</b>	<p><b>The subject of discovery</b> We have a great influence on what we want to learn. When designing the textbook according to our own vision, we realise what our interests are and what we want to learn.</p> <p><b>Elements that require emphasis</b> Working in a group requires good organisation and planning of tasks to be performed by given persons. Co-operation and appropriate organisation will bring many advantages.</p>
<b>What were textbooks like in the past?</b>	<p><b>The subject of discovery</b> History demonstrates that textbooks come in many forms and there is no single schematic pattern. With the passage of time, new possibilities for the creation of textbooks were discovered. We can also study without a textbook, it is not the only teaching aid, nor is it indispensable.</p> <p><b>Elements that require emphasis</b> The vision of the textbook depends most of all on the authors, that is, on ourselves!</p>
<b>What would I like to learn from a textbook? Preparation of the content by the students</b>	<p><b>The subject of discovery</b> By analysing the content of different textbooks we can discover new interests and expand our knowledge regarding different scientific disciplines.</p> <p><b>Elements that require emphasis</b> When working on a text we should remember about proper spelling and grammar. When we use spelling dictionaries we memorise how to write words correctly.</p>



<b>Class subject</b>	
<b>Graphic design in a computer lab</b>	<p><b>The subject of discovery</b> Computer graphics make it possible to diversify the design. As the computer performs tasks precisely and rapidly, our work takes less time.</p> <p><b>Elements that require emphasis</b> Work created on our own gives a lot of satisfaction and allows us to express ourselves in a unique way. This is why, when creating textbooks, we combine two working methods.</p>
<b>We design the layout of our textbooks</b>	<p><b>The subject of discovery</b> The layout can have a hidden meaning and that is why it is as important as the text in the book. It stirs our imagination, gives us food for thought and makes us interpret the acquired information and read it personally.</p> <p><b>Elements that require emphasis</b> Each person can interpret a given illustration differently, this is why we should respect other people's opinions. Something really special and unique can be created through collaborative work.</p>
<b>Why is our textbook special? We learn the principles of a good presentation</b>	<p><b>The subject of discovery</b> The work created should be presented in an interesting way so that it is remembered.</p> <p><b>Elements that require emphasis</b> We can also develop our talents when learning in an unconventional manner.</p>

Students worked on their textbooks in small groups, whilst a few preferred individual work. In each group the role of a professional reviser, graphic designer and editor was assigned to a specific person. Children decided themselves about the content, layout as well as the tasks and exercises to be included in the textbook. Their choices reflected their own learning preferences. When selecting the learning material, students were driven mainly by their personal interests and by their personal intuition about what is important and useful, not only in school education, but also in their everyday lives. It was important for me that students, when choosing subjects for their textbooks, and when defining problems and asking questions regarding selected subjects, searched for answers on their own.

The fact that the children co-operated in the accomplishment of a common objective became a great opportunity for them to develop their social skills. In carrying out the project I intended to encourage children to exchange opinions and develop cognitive curiosity and motivation to learn according to their own curriculum through creative problem-solving, that is, the creation of their own, unique textbooks. Children participating in the project understood the need for creating their own textbooks. Thanks to the experience they gradually acquired in the area of planning and work organisation, the children gained practise in the process of textbook creation.

In the beginning, I encouraged the pupils to work by analysing the layout, instructions and types of tasks in typical, primary school textbooks, but with the passing of time the children were able to decide on their own, which tasks are noteworthy and which, in their opinion, are too easy, monotonous or boring. While working on their books, the students used various materials and selected them according to their own preferences. The

absence of any limitations imposed upon the children as regards the content and layout of the textbooks allowed them to experience ownership of their decisions about themselves and their way of learning. The project started from the assumption that a student cannot be treated as a passive recipient of transferred knowledge, but as a person who pursues the development of the ability to manage his/her own learning process (Kolber, 2008). One of the objectives of the project under discussion was to develop the self-regulation skill and a sense of ownership in children. Students who regulate their learning process on their own are aware of their strong and weak points, thanks to which, they are able to select strategies best suited for their needs. As is rightly stressed by Filipiak (2011), children must discover how to regulate their activities in order to learn consciously.

Depending on the students' needs and interests, selected subjects were often discussed during more than one meeting. Class modules were inspired by the Creative Problem |Solving Model. The first stage of the CPS, devoted to developing a deeper understanding of the problem, consists of searching for many different solutions to the problem, approaching it from numerous perspectives and arriving at a definite definition of the problem. The first meeting was intended to boost the students' ability to reflect on their own interests and on the things they needed to learn in order to develop them. Its main objective was to stimulate the students' ability to visualise themselves in the future, creating an image of their "selves" in a few years' time. Children discussed who they would like to be in the future and what they should learn to achieve this objective.

The second stage of the module was devoted to the need for looking at the problem from many different perspectives. This is why we carried out an analysis of textbooks available on the market as well as those used by students at school at the time of the project. The exercise was meant to encourage the children to look at the books covering different fields of science in a thoughtful manner and to notice that the books differed in many respects, as well as allowing them to discover the rich array of layouts, instructions and ways of presenting content. The meetings began with an analysis of the structure of the textbooks, which was performed together. The students compared and described different books in terms of instructions, layout, content and tasks. The meetings conducted within the framework of the first module also aimed at fostering the children's awareness of different ways of learning without the use of textbooks. Together with a history teacher I organised a class on textbooks from the past. During the class the students analysed the differences between the textbooks they currently used and those employed by children in antiquity and the Middle Ages. The children also had the opportunity to reflect upon different modes of learning and they listed the good and bad aspects of various textbooks from the past.

In the final stage of the module the children tried to answer the following question: How should I prepare for the creation of my own textbook so that it contains information of interest to me? What materials should I gather? The next stage in the Creative Problem Solving model consists of brainstorming ideas and ways of solving a given problem. During the next meeting module, students created thinking maps, which presented their preferences regarding the teaching content which might be included in their textbooks. The children made their first attempt at creating a design of their textbook, they decided which initial ideas were good and which required some modification and, finally, they made a preliminary selection of their ideas. They discussed ways in which they could present these ideas in the textbook. At first the children wanted to place a lot of information in their textbooks, but some of them came to the conclusion that they were not able to include all their interests and they chose to concentrate on a reduced number of topics. In the third module the students designed the layout of their textbooks and commenced their projects. During this stage, the children started preparing the learning materials. They discussed the best ways of combining information, whether to place it in separate chapters, whether they required a separate textbook and exercise book, and they decided together on the best way to formulate instructions and the layout of their textbooks.

The children's creative activity was spontaneous (for example, during the extra-curricular classes the children came up with the idea of organising a theatre and they got involved in a role-play where they impersonated TV presenters who conducted interviews with textbook authors and reviewers). The children's actions were also spontaneous when they selected interesting tasks that could be used during classes (e.g. a class with the history teacher on the textbooks of the past, where the children put forward the idea of creating their own clay tablets). On the other hand, the children's creative activities were also stimulated by directed tasks, aiming at the development of particular skills, including the selection of information, careful analysis, project development and action planning.

### **Developing the meta-learning skill in children through participation in a creative educational project - conclusions**

I started my project by conducting initial interviews with children. I asked them, *inter alia*, what would happen if adult authors stopped writing textbooks for primary schools, what would happen if there were no textbooks, how they evaluate the textbooks they currently use at school, what they would like to change in their books and what they would like to learn from the books they have at school. My first conversation with students made me aware that for the majority of children a textbook is the first and the most important book, and they cannot imagine education in primary school without it.

Teacher: What would happen if authors stopped writing textbooks for primary schools?

Małgosia: *Probably the level of education would drop a lot. But it all depends on the teacher, if the teacher has ideas, than you would not be affected that much, but when the teacher is...you know... than the kids could lose a lot.*

Oliwia: *That would cause a great scandal, because the children would have nothing to learn from.*

Gabrysia G: *Better not say anything...(laughs)*

Zuzia B: *Now that's something new!*

Maria: *That would be a great disaster, kids would not learn...and they would not have a book to write in or draw pictures.*

Marcela: *It would be difficult for the teachers, as they wouldn't know whether to teach easier or harder things. They wouldn't know what to do. That's how it is...easier for teachers...and for children as well.*

Wiktoria: *I would cry my eyes out...(...) Well, I would do my own exercises.*

The initiated educational project provided the children with an opportunity to get involved in their learning process by making their own choices and independent decisions, satisfying their cognitive curiosity, and taking their individual preferences into account in terms of information and ways of learning. When I discussed the students' dream textbooks for primary schools I wanted to find out, first of all, what they would like to learn from them. Interviews conducted prior to the project demonstrated that students did not have any self-awareness in this area at the time, so not all of them knew what they would include in their ideal textbooks. The majority said "I do not know". Two children mentioned the need to learn things related to their interests:

Antosia: *eghm... I would like to learn, say, about explorers, about the history of our country and of other countries, too, about traditions in various places...I'm interested in Portugal, France, Spain and, mmm, also.... Scandinavia.*

Marcela: *I would like to get some good advice on, for example, correct spelling (...), that it's better to buy an abacus than a calculator, because you will learn faster with an abacus than with a calculator.*

Gabrysia G: *I am not quite sure...for example, if there was a textbook, it should have a little bit of everything.*

Following the educational project, students' answers became more complex. When creating their own textbooks, they acquired greater knowledge on what is broadly understood as meta-learning - most of all, in terms of the material they would like to learn at school. Their opinions testify to the increase in self-awareness in this respect:

Marcela: *I would definitely like to learn some very necessary things, for example, not only that... that a human being has a heart and a brain, as it is really not enough, but to learn, say, that you say “hind legs” of a hare, and not “back legs”, for example. Now I would like to learn a lot about science, as I like it very much, about fine art, I would like to learn how to paint a beautiful picture, what is the secret, should I make a sketch first or no sketch...and I would generally like to learn such useful information, and not only that Kate...that in the autumn you can gather chestnuts and in the spring they are still growing.*

Gabrysia G: *All that is necessary in life, that is one thing, and the second thing, what I feel in my heart, what I like doing. What I find interesting and what I want to continue doing (...)*

Krzyś H: *Well...so many different things, for example, how to assemble a bicycle, or how to fix things. Or how to make things, for example origami or... things out of paper. Also, for example, how to...how to make, say, a magnet, or how to make... a simple flash light...or a small pin-wheel...or something like that.*

Rafał: *Erm....I would like to learn many different things from my dream textbook, as this textbook would be in fact, about Minecraft...and I do not know much about it...and I would like to learn a lot about Minecraft because I like the game.*

Małgosia: *Well...I would like to learn, say, something else, other than only maths or Polish, but for example learn about things that we can make at home, such as sewing or cooking (...) sometimes it is not possible, when the state is not too rich, it is not possible to teach it, but exactly, it should at least be in the textbook, for example as homework (...)*

When carrying out the interviews with the pupils, I also asked them what wishes they might have concerning the textbooks, which might arise in the future.

Teacher: Suppose you had the ability to fulfill any wishes concerning how your current textbook should look. What would those wishes be?

Małgosia A: *There would be more history, because I love history. Secondly there would be... every page would be in colour.*

Marcela: *Above all, it should be in colour, so that it didn't look sad. Y... So that it contained advice, so that everything was sensible, so that there was nothing stupid, like for example, the cricket asking the mouse about the weather. So that there were only sensible things (...)*

Gabrysia F: *(...) with certainty, there should be more difficult problems in maths*

Krzyś P: *My first wish would be that the textbook should be interesting,*

*so that somebody would want to read it. Secondly, that when someone evaluates the textbook, that it should get a good evaluation, and thirdly, that it should be...well...interesting for the pupils.*

*Gabrysia G: So that it didn't have any mistakes (...) so that it was more colourful, something that captures your attention (...) more pictures, paintings, simply more of those things that make it easier to learn. Secondly, to change the tasks a bit, so that they might be of different levels of difficulty, so for example, the first level could be a straightforward task/calculation, the next levels gradually becoming more difficult, so that with each level you get deeper into the problem, you have to think more and more, make more and more calculations, think more.*

*Antosia: I would like the maths tasks to be more difficult, at a higher level. Fewer childish stories in the textbook.*

*Milena: I'd like the textbook to have a much richer graphic design hm... the maths problems should be much more difficult, well, and that's all.*

Above all, the students emphasised their willingness to gain practical knowledge and skills that they could use at school, but also in their everyday life. As their answers demonstrate, children want, in particular, to discover the secrets of the “real” world, and not only the fairy-tale content made up by the authors of textbooks. Apart from the subjects which, as they say themselves, are “necessary in life”, the students are also interested in what is currently popular, that is, fashion and computer games (Uszyńska-Jarmoc & Żak, 2013). The children are appealing to the creators of textbooks to pay attention to what the children really want to learn, and expressing their preferences, interests and objections in relation to the book they have to learn from all year round. At the same time, their expectation is that in the future, the kind of textbook will be created, that would make it easier for them to learn. The children are also reminding us of the necessity to create tasks that are more varied in levels of difficulty

To sum it up, one can conclude that the students who participated in the educational project have their own personal opinions and convictions regarding what they would like to learn at school and they can view their school textbooks both critically and constructively. The project encouraged the children to think analytically about the content that they would like to study in their school education, different learning strategies, the development of their passions and interests and their unique working styles.

## **DISCUSSION**

As mentioned earlier in the present paper, the development of the meta-learning skill is a conscious and intentional cognitive activity which develops thanks to the gathering of

knowledge about one's own learning, the development of internal motivation to learn, the shaping of the learning skill and assuming responsibility for the learning results. To summarise, it may be concluded that during the educational project presented here, the participating children had many opportunities to gain a better understanding of the level of their own knowledge (students, while taking part in the project, reflected upon their own interests, the classes encouraged them to be inquisitive and to ask the following questions: *What should I study in order to develop my interests? What would I like to learn at school? What really matters to me? How can I make use of the knowledge gained at school in everyday life?*)

During the classes the students had an opportunity to gather experiences regarding their way of thinking about their own learning processes and that of their classmates (they had the opportunity to think about the best learning strategy for themselves, what sort of tasks they need to consolidate given material) and to gain and reinterpret insights regarding themselves as pupils. The project enabled the students to develop the skill of researching and collecting the most interesting pieces of information and, of arranging them according to their own criteria (children ascribed various meanings to the content, they categorised the material into chapters and sections based on their own choices) and they selected materials according to their own criteria. Students included in their books, not only information related to their interests, but also elements which, in their opinion, should be included in every child's textbook. Almost every textbook contained material in the field of maths, Polish and science.

While working on their textbooks, children developed the ability to assume control over their own working style and the manner of its organisation. They independently reached the conclusion that they wanted to do a good job and hence some of them decided to work on their book in their free time, which was a very pleasant and big surprise for me. Children participating in the educational project were able to monitor their own learning process. While including various types of tasks in their textbooks, the students participated in many interesting discussions, they wondered how to make science more accessible to children and they applied these findings when writing instructions in their books.

The organisation of the project also provided the children with an opportunity to learn through co-operation. Thanks to participation in the project, students developed their social competences, the skill of conscious leaning, they discussed the manner in which their textbooks could be used by other people, they learned that working in a group often requires a compromise. Moreover, the children developed their ability to concentrate on a given task for a long time and to formulate conclusions on their working style.

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