

Project-Based and Task-Based Learning

in **Preschool Education**

MANUAL FOR TEACHERS

Praha **2023**





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Responsibility for the contents of this publication (communication) lies entirely with the authorial team.

The content of this publication (communication) does not reflect the opinions of the European Commission and the European Commission may not be held responsible for the use which may be made of the information contained therein.

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Project Authorial Team

Learning by Doing – Attainment of Basic Competences
in ECEC (ABC for kindergartens)



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Content

1. About the project	7
Introduction / Dear readers	9
2. The Child in the Educational Process	11
2.1 The Concept of the Child in Contemporary Preschool Education	11
2.2 The Specifics of Preschool Child Learning	12
2.3 The Needs and Well-being of the Child	15
2.4 Individualization as a Condition for Successful Inclusive Education	16
2.5 The Teacher in the Process of Education	17
2.6 The Family in the Process of Education	20
2.7 Example from Practice	20
2.8 Summary	21
2.9 Checklist for Teachers	22
3. Project-based learning	23
3.1 Theoretical background and definitions	24
3.2 Types of projects	24
3.3 Educational methods used in PBL	24
3.4 Project preparation	25
3.5 Advantages and challenges in applying PBL	31
3.6 Examples of implemented projects	33
3.8 Questions for the teacher	43
4. Practical examples of PBL	45
4.1 Project Rabbit	45
4.2 Project Insects	56
4.3 Time Machine	65
4.4 Space – Space Suit	74

5. Task-based learning	81
5.1 Theoretical background and definitions	81
5.2 What do we mean by tasks in TBL?	82
5.3 What are the basic types of task?	83
5.4 How do we implement the TBL process?	84
5.5 Advantages and challenges of TBL	86
5.6 The role of the educator	88
5.7 The role of the children	90
5.8 The role of the kindergarten	92
5.9 How to apply a task-based approach to various subject areas of preschool education	95
5.10 Questions for Teachers	127
6. Task-based learning and project-based learning – comparison	129
Glossary of terms	133
List of references and sources	137

1. | About the project

ABC for kindergartens (Learning by Doing – Attainment of Basic Competences in Preschool Education) is an international European Erasmus+ project (The Erasmus+ Programme, KA201, Strategic Partnerships for School Education, project registration number: 2020-1-CZ01-KA201-078464). The project is coordinated by the publishing house Nakladatelství Dr. Josef Raabe s.r.o. and includes three countries: the Czech Republic, the Slovak Republic and the Republic of Slovenia. Project partners include the Faculty of Education at the Charles University in Prague, the Faculty of Education of the Catholic University in Ružomberok and the Faculty of Education at the University of Maribor. In all participating countries, the following kindergartens took part in the preparation of materials for best practices and the testing of outputs: in the Czech Republic this was the Kopřivnice kindergarten and the University Special Care Kindergarten in Arabská Street in Prague 6, in Slovakia the Riadok kindergarten in Ružomberok and in Maribor it was the Studenci kindergarten.

The goal of the project is the improvement of the quality of preschool education by introducing innovative approaches and ensuring the complex development of preschool children's competencies. This can be achieved by supporting kindergarten teachers in acquiring knowledge about the effective application of project- and task-based learning in preschool education. The European Commission emphasizes the importance of developing initiatives that support and strengthen the development of key competences, for each individual from the earliest childhood. Many teachers just starting out have a tendency to base their work planning on a traditional, frontal approach. This serves the needs of the teacher, but it is debatable whether it meets the needs of the child. For this reason, more and more teachers in preschool education are turning to approaches with a greater focus on the child, where the needs of the children are the foundation. Two such approaches are project-based learning (PBL) and task-based learning (TBL).

Project-based learning is innovative, because its goal is to encourage teachers to move away from role of "directors" during the educational process, to that of "guides" instead. This publication will equip teachers with a customisable methodology that can help them expand their pedagogical strategies, thus supporting their professional development. It includes accepting child-oriented approaches towards creativity, independence, self-reliance, motivation towards learning, comprehending one's own rights and obligations, problem-solving, self-evaluation and assessment of the needs and competences of the children. The target groups of the ABC for kindergartens project are primarily preschool teachers, children in preschool facilities and providers of teacher education, such as universities and institutions for further education.

The first project output is a teacher methodology titled Project-Based and Task-Based Learning in Preschool Education. The methodology is intended for

kindergarten teachers looking for new ways of organising activities for children in preschool education. The methodology provides theoretical information on project and task-based learning in a well-organised and comprehensive format, namely introducing examples of best practices from both of these educational strategies. The goal of the publication is to equip teachers with their own custom methodology, approaches and techniques, tools and knowledge of how to utilise project-based and task-based learning in the education of preschool-age children.

The second output is a course of further education for school employees with the title *New Methods for Motivating and Activating the Child in Preschool Education*. Its goal is to equip the target groups with open educational tools, that are high-quality, freely applicable and available in their national languages. The goal of the educational programme is to further elucidate the principles of two innovative strategies – project-based and task-based learning in the context of current approaches towards preschool education.

Both strategies are trying to enable children to be as active as possible in educational processes, to ask questions and search for answers with others. Both approaches however make use of different techniques and their principles are made clear using practical examples. Above all, the teacher learns to take on the new role of the children's guide. Each part of the educational programme is prepared to help the teacher individually apply the given strategy in their practice. This section is followed by a set of examples from practice. The examples are taken from the activities of kindergartens participating in the Erasmus+ project *Learning by Doing* and are supplemented with commentaries from the teacher who implemented the projects in their kindergartens.

The innovative educational programme offers lessons on applying project-based and task-based learning at the level of kindergartens including verifying the acquired abilities and competences of the participants. The educational programme is free and open to all. The project ABC for kindergartens has set as its goal the development of a set of tools for teachers in preschool education, that will not only support educators in improving their techniques, as well as improving initial teacher training and ongoing professional development, but also support children in gaining various key competences. After completion of the project, all project outputs, including courses in further education for school employees, will be available as free downloads on the ABC for kindergartens website – <https://abc-kindergarten.eu/en/>.

We trust that the ABC outputs will become helpful tools for teachers, allowing them to better introduce innovative approaches to preschool education, and will therefore also contribute to increasing the quality of childhood education in kindergartens in all participating countries.

| Dear readers,

The publication you are holding in your hands has been produced thanks to a collaboration between teachers and representatives of higher education preparing future teachers. Experts from three countries – Slovenia, the Czech Republic and Slovakia – shared their experience and knowledge in the field of preschool education, providing inspiration for the daily practice of kindergartens. Together, they discussed how to bring more up-to-date educational trends into kindergartens, allowing children to develop in accordance with their individual dispositions, needs and interests.

The aim of this publication is to shed more light on the principles of two educational strategies – project-based learning and activity-based learning. These educational strategies fully reflect the child-centred model of education and training applied in contemporary pre-school education and emphasise the activity of the learner. Furthermore, their aim was to provide future and current kindergarten teachers with inspiration for practical use, in the form of concrete practical examples.

In the context of the social changes of the 1980s and 1990s, former communist countries experienced a significant transformation of both society as a whole and the education system specifically. Responsibility for the aims and content of education shifted from central planners and managers to the level of the classroom and school, while inspiration was sought abroad and new national curricula were formulated. The degree of responsibility that a kindergarten teacher has for educational outcomes today is high, although there are differences in both the approach to pre-primary education and the content of the curriculum in all three countries involved. Each individual teacher has to consider, select and design educational content, the forms and methods to use in order to achieve the fulfilment of the primary aim of pre-school education – the development of a child's personality.

When planning our work, we start from the principles of social constructivism. Constructivism is based on the belief that it is individuals, both children and adults alike, who create their own knowledge – by constructing it. Piaget commented on this by saying that children do not wait to be taught something, but actively understand the world themselves and attempt to comprehend it (Piaget, 1972); we discuss this concept in more detail in the second chapter of this publication. If a teacher's approach is based on constructivist theory, this means that they understand and respect that every child already enters kindergarten with a certain idea of how the world works, possesses certain knowledge, experience and skills, and 'works' with these as part of their further education. Teachers should therefore start by getting to know the child and use what they already know and understand as the basis for their further education. For this reason, the first chapter is devoted to the describing the child-centred approach to education and the changes that this approach has brought about in the un-

derstanding of the role of the child, the teacher and the family in the educational process.

The subsequent sections are devoted to individual educational strategies – task-based learning and project-based learning. Each of these strategies is placed in the context of current approaches to preschool education, its principles are explained and practical cases presented to show how it can be used in the kindergarten. Each chapter is structured in order to help the teacher put the new strategy into practice independently.

This section is followed by a set of examples of the application of each strategy in practice. The examples come from the work of the participating kindergartens and are accompanied by comments from the teachers who implemented them.

It might be tempting to skip the introductory chapters and focus only on this practical part. However, let's not do that. Without an understanding of the context, we could end up at an impasse, feeling that it doesn't actually 'work'. However, the opposite is true, the approaches presented lead to children being actively engaged, learning and achieving significant results in terms of developing key competencies.

We hope that the time devoted to this publication will not only benefit the reader, but also improve everyday practice within our kindergartens.

The authors

2. | The Child in the Educational Process

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2.1 The Concept of the Child in Contemporary Preschool Education

Early childhood education reflects the changes in attitudes towards the child and childhood in general that have occurred over the past several decades. We no longer view childhood as the preparation for adult life, but instead understand that it is an equally valuable stage of our lives. As a consequence, we see that the child has the same value as the adult, and should also therefore be treated with dignity and respect for their needs and rights. This updated view of the child causes us to place **a child-centred** approach at the heart of the educational process. The child-centred model of education transforms the traditional ways we work with preschool children. All educational objectives, methods, forms, organisations, all the conditions of education are now selected and organised with the best interests of the child in mind.

Educational goals are no longer primarily oriented towards the needs of society, but instead what is monitored is the development of the child's personality, support for their personal satisfaction, health, alongside the maximum possible development of their individual dispositions. The child is not an object of education, not a container that needs to be filled, nor are they some clay that requires shaping according to the ideas of adults. For child-oriented education, its characteristic feature is **confidence in the child** and in **their ability and desire to learn**. A child is encouraged to discover and know for themselves, and the teacher is no longer the one who controls the process, nor the more active participant.

The child-oriented model of education is based on the **active approach of the child**. We trust in children and their innate dispositions, and count on them to be partners in the educational process. In preschool education, this means that all activities organised by the teacher come in the form of an offer based on the specific and **current interests of the children**, on the observation of their play and the topics that are important to them. The proposed activities should be meaningful and interesting to the child, proportionate and appropriate to their needs and interests. The child chooses activities freely.

According to this view, the child is not a 'blank slate', but from the earliest age they are equipped with their own experiences, starting from their preconceptions and ideas about how the world around them works. In a pre-school setting, children should have the opportunity to think independently, to enrich, develop and restructure their existing knowledge. They should be able to ask

questions and seek answers, be encouraged in curiosity, creativity, and the exploration of different possible paths. At this moment, the role of the teacher changes, they are no longer guarantors of the transfer of knowledge, but guarantors of the creation of an environment in which the child can achieve the highest possible level of development. Therefore, in the planning of an educational programme, such a teacher must constantly react to the needs and interests of the child. And consequently, their primary task is to get to know and understand the child well. This is closely related to the teacher's skills in **pedagogical assessment**. It is only this understanding that allows them to select individual educational activities and appropriate forms and methods of education, to allow the child to remain independent and active. The child should not take the role of a passive recipient, or someone who only reproduces or follows the teacher's instructions. At the same time, the chosen methods and forms should respect the individual peculiarities and needs of individual children.

Apart from the importance of allowing the children to be active, we also have to prepare the conditions for their **self-regulation**. At a preschool age, children are not yet able to self-regulate themselves independently, but their development, which is based on external regulation, can occur only if the child grows up in a suitable environment. This represents the existence of a space for decision-making, for choice, but also for taking responsibility for one's decisions (age-appropriately). Children also need to be able to take part in their assessments and take co-responsibility for the learning process, to co-decide on the content of education.

In the child-oriented model of education, the educational process is understood as a mutual encounter – of a child with a teacher, but also of a teacher with parents. These mutual encounters should be built on trust, respect, acceptance, but also self-acceptance and self-perception as an individual who is part of society. Our diversity is perceived as reciprocal enrichment, so it is not an effort to teach all children everything, of the same quality, at the same time or in the same way. Mutual **communication, listening and understanding** are key. We trust children to 'know' in the sense that their innate dispositions lead them to learn new things. This generates a creative environment in which the child can freely and joyfully discover and learn, in a broader context. There is no transfer of isolated knowledge, something often incomprehensible to the child. The desire to know and discover is stimulated and appreciated. Mistakes are seen as an opportunity, not a failure.

2.2 The Specifics of Preschool Child Learning

For a preschool child, learning is a **holistic process**. Children will learn naturally during all the activities and situations that surround them. At a preschool age, unintentional learning prevails, but the child will gradually begin to learn even within intentional processes. Learning processes include child's whole personality – how they develop their knowledge, skills, abilities, attitudes and habits.

A child's emotions are of great importance in the learning process. The child's interest and intrinsic motivation are important for learning to be effective. They

are naturally interested in topics and content that are important to them personally. Learning processes associated with intensely joyful experiences and **emotions** have a positive effect on long-term contributions to the child's development. Of course, the child also firmly imprints on moments associated with negative experiences, but in preschool education we aim to prevent these.

The basic types of learning are observational learning, trial and error, habituation, sensitization, insight learning, classical conditioning and operant (instrumental) conditioning. These types of learning are take place in both childhood and adulthood.

theory

- Observational learning – learning by observing behaviour and its consequences. Example: A child observes a boy building a castle of blocks at the next table, placing blocks to fill each gap. The child then tries to imitate this.
- Trial and error – learning based on trying out different solutions, usually at random, until the goal is reached. The solution that works is then repeated. Example: A child wants to build a house of sticks. When they try to make the roof, the building collapses because the pieces of wood used were too large. When they try using moss, the structure holds. The next time they build, they will use moss for the roof.
- Habituation – getting used to and reducing the response to a certain stimulus. Example: At the start of kindergarten children are sensitive to the increased noise level and the large number of other children in the classroom. Gradually they get used to these things and no longer notice the higher noise level.
- Sensitization – the opposite of habituation, increase in sensitivity based on experience.
- Insight learning – perceiving new relationships and connections within a problem, solving it based on its similarity to another. Example: A child uses a stool when working at the kitchen counter. In a situation where they need to reach a book on a higher shelf they cannot reach, they apply their previous experience – they pull up a stool from the kitchen.
- Classical conditioning – a connection between stimuli where the connection is unconscious, one stimulus causes a certain behaviour. Example: The teacher rings a bell before starting to clean up the toys. If the child hears the bell, they stop their activity and start cleaning up the toys.
- Operant (instrumental conditioning) – learning occurs in three stages: situation, behaviour and reinforcement. Through reinforcement, the behaviour in a given situation is reinforced and repeated. Example: A child in the dressing room starts helping another child getting dressed. The teacher comments positively on this behaviour (reinforcement), making it more likely the child will do the same thing in a similar situation.

As we can see, **learning happens in many ways** – via movement, activity, thought, unintentionally, by testing, imitation, completing the activities of oth-

ers, repetition, verifying hypotheses, external reinforcement, sorting, questioning, attempting to find answers, through exercise, experiences, gathering information, etc. The child applies multiple senses and very often integrates several ways of learning at once (e.g., counting while taking steps, during movement or song), which helps the child creatively find a solution. At a preschool age, they have not yet developed and automated very many solution strategies (e.g. mathematical problems). We can therefore observe in practice that children who have free reign to explore the world will often find solutions that we as educators did not even think about, which are innovative and show the high cognitive potential and plasticity of the child's thought. This is one of the reasons why educators don't try to present ready-made information and instructions, but instead attempt to stimulate higher-order cognitive operations (analysis, synthesis, evaluation) during appropriate learning processes.

We know that preschool children are curious, but every child also has their own **learning style**. These are the characteristic ways in which we perceive and remember information, how we think, solve problems and make decisions. They evolve from an innate core, but can change during our life, either intentionally or through external influences. If teachers want to teach a child something new, they need to know various teaching styles. This will allow them to get to know the individual's learning style better. One way to lead a child to active learning is using S. Saifer's knowledge of teaching styles. For example:

According to the training approach:

- active – passive,
- quiet – loud,
- dependent – independent,
- slow – fast.

According to the prevailing sensory approach we recognize different **learning types**: auditory, visual, tactile, kinaesthetic.

theory

According to some experts, learning styles are also related to **different types of intelligence**. Gardner's theory of intelligence says that each child has multiple kinds of intelligence (linguistic intelligence; logical-mathematical intelligence; spatial intelligence; musical intelligence; body-movement (kinaesthetic) intelligence; interpersonal intelligence; intrapersonal intelligence; scientific intelligence), but of these some (2 or 3) will predominate, meaning the child uses them more often. Discovering a child's preferred type of intelligence and learning style can help us significantly when planning and creating a learning strategy.

This knowledge is important for educators, because it is at a preschool age that the child naturally performs a variety of different activity types and through them enriches their experience, develops precepts (schemes) of the world and builds their personality. Teachers should consider the fact that children's learning styles are evolving. Therefore, they should present the children with as many different ways of learning as possible, so they can come to know themselves and, based on their own experience, which style suits them best. That is

why it is so beneficial **to observe a child** during free play, when the multifaceted competencies the child has achieved can be fully applied. It is a unique opportunity for the teacher to identify not only the child's developmental level, but also to monitor their problem-solving strategies, dispositions towards learning and topics or problems that are interesting and important to them at the time. The goal is to develop the child's potential through meaningful learning.

If a child feels safe in the classroom or group, if they can communicate with others, and actively participate in activities that take place in the classroom (both unguided and those initiated by the teacher), then the child can develop those learning processes. Their quality can be monitored by the teacher using so-called "learning dispositions". These **learning dispositions** are prerequisites for educational processes, lifelong learning, motivation and the ability to cope with and co-create new demands and situations. Dispositions to learn can be divided into five main areas:

- taking an interest
- being involved
- persisting through difficulty or uncertainty
- communication with others
- taking responsibility (Carr, 2001, p. 23)

Teachers therefore monitor not only which activities and at what level the children perform them, but also how these activities reflect the children's knowledge, skills, abilities, and attitudes (competencies). In our current conception of education, we are aware that the children's future is wide open and so prepare them for life in a world that will be sure to make demands of them that we cannot even imagine at the present time. Consequently, our pedagogical work is not focussed on the transfer of specific knowledge or skills. Rather, we strive to develop the child's dispositions towards learning, enabling them to learn effectively, develop their potential and prepare them to cope with the challenges that lie ahead in adolescence and adulthood.

2.3 The Needs and Well-being of the Child

In addition to the above, another very important condition should be met for children to learn successfully – they need to feel good. We are aware that not only adults, but also children have **needs**. The first pillar required for existence itself are the physiological needs. The child should have a stable regime and satisfy their need for hydration, food, rest, defecation. If any of these needs are limited, the child will find it more difficult to concentrate and will be outside their comfort zone. There is a further need for safety and security – children need to know that a teacher is there for them, will help and guide them. We also need to ensure the environment is adequate for the children in regards to the fulfilment of their need for love, acceptance, belonging. Every individual needs to feel loved. Also, it is a fact that the child's presence enriches others, and they are enriched in return. If the child has just done something that is ben-

eficial, or begun to move towards progress, they feel the need for recognition and appreciation. The child doesn't always require some material reward or official recognition, sometimes as little as a smile, a nod, etc.

theory

These first four needs are described by A. H. Maslow as deficiency needs. The final need, the need for self-realization, is growth. The child fulfils their abilities and intentions. For learning processes to take place, the basic biological and social needs of the child should generally be met.

The child needs to have an overall feeling of well-being (holistic concept). The child needs to be able to **communicate** with others and actively **participate** in activities and events in the kindergarten (therefore for example, a child with little knowledge of the language of instruction cannot fully develop themselves or take advantage of learning opportunities, because participation is hindered by language barriers). The educator therefore strives to set up the child's environment so that they can play freely, **explore, experiment, and interact with others**. The child needs to **feel they belong** within the group of children and in relation to the teachers.

One of the needs of a child is personal **well-being**, which we could generally describe as a long-term emotional state in which a person shows satisfaction with their life. Well-being refers to a state in which a person is well. Well-being is also related but not synonymous with: "satisfaction" and especially "life satisfaction", followed by "welfare", "pleasure", "prosperity" or "happiness". It is therefore a long-term condition – at the scope of days to weeks, which can be influenced by current experiences or both current experiences and mood. It is characterized by stability over time and consistency in various situations.

We can perceive personal well-being from two perspectives, referred to as subjective and psychological well-being in the professional literature. Subjective well-being is associated with pleasant or unpleasant emotional experiences and a conscious evaluation of one's own life as a whole – life satisfaction. Psychological well-being is the result of carrying out positive life efforts, deprivation of independence, self-acceptance, harmonious relationships with others, control over the environment in which one lives, one's life goals and personal growth. These two views complement one another.

tip

From the knowledge we have about personal well-being, we can influence a child's level of personal well-being by creating good habits through teaching at a preschool age (we teach children conscientiousness – an important predictor of personal well-being).

2.4 Individualization as a Condition for Successful Inclusive Education

Today's children demand new approaches, new directions, forms and, finally, new modern methods focused on activity, creativity, and an interest in developing the individuality and uniqueness of the child. The current trend has as its goal the independence of those being educated, their self-reliance, autonomy,

etc. This leads to the highest degree of development of the child's personality, namely personalization. Full personalization represents the personal identity and freedom of the individual in the process of self-creation. Individualization is an approach towards education and training, as we have stated, in terms of diversity, individuality, uniqueness, personality, assumptions, specificity, or personal pace. It is based on precisely defined rules, it respects democratic and humanistic principles. It should always be based on the principles of natural childhood development.

In the educational process, the teacher always records the results of assessments according to the rules and principles of individualization, resulting from the principles of natural childhood development. If necessary, also according to the assessment results and recommendations of a psychologist, school counsellor or special pedagogue. The teacher supports children's educational processes through constant, free, structured observation, or through interviews and drawings, but also by using analyses of the children's work to identify the characteristics, abilities, knowledge, interests, peculiarities and social or cultural specificities of individual children. By constantly learning, they can determine what the children know, what they are able to do on their own, when they need the help of a friend, teacher, educator, assistant or other professional.

Above all, it is important for each child to work at the level of their own potential, their abilities, in terms of personal pace, or specific and special needs. This can only be achieved through constant targeted observation. By continually getting to know the children, the teacher can also discover character traits, mutual friendships, expressions of empathy, mutual tolerance, the ability to know and the willingness to help, but also cohesion among children as well as, very importantly, the atmosphere and overall climate of the class in which the child spends much of the day. Individualization in care and education is realized through tasks, games and activities tailored to each child.

Based on the above, it is necessary to emphasize what we mean when referencing individualized learning or individualized education, in other words individualization is when a child works on assigned tasks modified to the child's pace, abilities, knowledge, interests, personality, social or cultural specifics. At the same time, it is the teacher who compiles the assigned tasks. The children will subsequently choose them, because they are based on their capabilities, and will continue to move forward within the framework of personal development. The "Step by Step" program (1996, 2000) offers many inspirations for the application of individualization in preschool education.

2.5 The Teacher in the Process of Education

Being a teacher is a beautiful and challenging profession that places significant demands on a person. Teachers should be physically and mentally fit. They accompany the children during educational activities. Natural authority is welcome, but at the same time teachers should be intimately familiar with empathy, openness, sensitivity, patience, and other personality traits. Teachers should respect the children, their curiosity and desire to know new and interesting things.

Wanting to understand children does not mean fulfilling their every desire, but only what is beneficial to them.



In the education of preschool children, Vygotsky understands learning as a process in which another person helps the learner master goals beyond what they are capable of mastering on their own. This is called the zone of proximal development. The teacher supports the child – we can also see this in the motto of M. Montessori. She asked the child how she could help and the child replied: “Help me do it myself.” The role of the teacher has changed. Today, a teacher is more of a partner who guides and helps the child on the path of learning.

Preschool education has certain specifics, and the role of the teacher relates to that. We present three basic roles of a teacher: inspirer, facilitator and consultant.

- **Inspirer** – creates conditions for the children’s development regarding their capabilities, needs and interests. Accepts the natural developmental specifics of a preschool child. Motivates children, supports children’s curiosity – the teacher is the inspiration. Every facet of their actions, how they talk and act towards the children, teaches the children something. The teacher’s personality is their most important “work tool”.
- **Facilitator** – the child’s guide on the way to discover the surrounding world, helps the child understand the world and their relationship with it. The teacher creates conditions that lead the child to think, comprehend, understand themselves and others. The teacher encourages the child to be active and explore. The teacher develops the child’s personality, builds on what they already know and leads them to think independently.
- **Consultant** – creates conditions for friendly communication, based on trust. The teacher leads children to self-reflection. The teacher is ready to help, advise, and support the child.

A teacher whose objective is to lead children to effectively acquire knowledge should respect certain child-centred principles:

- The teacher considers learning to be an active process, applies activity and experiential forms of learning in the educational process.
- The teacher encourages and stimulates the child to obtain new information, supports their curiosity and initiative, considers motivation to be the key to learning; experience is crucial in the learning process.
- The teacher creates appropriate pedagogical problem situations that stimulate the child’s critical thinking.
- The teacher is a facilitator, partner, and cognitive support for the child.

The teachers thus provide the children with **gentle interventions** – they wait and observe children’s activities at a respectful distance. Their approach is based on **a positive attitude towards the child** and an orientation towards the child’s

potential. Teachers **strive to get closer to the children through psychological closeness** and use facial expressions to **reassure the children** (affirmations). They support the children in **independent choice and decision-making**. The teachers enable and support the children in **taking reasonable risks**. They encourage the children to experiment, even though the purpose of a child's activity may not be completely clear.

The teachers should activate children's natural need to know. It is important that children are supported and encouraged to discover. By constantly creating a **stimulating environment** and **inspiring situations**, their interest is aroused. This stimulates conscious activity (the motivational aspect), leading to the development of cognitive ability (the cognitive aspect).

A very important goal is to **support the development of a child's own identity** – children build a picture of themselves as a **"competent learner"** who is able to learn, is ready to do so and wants to learn (being able, being ready, being willing). If we manage to support children in their development in this way, we have done our best to prepare these children for the next stages of life as well as the educational and life challenges that await them (Carr, 2001).

2.6 The Family in the Process of Education

Pre-school education is an interaction of three actors – the child, the kindergarten and the family. In the current concept, the family is an equal partner of the kindergarten, and the institution's role is to complement family education. The main responsibility for the child's development and learning lies with the family. However, sometimes a family cannot or does not provide children with what they need for their healthy development, and at that point the kindergarten can step in to help balance the educational opportunities of all the children. The foundation of effective collaboration is in partnership and communication.

A partnership approach means that the relationship between the family and the kindergarten is formed on a non-hierarchical basis. The child's parents or legal guardians have the right to influence events in the kindergarten and to participate in the activities that take place there. The family can take part in the development of school and class curriculum documents, be involved in the educational process, help with in the implementation of various educational and social events and, together with the kindergarten, build a mutually supportive local community.

However, it can sometimes be difficult for parents to enter into a functioning partner relationship with the kindergarten, as the traditional view holds that this is inappropriate. Therefore, the kindergarten should take steps to help families become active contributors to early childhood education.

tip

2.7 Example from Practice

To facilitate the harmonious entry of new children into preschool education, the kindergarten prepares an adaptation programme for children and their parents. Parents are introduced to this programme when they enrol at the kindergarten. The programme makes preparations allowing the parents to be present in the children's group with their child for as long as the child needs. On average, parents spend several hours a day in the kindergarten for two to three weeks. The programme is adapted according to the children and their parents. The parents know they are welcome, participate with their children in all the planned activities, talk with the teachers, get to know the operational staff and discuss everything that is happening in the kindergarten with them. The parents only leave the kindergarten when the child has adapted and no longer requires their presence.

The benefit of this cooperation is a safe climate in the kindergarten for everyone, heightened parent interest in the educational conditions of the kindergarten, mutual trust between all the parties involved, throughout the child's attendance at the kindergarten. Parents can actively participate in all kindergarten activities and are frequently encouraged to do so, being informed in a proper and timely manner. They can be with their child throughout the day, comment on educational activities, participate in joint trips, outdoor activities, etc. They can have a say regarding the kindergarten's physical facilities and even help to shape them. We can organise creative workshops where children, teachers and parents work together to create new and original tools. They can enrich, comment and reflect on class educational programmes, discuss the sports or cultural activities of the class. It often happens that the parents themselves organize such events for children in the kindergarten.

Parents often request discussions with specialists or consult on their children's needs with a special educator. The parents themselves bring the topics for these discussions. They also comment on the children's group regime, the establishment of children's group and kindergarten rules, enrich the school library with quality children's literature, and bring in new suggestions for school meals. At joint meetings they are informed about the projects the kindergarten is engaged in. Teachers introduce parents to innovative educational methods, which are then presented to them in demonstration lessons.

Parents also take care of the school garden together with the children, lead the children in gardening, spend time together in the kindergarten garden, supply the kindergarten with seedlings, etc. The kindergarten is open to all suggestions from parents and sees parents as important partners who actively participate in their children's education at the kindergarten. The active involvement of parents in the life of the kindergarten is fully in line with national education plans

(curricular documents), but also based on the qualitative framework Competent Teacher for the 21st Century.

2.8 Summary

The child-centred approach to education is characterised by placing the child and their individual needs and interests at the centre. Both the kindergarten and the family should participate together in optimising childhood development and achieving the children's maximum potential. The school must therefore prepare appropriate conditions and formulate its school and classroom curriculum in such a way that the children and their needs are respected at all times, that they can exercise their innate disposition to learn and be active and take co-responsibility for their education. The ways in which teachers educate children have also changed; the primary educational methods are those that allow the children to be active and to think. In the following sections, we will introduce two comprehensive approaches that are fully consistent with the ideas of child-centred education – activity-based learning and project-based learning.

Key words: personality-oriented model, concept of the child, child's needs, types of learning, individualization, role of the educator

2.9 Checklist for Teachers

1. Do all children have the opportunity to participate fully in all learning situations?
2. Do all children in the group feel ok (well-being)?
3. What affects the subjective well-being of “our” children?
4. What barriers to participation and communication do the children face? How can I actively help them cope with these obstacles?
5. How can I further promote the social belonging of children and teachers in a group?
6. Do I regularly observe and document the play and activities of all children in the group (not only children with special educational needs, but also children whose development is appropriate for their age). Do I spend a fair amount of time observing each child? Are these observations a starting point for preparing environments, games, materials and stimuli for children?
7. Am I preparing the conditions and educational offer to enable all children to learn? Are there any children who have not responded to what I’ve offered nor to environmental cues? What kind of stimuli do they need?
8. Do I use every opportunity for situational learning, based on the activities of individual children in the group (e.g. during free play) and opportunities in our environment?
9. Is my offer varied enough to reflect the needs of all children (different learning types, the interests of girls, boys, developmental specifics, etc.)? What level of exploration do I observe in each child?
10. What learning dispositions have I observed in individual children in my group?
 - 10.1 Expressed interest - What was the child interested in during this observation? How did I discover this?
 - 10.2 Engagement (bias) – How do I recognize a child’s preference?
 - 10.3 Persevere in difficulty or insecurity – How do I recognize a child’s endurance?
 - 10.4 Communicate with others – How does the child communicate with others?
 - 10.5 Accept responsibility, cooperate in the learning community (group learning), take accountability – How do I recognize that a child is engaged in group learning and can accept responsibility?
11. Am I taking every opportunity to enable the children to develop a healthy self-concept and perception of themselves as competent in learning?

3. | Project-based learning

3.1 Theoretical background and definitions

Project-based learning has a long tradition in education. It first appeared in the USA in the 1920s and is associated with J. Dewey. He came up with the idea that children learn better at home and at school, if their knowledge is real, meaningful, usable and has a connection to practical life, and he founded his Laboratory School on this principle. Its main feature is its emphasis on a child's own activity and learning based on their own, rather than a mediated experience. The ability to solve specific situations and problems leads to a deep interest in the child, to an increase in their motivation for learning and thus to better educational outcomes compared to traditional methods of education. Under the traditional concept of education, knowledge is passed on to the child by the teacher, where the child is passive or follows the precise instructions of the teacher. On the other hand, an approach in which the child's activity is emphasized is characteristic of reform pedagogy and alternative pedagogical approaches. J. Dewey's ideas were subsequently developed by his student W. H. Kilpatrick, who published an essay in 1918 called "The Project Method".

Project learning is considered a form of situational learning and is based on a socio-constructivist concept of education. Children gain new knowledge and skills **by thinking, finding solutions and using their previous experience** in an effort to solve a real problem or situation. They have to apply a wide range of current knowledge, **requiring the integration of knowledge from different disciplines** and areas of human life. As a result, the child does not learn individual things in isolation, but instead a multidisciplinary, holistic approach is applied. The acquired knowledge is not superficial, instead the child digs down deeper into the knowledge. What the child learns is logically and meaningfully connected for that child. When solving a problem, the child applies their previous knowledge and skills from different areas, enriching them with what is new. The child learns from their **own direct experience**, rather than indirectly.

Project learning is a method of education, **in which children work independently on a complex task** and where **they solve a specific problem associated with real life**. The project is therefore directed towards a goal and at the end of the project there is **an output**. This can take a material form (e.g. an item, object, book, etc.) or an immaterial form (e.g. a theatrical performance, a class trip, etc.). In project learning, children will independently search for ways to solve the problem they have formulated, plan concrete steps and divide tasks. Thus, the activities are not implemented in a way the teacher thinks through and plans in advance. During project-based learning in kindergarten, **the impulse for the project can be the teacher's incentive, the children's proposal or reaction to their current situation** (more on this in the next section).

In current pedagogical practice, we sometimes encounter a misunderstanding of project learning. Some teachers confuse having a project day focused on a certain topic (for example, Earth Day, Milk Day ...), where all actions and ac-

tivities during the day are adapted to this topic, with project learning. Such a one-time project, which is elaborated in detail with assignments and material from teachers, cannot be called project-based learning.

3.2 Types of projects

Projects can be differentiated according **to their duration**; they can **last several months** (long-term), **weeks** (medium-term) **or days or even hours** (short-term). In preschool, short- and medium-term projects are most appropriate, as it is still difficult for such children to pursue long-term goals. In kindergarten, projects that are based on the current situation (e.g. a planned trip) and tend towards the short-term are especially effective. However, a short-term project can grow into a long-term project if the children are interested in an issue and want to pursue it further.

Another way of structuring projects is in terms **of the number of participants**. Here we are talking about **group** and **individual projects**. A group project can be carried out at the children's group level, or it can involve only a certain group of children in the children's group. An individual project is a single-child project.

tip

When deciding on the type of project, it is important to take into account the developmental aspect. At an early age, children are not yet able to sufficiently communicate, plan, agree on and assign roles. For younger children, individual projects or projects for smaller groups are therefore more suitable. At this age, the most appropriate are short-term projects based on a current situation or activity the child is engaged in. When observing the children's interests, teachers can utilise their questions to facilitate the creation of a project (e.g. constructing a kite, building a garage for cars, etc.), and one child's project may inspire and appeal to the other children to join in. For older children or in mixed-age children's group, projects can be carried out by the whole group.

3.3 Educational methods used in PBL

Other educational methods apply to project-based learning, whether verbal, demonstrative, involving practical skills or experimental methods. The basis of every project is a **properly formulated question or clearly-presented problem**. Such a question must be understandable to the children, and it must be possible for them to answer it, such problems must be solvable and interesting to them. At the same time, they must have the opportunity to learn something new, something essential.

The first step is to ask: "What do we know? What can we do?", followed by "And what do we need to know and do?" We use verbal methods – **discussions and brainstorming**, which allow children to formulate ideas, correct them, look for different solutions and make plans for further progress. Out of the verbal methods, we work with text, optionally use simple records and diagrams to provide the children with the necessary information.

Concerning illustrative methods, we can use observations (of objects, phenomena) or look at pictures, photographs or video clips. Methods utilising practical skills include research activities, working with tools or instruments (gluing, cutting, building, etc.), but also artistic and physical activities.

Methods are chosen according to the problem the children need to solve, rather than for the method itself. Each method selected must support the children by allowing them to suggest solutions, plan partial steps, gradually implement things and finally achieve the project output.

3.4 Project preparation

The most fundamental question we encounter in practice is how to teach children through project-based learning (PBL). It is true that young children are unable to work like older children, but children in the 4- to 5-year-old age group are already sufficiently prepared to communicate and gain new knowledge and experience. This is a prerequisite for the proper application of project-based learning.

Project-based learning has **three basic phases: project preparation and planning (phase 1), project implementation with the children or execution (phase 2) and reflection on the project (phase 3)**. All these phases have their meaning and their specifics. Although different classifications of phases are presented in the pedagogical literature, some phases are divided into even more specific parts. For example, Larmer et al. (2015) talk about four phases of PBL:

theory

- Phase 1: Project launch;
- Phase 2: Building knowledge, understanding and skills;
- Phase 3: Product development, criticism and review;
- Phase 4: Product presentation.

Phases 2 and 3 are separated mainly because older learners may decide during the progress of PBL that they need more information and move from Phase 3 back to Phase 2, before moving forward once more. In pre-school education, awareness of the 3 phases will suffice.

Consequently, several key moments occur again and again throughout the course of the project, and these moments are repeated in a spiral:

- 1. Observation, perception of the situation** (the teacher alone, the children together with the teacher, the children alone).
- 2. Reflection on the problem together with the children – searching for a common answer** or answers to questions concerning the achievement of the partial objective of the project and jointly formulating the subsequent steps (the teacher as a facilitator allows the children to formulate questions, find their answers and their solutions).
- 3. Action** – carrying out the activities.

4. **Documentation of one's work** (ideally, the children will prepare this documentation as independently as possible).
5. **Communication** – asking reflective or assessment questions with the children.
6. **Formative assessment** of the process of the phase.

The project scheme can be represented as a spiral – the project runs in cycles as the phases repeat. At the same time, it evolves linearly over time. The task of the teacher is to allow the children to “have their voice heard” as much as possible in all phases of the project – to actively and genuinely participate in the development of the project.

First phase – Preparation

The **topic is chosen** in this phase – the impulse might come from the teacher, from the situation the children are currently experiencing or some topic suggested by children themselves. In practice, there may be a moment when the topic crystallizes out of a joint discussion with the teacher and the children. Project-based learning uses knowledge, experience, abilities and skills to solve a problem. It is the **identification of the problem** that is very important in the beginning. If the problem is suggested by children or arises from joint discussion with them, it will require preparedness and flexibility from the teacher. They should adjust the daily schedule to create suitable conditions for a more specific identification and characterization of this problem or topic.

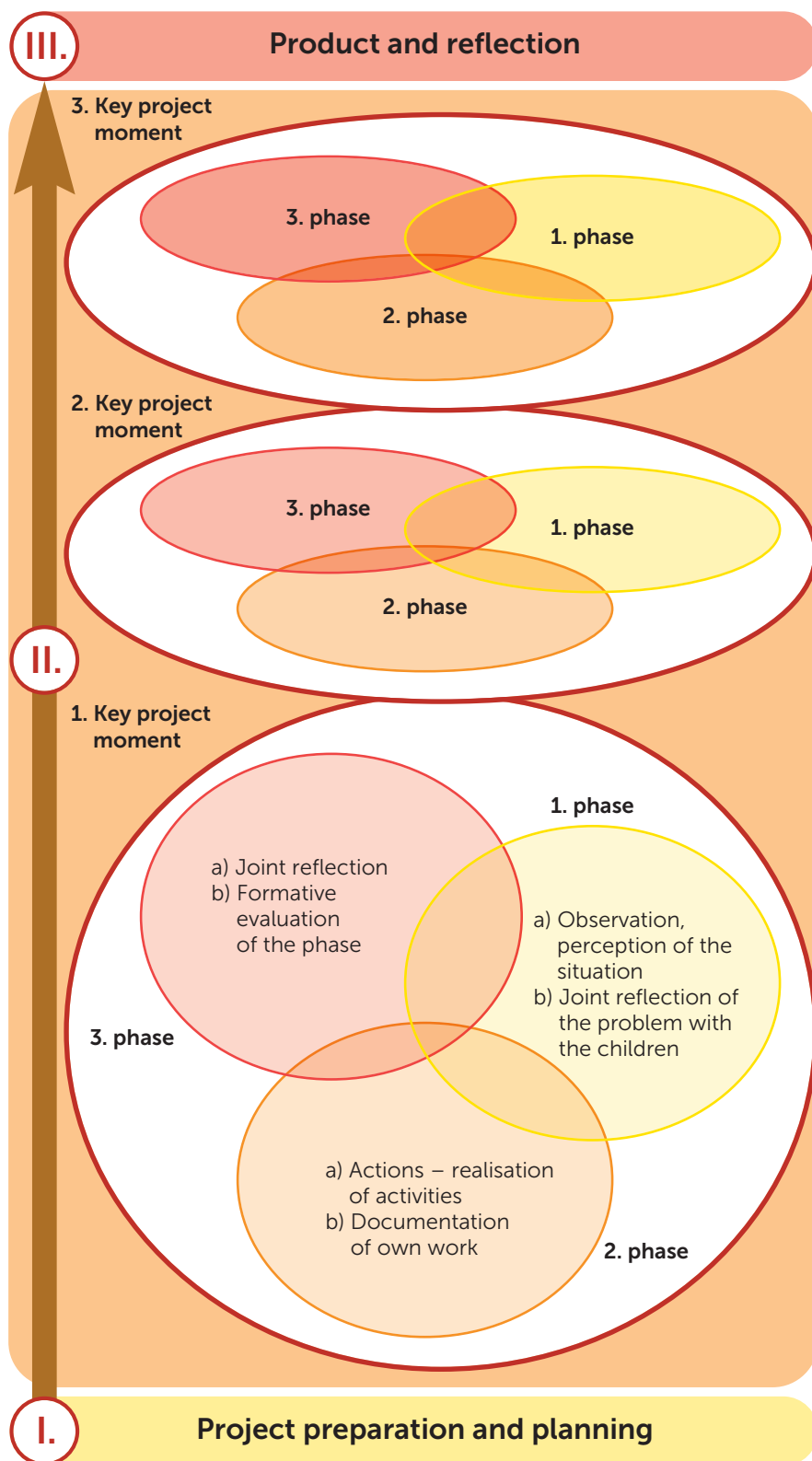
For the proposed topic (or problem), the **goals** will be set, which will be enriched with **tasks** and appropriate **resources**. Based on the mapping of the topic and the expressed interest of the children, a **timeframe** for its implementation will be proposed – the duration of the project. It is up to the teacher to present the basic topic and up to the children whether to accept it. We must not forget the interests of the children; it is in their interest to learn through the project. Getting acquainted with the topic can take several days and only then will a certain project structure be set up. Processing methods will be suggested, which may be modified or changed during implementation. The key points to be determined should be obligatory for the implementers, but they can expand on them during the project. It is good to talk to the children in advance about the process, to agree on strategies together, or suggest possible alternatives.

A project does not have to involve the whole group of children. The composition and size of the group of children involved may change during the project. There may even be several projects running in parallel in a children's group.

Typical activities characteristic of the first phase:

- an “Entry Event” occurs,
- a key question is formulated,
- a list of children's questions is created,
- the main products are discussed,

PROJECT DEVELOPMENT



Spiral project time flow diagram

- the project plan is suggested,
- the first steps are completed and recorded,
- children begin searching, reading (flipping through books, looking for interesting things in illustrations, picture books) or otherwise obtaining primary information.

Entry into the project should be a **special event** that will arouse the children's interest in the activity. For kindergarten children, the event can be divided into several parts over multiple consecutive days. Entry can take the form of: excursions, watching videos, films, the teachers reading interesting provocative texts, discussions, conversations, real or fictional correspondence, etc. The starting point can also be some experienced (unplanned) situation that interests the children, and which can form the basis for further research into a problem and the development of the subsequent parts of the project.¹

The formulation of the **key question** should take place after the Entry Event, and should be formulated together with the children. From the beginning, the children are involved in the entire preparation and management of the project. The question is intended to help the children focus on **achieving their goal during the project**. It has to motivate them.

List of children's questions. Immediately after the Entry Event and the formulation of the Key Question, the authors recommend writing up what we know about the topic and what we would like to know in a single place. If the children are doing this for the first time, we can help them with our own suggestions, give the children time to think, record the questions in their own words. Then we look at what will be the **main output / product** of the whole project. We describe it in more detail so we know what it should look like and together we create a **work plan**, showing how we will proceed in the completion of the project.

Second phase – implementation

The planned model becomes a reality. The goals that arose at the beginning of this project-based learning exercise are slowly beginning to be fulfilled.

However, it is crucial to note that what often happens (especially when the topic is suggested by a teacher) is that there is a mismatch between what we planned and how it how the project will develop. The important thing is therefore to **remain flexible**. The children are the ones completing the given project, and the initial goals are often updated throughout the process.

In most cases, projects designed by teachers are easier to manage than those designed by children or stemming from a joint dialogue. With a teacher-proposed topic (or problem), the teacher can imagine what will need to be pro-

¹ E.g. discovery of the settlement of a colony of bees in the school garden, observation of their capture by a beekeeper and a subsequent project on the topic of bees with children with the involvement of a beekeeper and other external actors, trip to observe bees at a science centre, etc.

vided during the project implementation, long in advance. In the case of a topic (or problem) proposed by the children or emerging from a situation in the classroom, the teacher acts as a **facilitator to help the children** figure out what they will need to implement the project. Together with the children, they will uncover further goals while working on the project itself and they will also need to complete these in order to finish the whole project.

The actual implementation of a project also depends on the experience of the children with their previous exercise in project-based learning. If the implementation of PBL is new to them, it is necessary to spend some time explaining what project-based learning is about, how it takes place and what it requires. If children already have experience with project learning, a good thing at the beginning is to discuss their project implementation experience, what projects they have already implemented and what they learned during that implementation. Finally, we can talk about the ways they can use their previous experiences in the implementation of the current project.

In this phase, the children apply cooperation, work on common problem tasks, use their creativity and imagination, try new approaches, carry out research activities, etc.

In kindergarten, the role of the teacher at this stage is to provide support, help the children find answers to their curious questions, but also support the development of critical thinking, and other problem-solving competencies. Some experienced educators recommend creating a “project wall”, on which they can gather together the information, questions, tasks and, in fact, anything they find, acquire, invent, design or do during the project.

tip

In this phase, it is also very important to continually work with the questions that the children – together with their teacher – determined and wrote down (using pictures and pictograms) in the first phase. During the project, the teacher may feel they have to help the children. One of the basic principles, however, is that in project-based learning, children progress at their own pace and according to their own needs. Therefore, if a teacher is too involved, the children’s perception will be that the teacher is in control of the activity. At the same time, however, teachers should provide sufficient support and ask appropriate questions to guide the children in the appropriate direction towards solving the project.

During implementation, there should also be a phase where we check whether the work on the project (on the final product) is continuing as expected and planned. This can also be a check to see whether the final product has achieved the required level. There are several important reasons to apply constructive criticism in PBL:

- It helps children learn to work independently.
- It helps children determine the criteria for creating a quality end product.
- It supports critical thinking, collaboration and communication skills.

We must not forget the overall assessment. Among the children, we will mainly assess the acquisition of key competencies, which we evaluate on the basis of observation and interviews. We must therefore already consider this during the implementation phase and pay attention to how involved the children are in the solution and what they have each contributed.

The third phase – reflection

The last phase is a grand culmination of the efforts of everybody involved. **It is a significant event** that also requires proper presentation. Usually with the participation of parents and loved ones. But this is also the time for the children to look back and consider what was good in the preparation and implementation, what helped them learn the most. Furthermore, they should consider what became a problem and how those problems were dealt with. Let them explain the procedures they used to complete the project. Children are encouraged by teachers towards self-assessment and reflection on what they have learned throughout the project.

Depending on the project, presentation of its results may be in the form of a public presentation with an audience present. But it can also take the form of a short video that the children prepare in cooperation with the teacher. Or they can present their results in writing, again with the teacher's help. We consider public presentations to be the most suitable for children in kindergarten, where in the presence of parents and other close relatives, the children can talk about their new experiences and the activities that helped them gain their new knowledge. In the preparation of this presentation, the children should also participate and help in compiling the event program, the decorations or refreshments.

After the presentation itself, it is advisable to once more look at the whole course of the PBL and its individual phases. Evaluate what the children could have done better, but also praise them for a job well done, for successful co-operation with each other. An important place in this reflection is leaving enough space for each child to express themselves and also **for everyone to evaluate what they have learned** (this does not have to be exclusively things related to the topic of the project). The teacher can help the children in their self-assessment with appropriately worded questions (What did you do...? What would help you...? etc.). The most important thing is to get answers to the key question. Success should also be celebrated properly. In addition to the children's self-assessment, the teacher also evaluates the extent to which educational objectives have been met in accordance with the curriculum documents – what competencies have the children applied and developed, what have they learned, what areas need to be developed in the next period?

3.5 Advantages and challenges in applying PBL

The advantages of PBL

- Project-based learning **naturally motivates** children to make the effort to solve a specific problem. This leads to intensive learning of new knowledge and skills.
- Learning does not take place in simulated situations or separated from real life, but is **directly connected with something that is close to the heart and meaningful to the child**.
- The child naturally **acquires knowledge from many different fields**, meaning that an interdisciplinary approach must be applied.
- In project-based learning, the child learns to **solve problems, plan and organize time, cooperate and communicate with others and be responsible**. They develop self-confidence in their own abilities and awareness of their own value, because they perceive that they are somehow contributing to the common good.
- **Many competencies** that are necessary for life in society **are being developed** and this development is difficult to achieve within the traditional concept of education.
- Project-based learning also allows teachers to find creative ways of working.
- Project-based learning allows **other partners to be involved** in education, in addition to children and teachers. They can be parents, grandparents, experts in a particular field (e.g. a beekeeper, bricklayer, gardener) or institutions. Children can turn to others for help and to get the information they need. Various people can be actively involved in the implementation of the project, they can, for example, help children with the preparation of materials, researching a phenomenon, etc.

The challenges of PBL

The role of the educator

The teacher plans educational activities based on the interests and needs of children and should be prepared to listen to them and to respond appropriately to their suggestions. This assumes teachers will plan their work based on pedagogical diagnostics; they should know the children very well. By observing the children's needs and interests, the teacher will find opportunities for project implementation. Abandoning their traditional teaching role they will instead take on an advisory role. **The teacher becomes a guide and consultant for the children**, encourages them to be independent, responds to their ideas and becomes a "member of the implementation team". The teacher does not have to think through everything in detail, plan, present it to the children and ensure that the goal of the project is fulfilled. Instead, their primary task is to prepare

an educational environment that will allow the use of project-based learning and help children solve the problem in their own original way.

The teacher should provide the educational goal, which is based on a curricular document, and present it to the children in the form of a specific problem to be solved. The activities performed in solving the problem then fulfil the set educational goals. At the same time, however, the children must be allowed to pursue **their own goal**, which is the output of the project.

Teachers should respond to children's suggestions, **be flexible**, be open to different possibilities and **provide just as much support as the children need**, while keeping in mind the underlying educational goals at the same time as the children's obvious goal (the project output). **The teacher is in the role of advisor**, rather than the role of director. This leads to a fundamental change – the child participates in the management of the entire project together with the teacher. During the course of the project, the role of the teacher may change, from facilitator to helper, from assistant to expert or consultant.

In this context, it should be noted that there are teachers who do not like project-based learning. They prefer traditional methods of education, where the teacher has the educational process under control, carefully prepares and plans everything. The idea that teachers will suddenly "not have the situation firmly in their hands", not be able to predict how the process will develop, can fill such teachers with great uncertainty. They do not feel comfortable taking the role of just another member of the team. For these teachers it can be helpful to utilise their planning habits at the very start of project-based learning, think about possible alternatives in advance and prepare for how the children are likely to solve the problem, what steps will need to be taken and what resources will be provided. They will then be prepared for any situation that the children could come up with regarding a possible solution. Gradually, with increasing experience, they will have more confidence in the children's abilities and will be able to back away from careful preparations.

The role of the children

The key element in the successful application of the project-based method is the child. Using project learning means accepting that this is a children's project – the children should feel responsible and play a key role in successfully managing it. In practice, this means that the child takes the goal of the project as their own (identifies with it) and decides to fulfil it. They take responsibility for the implementation of the project, which manifests in the planning of individual steps, the division of roles in solving each problem – who will provide what input, who will be in charge of what. The child continuously monitors the progress of the solution and responds to new situations as they arise, evaluating the situation, discussing possible solutions, actively making suggestions and arguing for their support. In relation to the teacher, they are in a partnership, but one where communication between the children is at the forefront and the person of the teacher is more in the background.

The role of the kindergarten

For the application of project-based learning, it is important that the kindergarten provides such conditions, that enable teachers to address topics of interest to the children, as long as the needs and interests of the children are met. First of all, is the **kindergarten curriculum**. This should not bind and limit teachers excessively, e.g. by setting the obligation to implement a certain educational topic at a specific time. It should be an **open and flexible document**, so that the teachers can take into account the interests and needs of the children. Secondly, there is the application of a **partnership approach** of the institution towards the family and its own openness to the social environment in which it is located (municipality, institutions and companies in the municipality, etc.).

Before assigning a project activity, it is necessary **to consider the environment** where the project-based learning will take place. It is not necessary to prepare perfect materials for a specific topic, but instead it is better to have helpful basic materials that are continuously available to the children and encourage their creativity. By this we mean sheets of white and coloured paper, wrapping paper, cardboard, crayons, paints, markers, scissors, glue, various stamps... preferably if these are always stored in a single place in the classroom. This can also include various leaflets, newspapers, but also pictorial material, intended for further use. We should also not forget natural materials. Additionally, we might think about supplementing the library section with suitable encyclopaedias and books aimed at different specializations. Nowadays, there should already be a computer in the children's group, or a tablet and a printer available (if the children find something suitable on the Internet or make it themselves, so they can also print out the necessary materials). The material that is used should be neutral to avoid pushing the children's ideas towards a specific project. During the actual implementation of the project, the children can also bring some materials from home or ask the teacher for it. If there is a problem with securing a certain type of material, they can suggest an alternative material or find a different way to acquire it.

3.6 Examples of implemented projects

Project designed by a teacher – A gift for our country

The project was implemented in a class of 4- to 6-year-old children

Partial goals:

- Getting to know the country the child lives in and creating a positive relationship with it.
- Gaining basic knowledge about the Czech Republic and the place the children live,
- Development of the ability to cooperate and participate,
- Acquisition of socio-cultural habits.

Context: A national holiday was approaching commemorating the occasion of the establishment of the republic. The teachers saw this topic as an opportunity to develop the children's basic knowledge of the country in which they live, while at the same time building their relationship with it. Therefore, they decided to prepare a "gift for the republic" with the children for the occasion, their idea was something like cleaning the public park and taking care of the immediate surroundings of the kindergarten. During the morning circle, they talked with the children about the approaching holiday, which they introduced to the children as a celebration of the day when our country was born.

Key question – project initiative: What gift would you give our country? The children started coming up with ideas (they would sing a song to it, draw a picture, make a card) and finally agreed among themselves to make a large greeting card, on which everyone would have their own message and picture. The teacher suggested that such a large card would not fit in an envelope and therefore couldn't be sent. **So how do you want the card to get to its destination? And who are you sending it to, our country is not a person, rather it is all of us together?** One boy said the card could be given directly to the president. The other children were interested in this idea, and it was agreed they would make preparations to visit the capital city, Prague. Based on this introductory discussion, the core of the project and its output were formulated.

The core of the project: the production of a joint card and its handover at the presidential office.

Project output: a joint trip to Prague combined with a visit to the Prague Castle and other monuments.

The teachers asked the children **what do we need to be able to deliver the card?** The children began to create a plan of activities:

- Find out how to get to Prague.
- Find out how to get to the Prague Castle in Prague.
- Make the card together.

The teacher then asked, **who can help us with these things and what will we need?** The children suggested asking their parents, going to the library and borrowing some books about Prague or getting a map. They divided their tasks – whoever could, brought pictures or materials from home about Prague, the Prague Castle or the president. The teacher brought a map and a plan of public transport in Prague. Each of the children imagined and drew the message they wanted to send to the country and a joint collage was created from individual wishes. An exhibition about the Czech Republic was created from the materials brought. They started to plan the trip, the children working with the map and plan, and together with the teacher they decided to take a train and the metro. They planned and drew up a list of things they would need (a backpack, drinks, snacks, etc.). One day they went to the train station together to buy tickets. The teacher suggested to the children that once they were in Prague, they could go and see some interesting places. The children therefore began to search for

interesting places on their visual maps, provided by their parents, looked to see what is close to the Prague Castle and created a list of monuments they would like to visit. On the designated day, two of the children's grandmothers went to Prague with children and teachers. The card was handed over to the presidential office and then the children visited some well-known monuments (St. Vitus Cathedral, Golden Lane, Petřín).



*Kindergarten visiting the office of the President of the Czech Republic
(source: author's archive)*

Reflection: The children enjoyed working on the project very much, they were fascinated and remembered visiting Prague even years later. A few weeks after the visit, a letter of thanks was sent to the children from the presidential office, which was an unexpected surprise for the children. The children also showed an interest in finding out more information about Prague – the teacher told or read them various legends (e.g. about the Hunger Wall, about the construction of the Charles Bridge). The whole project lasted for almost three weeks. In the first phase, the challenge for the teachers was to abandon their initial idea (cleaning the park) and subsequently to accept the bold new plan. However, it was not an unrealistic idea with the support of the parents, so they agreed and started the preparations. It was necessary to ensure safety, so the families of the children were asked to cooperate and help organise the trip to Prague. After the project, the teachers stated that the children had learned much more than they had originally intended.

What the children learned:

- They remembered the name of the capital city.
- They knew who the president is and where the presidential residence is.
- They were able to name and recognize several well-known monuments in pictures.
- They knew the Czech national symbols – the emblem, anthem, tri-colour flag, they recognised the coronation jewels.

- They were able to orient themselves in a public transport plan.
- They learned to travel by train (buy a ticket, how to behave on the train, stay safe).
- They managed to follow the rules of social behaviour when visiting the mirror maze.
- They were able to look after their belongings independently (backpack with snack).
- Areas of speech, thinking, fine and gross motor skills were developed.
- They were able to have discussions together, make suggestions and create a simple plan of activities.
- They were able to ask their parents for help.

Project responding to the current situation: Gaštanko's (Chestnut's) paper world

The project was implemented in a class of 5- to 6-year-old children.

Partial goals:

- Get acquainted with environmental protection and create a positive relationship with it.
- Gain basic knowledge about the efficient use of materials – paper and discover the possibilities for its use.
- Playfully experiment while developing skills: fine motor skills and visual motor skills.
- Develop and participate in cooperation between children.
- Communicate verbally about working with paper and evaluate individual and group performance.

Context: The kindergarten curriculum has a focus on environmental protection. The children's group has a mascot called Gaštanko (Chestnut). He accompanied them throughout the school year, on the topic of environmental education. When they talked about cutting down trees in the town and the subsequent processing of the wood, the discussion revealed that one of the products made from wood is paper. The children were interested in the topic. They looked for different types of paper and tried to fold it into the smallest possible pieces. This event laid the foundations for a new subproject – Gaštanko's Paper World.

Key question – project incentive: What are the ways we can work with paper?

The children came up with various ideas – we can draw on it, paint it, glue it, cut it, tear it, tape it. There were many ideas. One of them was the question of how paper is made. The discussion showed that we can also recycle paper and make new paper out of old, used paper. The children really liked this and decided to make their own paper. They agreed with the teacher that they would start by examining different types of paper and with the help of the teacher, they made a table. They came up with a way of marking:

Paper	Draw	Crumple	Glue	Tear	Bend	Fold	Cut
Office paper							
Newspaper							
Drawing paper							
Crepe							
Recycled paper							
Thin cardboard							
Thick cardboard							

- yes, easy,
- yes, but harder,
- no or very difficult.

Children put pictures next to the words in the table, so that they knew what each word meant, e.g. cut=scissors and similar. Of all the types of paper, they were most interested in newspaper. Everything was easy to do with it while re-searching. It was also interesting that each page of the newspaper was a different colour. They said that it was easily accessible and that they wanted to continue working with it. They were fascinated by the paper production process and began to look for things that could be made from it. They agreed they would make a new Gaštanko doll out of paper. They also expressed interest in seeing how paper is made in a factory. They immediately expressed ideas about how to get to the factory and who they should contact. The kindergarten is located in a town which has had a paper factory for several decades. The core of the project was planned as well as the outputs.

The core of the project: working with paper and paper production.

Project output: Joint excursion to a paper factory.

- Find out how to make paper at home / the kindergarten.
- Find out what can be made from the produced paper and how.
- Produce the Gaštanko doll together.
- Plan their trip to the factory and back.

The teacher told the children a story about a girl who was making paper at home and when she didn't know something she asked and her loved ones to help her. The teacher then asked the children what is needed for paper production and the children suggested that they look in encyclopaedias at home and, with the help of parents and older siblings, look up picture instructions on the Internet. They divided up their tasks, who will focus on which part (paper production – supplementary image material, the apparatus for paper production, the route to the factory). Some skilled fathers made frames with a sieve, the children brought newspapers and also found the necessary tools for paper

production in the kindergarten. They repeatedly explained the process of working with the materials used to each other.

The paper production took two days. The children tore up the newspaper into a large plastic container, poured water over it (the best ratio was about 30 sheets of paper, 20 litres of water, mixed well with their hands), they prepared this mixture on the first day. The next day the teacher, with the assistance of children, mixed the paper, creating a mixture that they could work with. First, they put the paper pulp on a frame and then carefully removed it after it had dried. The teacher and her assistant then ironed the paper, giving the class another piece of paper material in the classroom – their own. After the initial work with the production of their own paper, they began to experiment with the material. They found that if they wanted to make a larger figure, they needed to



Working with the paper Gaštanko (Chestnut) (Source: author's archive)

make its frame out of something more solid. In a box of waste materials, they found wire and wooden sticks among other things. Using ropes and with the teacher's help, the construction was finished. The children added the paper material, stretching it into the necessary shapes of the Gaštanko doll. The children took turns assisting each other at work. After drying, the Gaštanko doll was finished with a layer of paint.

Meanwhile, the children planned a route to the factory (on a map – they marked where the public transport stop is, they marked how many stops there will be before the factory). At the factory, they learned new words, such as cellulose and paper pulp, and what it is used for. They had Gaštanko with them and took photo documentation of the excursion. The children had many questions and were amazed by the large machines. The next day, they went to the town park with books and compared the trees in the pictures with those in reality. With the help of the teacher, they figured out the trees' names and discussed their protection. A few days later, a large package containing various types of paper awaited them in kindergarten for processing. Photographs and works were displayed in the kindergarten and at the end of the project they presented all of their findings to their parents.

What the children learned:

- They remembered the names of different types of paper.
- They learned how to make paper.
- They adopted another type of recycling.
- They developed the ability to work together.
- They developed fine and gross motor skills.
- They were able to orient themselves on public transport lines.

- They followed safety procedures during the factory tour.
- They were able to take care of their personal belongings outside of the kindergarten building.
- They were able to ask the factory employees questions individually.
- They learned new tree names and how to take care of them.
- They developed their presentation and communication skills during the presentation.
- They developed digital device and visual motor skills while creating the photo documentation of the excursion.

Project designed by children – Wedding

The project was implemented in a class of preschool children, aged 5–6 years, implementation time 1 week.

Partial goals:

- Getting to know family structures.
- Development of feelings of belonging, mutual respect and assistance.
- Development of the ability to cooperate and participate.
- Acquisition of socio-cultural habits.
- Development of fine motor skills.

Context: At the beginning of the school year, the thematic unit My Family was implemented in the children's group. While telling the children about their families, the teacher mentioned that she would be getting married soon. The children spontaneously reacted that they would also like a wedding. They asked the teacher who can get married with whom, and what if someone doesn't want to get married? The children suggested that whoever wanted could get married, and those who didn't could be guests at the wedding. Everyone agreed.

Key question – children's initiative for the project: Can we have a wedding in the kindergarten?

The teachers agreed and asked the children if they knew what such a wedding looks like and what is needed for it. The children started coming up with ideas and also with a proposal to involve their parents – at home, each of the children should find out something about weddings and how their own family was formed. Based on the information obtained, the children, together with the teachers, planned all the things they had to prepare and who they would ask for help.

The core of the project: The children's wedding at the kindergarten.

Project output: A wedding ceremony at the town hall and a subsequent wedding reception.

Plan of activities:

- Arrange a place for the ceremony – organised by the teacher.
- Arrange for formal clothes – the children ask their parents.
- Arrange for a wedding cake – the children will ask the school cook.
- Arrange decorations.
- Provide rings, flowers for the bride and write the wedding vows.
- Choose the wedding music.

Gradually, preparations began. Based on an agreement with the town hall, the date of the ceremony was set. The children agreed amongst themselves who will take what role. The children asked for kindergarten cook about the wedding cake and their parents promised to make the wedding snacks at home with the children. In the kindergarten, the children began making paper flowers, folding napkins, listening to instrumental songs and choosing the music. They wondered what a wedding vow should look like – they discussed what is the most important thing in relationships, how to treat each other, how to make their friendships last. The result of their discussion was written down by the teachers. On the morning of the wedding day, the children decorated the classroom, changed into formal clothes they had prepared from home, and went to the town hall. Here they made and signed marriage vows and exchanged rings. In the kindergarten there was a wedding photo shoot, the cutting of the cake, a banquet.



Wedding in the town hall



(Photo: author's archive)

Reflection: The whole week the children were very happy and they were absorbed in the realisation of their project. In the process, they came up with other ideas (each couple made their own wedding invitation, for example). An exhibition of the wedding photographs of the children's parents was created in the kindergarten. The parents were also very interested in everything that was happening in the kindergarten, getting involved in the preparations (arranging for the rings, clothes, the banquet), some of them took time off work and came to see the wedding ceremony at the town hall. The children went to the same children's group together for the third year in a row, so they knew each other very well and the formed pairs that corresponded to their friendships. The children's group climate was very positive, the children helped each other, they

were attentive, the children's group was cohesive. They often remembered the wedding day, even after that school year. The teachers admitted that they would never have thought of preparing a similar event themselves and at first they were worried how everything would go. But the children's interest exceeded expectations. They appreciated the impact it had on the children's social development – thinking about friendships, help, support and responsibility manifested itself in the children's mutual relationships. The children were willing to engage in activities that it would otherwise be difficult for teachers to motivate them (e.g. the boys made paper flowers for their brides).

What the children learned:

- They started thinking about how we treat others and how important this is.
- They learned the history of their family.
- They became acquainted with an important building in the town where they live.
- They were able to discuss, negotiate and plan together.
- They were able to complete the work they had begun.
- They were able to take responsibility for their part in the task.
- They developed in the areas of speech, thought, fine and gross motor skills.
- They learned how to sign their name.
- They were able to control their behaviour (not to interrupt the ceremony, wait for their turn, follow the instructions).
- They learned some elements of etiquette (to offer and accept an arm, help a lady sit down at a table, to hold a door).

3.7 Summary

Project-based learning is a challenge not only for the child but also for the teacher. Joint project-based learning can inspire the children who might surprise the teacher with their creativity. Every child is different, with a different knowledge base, so they can enrich other children with their observations. Their work can be an inspiration to others. It is interesting to observe the children's thought processes and associations. The mutual learning and complementarity. We can see the basics of cooperative work. We know that children are curious from an early age. Therefore, learning should be meaningful, and every child should feel their importance in project-based learning.

PBL allows them to discover something new about the world and about themselves. Children ask questions, they want to know more – healthy childhood curiosity is encouraged (they learn to ask questions, make associations). On the positive side, relationships are established with the closest social environment and the child is also introduced to the wider social environment. This project-

based learning exercise lasted several weeks, not just a single day as is usual for ordinary everyday projects. This is not a one-time activity. It goes deeper, developing the thought patterns of the child, it develops the child themselves.

Project-based learning allows children to develop their decision-making skills while taking responsibility for their decisions. At the same time, it leads them to develop their own autonomy in the context of a social group of children. Children learn to speak up for themselves, to formulate and promote their own ideas, but also to take responsibility for them, to register and respond to the wishes and needs of other children and adults. Herein lies the power and relevance of the PBL method, because it develops precisely those skills that many children in contemporary society lack, and which are crucial for raising a child in a democratic society.

Keywords: Brainstorming, Objectives, Facilitator, Curriculum, PBL, Planning, Presentation, Project-based Learning, Spiral Diagram, Reflection

3.8 Questions for the teacher

1. Does the problem solved concern the children's real life?
2. Is the formulation of the main problem or question understandable, solvable and interesting for the children?
3. Have I prepared situations that allow the children to think, find and propose solutions to the problem independently, using their previous experience?
4. How well do I manage to avoid interfering with the children's decision-making during the project implementation?
5. As a teacher, am I really taking the role of an advisor and consultant or do I tend to manage everything and control the progress of the project too much?
6. Do I purposefully support and create situations where children can communicate their ideas, opinions and advance the solution of the project?
7. Does the goal of the project correspond with the goals of the curricular document that governs the educational work of our kindergarten?
8. Do I allow the children to pursue their own goals in the project, leading to the output of the project?
9. Do I use different educational methods in the project to meet the various needs of all the children?
10. Have I integrated knowledge from various disciplines into the project?
11. Am I adapting the current project intention sufficiently to the children's previous experience with the project method – am I helping them learn to be active in project planning, to respect the opinions of other children and adults and look for common solutions?
12. Do I create conditions for all children to be able to express their opinions and participate in the planning, implementation and reflection taking place during individual parts and phases of the project, in individual activities?
13. Do I provide girls and boys with enough materials and equipment to enable different types of activities and to follow their interests?
14. Can I observe that the children feel responsible for the successful management of the project?
15. What assessment methods should be used for PBL?
16. How do I manage cooperation with other teachers in the classroom and kindergarten in the various phases of the project?
17. Have I considered, together with children, involving other people in the project in addition to the children and teachers in the kindergarten (e.g. parents or other individuals and institutions)?

4. | Practical examples of PBL

4.1 Project Rabbit

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The project participants were 3- to 4-year-old children from a mixed-age class.
Project length: 2 weeks

Preparatory phase:

1. Context and topic formulation: Preschool-age children in a kindergarten are looking after a rabbit (Flemish Giant). The younger children were at a farm in Studénka in Nový Jičín region, where they saw interesting rabbit-involved activities and showed interest in experiencing looking after a rabbit and playing with one for themselves.

2. Identifying the problem: A discussion with the children showed their desire to find out more detailed information about the rabbit and to build something for it.

3. Formulating key questions and a list of children's questions:

Key question: What does looking after a rabbit involve?

Children's questions: What can a rabbit eat?
Can we try looking after a rabbit?
How to entertain a rabbit?

4. Formulation of output / product: The preschool children came to an agreement with the younger children on the possibility of temporarily looking after their rabbit; construction of a jumping obstacle as a source of fun for the rabbit.

5. Formulation of first steps to achieve the output/product and formulation of partial goals:

- Conversation about possible sources of information (borrowing relevant literature from the library, watching videos, searching online);
- agreement on the appearance of the obstacle regarding its material;
- design of the obstacle, possible functions.

Implementation phase

Key moment No. 1: The children agree to work on Project Rabbit

Question to be resolved with the children (how did we help the children think about the topic, problem): What do we know about the rabbit? What do we want to find out? How to entertain a rabbit?

The teacher's role was primarily to moderate the children's discussion, to record their thoughts and to ask open questions intended to bring the children back to the topic at hand and open certain answers.

Progress of the activity (what the children did): the children held a discussion, answered questions, listened to their friends.

Questions for reflection and evaluation with the children (how we evaluated the early phase with the children – questions, methods, formative evaluation): What topic is it a good idea to start with? How did you take part in coming up with the questions? On the fingers of one hand, where one is the least and five is the most, show how happy you are with today's discussion with your friends.

Method of formative assessment: The children took part in a moderated discussion, answered open questions, at the end of the discussion the children provided feedback using the five finger method. The project goals were recorded.



Project plan

Key moment No. 2: Children find out using books, videos and the internet, how to properly feed a rabbit.

Question to be resolved with the children: What can a rabbit eat? The teacher's role consisted of asking open questions, offering ways of gaining information, how to ensure information sources based on the children's choices and offered various ways for the children to note down their information. The children were motivated to further work and the teacher positively commented on their suggestions.

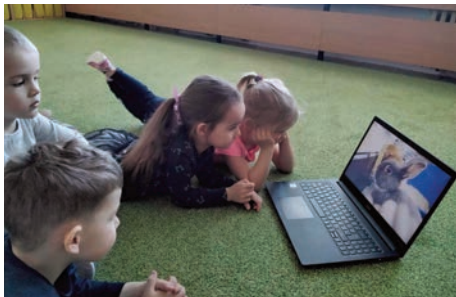
Progress of the activity The children had a basic notion of rabbit feeding, but during the discussion we came across the question of whether rabbits can eat meat and what kind of fruit and vegetables we can give to one. The children looked up information in books, they had pictures of fruits and vegetables at hand, which they attached to pieces of paper with the teacher writing in any additional missing information. The books couldn't answer all the children's questions, so the teacher played them a video. When they found out some new information, the video was stopped and the children noted it down. But the video also failed to answer everything. The teacher showed the children a website devoted to cuniculture, which displayed a food table. The children searched through the pictures and glued in the appropriate ones.

Questions for reflection and evaluation with the children: What can we feed a rabbit? What did you already know? What was new information for you? Where did you get the information? How did you record the answer to your question? What did you contribute?

Method of formative assessment: The teacher asked the children open questions, a discussion followed. The children were motivated by more than just encouragement, but also using active listening methods. During the activity, children were made aware of peer learning, through what they were told by their friends. Verbal reflection of their own participation also took place.



Looking up information in books



Children watching a video about feeding rabbits



Children sorting appropriate fruits and vegetables using the internet.

Key moment No. 3: Looking after a rabbit in practice

Question to be resolved with the children: Can we try looking after a rabbit? The teacher took the role of a guide, mediating contact with children from another children's group. Through open questions and by commenting on the viewed video content she helped them think about their work process. She summarised what the children had agreed on and was available for the practical activities.

Progress of the activity: The children discovered information about rabbits from the video, including how to look after one. Next, they wanted to try for themselves what it was like to look after a rabbit every day. After further discussion on how to achieve this, they visited the older children in the Tree Frogs children's group, and agreed they would look after their rabbit for a week. While feeding the children investigated the difference between hay and straw. They discovered what they are used for and the difference between them. The children discovered for themselves that a rabbit doesn't smell like roses and that the rabbit hutch needed cleaning. Together with the teacher, they completed the task. During the week they observed the necessity of regular feeding in the morning hours and the need to watch the water level during the day.

Questions for reflection and evaluation with the children: What was your experience of looking after the rabbit? Show on the scale, where one is the worst experience and ten the best experience. What rabbit-related activity do you want to do again? What surprised you about rabbit care?

Method of formative assessment: The children were supposed to reflect on their own experience using the scale and comment method. While commenting, the children summarised the knowledge gained. The children also com-



Children are feeding the rabbit hay



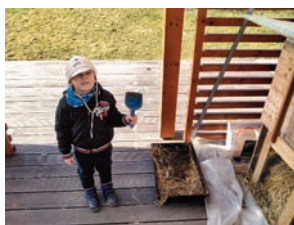
Children are giving the rabbit clean water



Children are collecting twigs for the rabbit



A boy is putting straw in the rabbit hutch



Cleaning the rabbit hutch



Children carrying out the dirty straw

pared the video with their own experiences of care. They also evaluated what they'd learned from their peers.

Key moment No. 4: The children are discussing how to entertain the rabbit.

Question to be resolved with the children: How can we entertain the rabbit? The teacher led the children's discussion, asked open questions that helped the children remember whether or not they'd already come across a similar topic and how to provide entertainment for an animal. She asked where they could get more information and recorded the children's ideas. She helped the children listen to each other and come to an agreement.

Progress of the activity: While looking after the rabbit the children noticed it was happy to see them and trying to jump out of the cage to join them. They started discussing ways of entertaining it. Based on the teacher's open questions they remembered that at the Studénka farm they saw a rabbit walking on a leash. The next day the teacher brought a rabbit harness for the children to try out. The children liked it, but they noticed that the rabbit was calm on its leash and didn't wander any further than the edge of the garden, just like when it was unleashed. The children expressed a desire for the rabbit to get more exercise. In discussions and looking at photos from Studénka they remembered seeing rabbits in a video and at the farm, jumping over an obstacle. They wanted to teach the kindergarten rabbit the same. They agreed to construct the obstacle.

Questions for reflection and evaluation with the children: Tell us how you tried to entertain the rabbit. What did you need? What would you like to try again? How excited are you about making an obstacle for the rabbit? Show using your whole body, where squatting down means "don't want to do it" and a jump "I'm looking forward to making the obstacle."



A boy is walking the rabbit outside in the garden



A girl is walking the rabbit outside in the garden

Method of formative assessment: Moderated discussion was used for reflection, as well as open questions and elements of active listening.

Key moment No. 5: Creation of design and template to construct the obstacle

Question to be resolved with the children: What will our obstacle look like? The teacher led the children's discussion, asked open questions that helped them think about individual aspects of the obstacle's construction. She encouraged them to express their own opinions. She gave positive feedback. When asked, she helped them overcome issues where the children's abilities fell short. She walked them through the practical and technical parameters necessary to produce a functional obstacle.

Progress of the activity: In discussions, the children considered the obstacle's appearance, they had complete freedom. An obstacle shaped like coloured pencils caught their attention. But the children were unable to transfer this to paper and create a drawing of an obstacle that could actually be constructed. So the teacher drew a design according to their description and let them colour the picture based on their ideas. Then it was time to agree on the material to make the obstacle from. The children made suggestions and argued why the suggested materials were appropriate or why they weren't. In the end they came to the conclusion that the best material would be wood. Then, with the teacher's help, they agreed on the tools they would use.

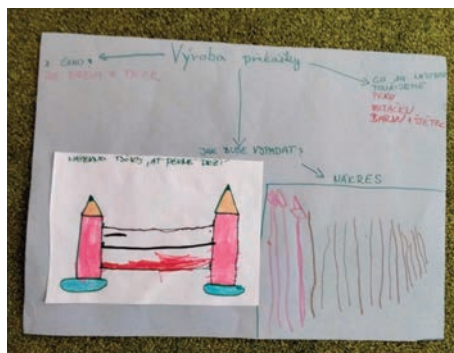
The next big question was the size of the obstacle and its shape. In the end it had the correct shape, but was not an appropriate size for a rabbit. Here the teacher entered the project planning with questions that led the children to consider perhaps making it larger. They had to take their creation apart, look to see how big the rabbit was and how big the obstacle should be. The children modified their template to make it big enough. Finally, they copied this template onto the wood using chalk.

Questions for reflection and evaluation with the children: What shape will the obstacle have? What other suggestions were there and why did we pick the pencil shape? How will you construct the obstacle? What was your first

step? How did you help when making the template? What new things did you learn? Who did you work with the most today?



Children watching a video about rabbit obstacles



Obstacle production plan with design



Children colouring the obstacle



Children comparing the finished drawing with their internet reference



A template drawn and cut out by the children

Method of formative assessment: Discussion, open questions, summarising, peer learning with mutual listening and memory recollection.

Key moment No. 6: Painting and assembling the obstacle

Question to be resolved with the children: What do we have to do to complete the obstacle's construction? How will we divide up our roles? The teacher told the children about their previous experience making something. She led the children's discussion, asked open questions that helped the children think about individual aspects of the obstacle's construction. She encouraged them to express their own opinions. She led them to abide by agreements. She gave them valuable feedback. When asked, she helped them overcome barriers where their abilities fell short. She walked them through the practical and technical parameters necessary to produce a functional obstacle.

Progress of the activity: The teacher reminded the children of the time that autumn they had built a car to play in. The children gradually remembered what the process was. They considered which of the earlier processes to use now to complete construction of the obstacle and what new things to add. After agreeing on which techniques to use, the children also divided up their responsibilities. What to do first, what comes later.

The children started sanding the wood, then painting the obstacle with the colours chosen during their planning. What the children were looking forward to most was working with the drill, which they had previously.

Questions for reflection and evaluation with the children: What new thing did you try out when constructing the obstacle? What did you need to know to finish your task? What would you like to praise your friends for? How do we find out if the obstacle works?

Method of formative assessment: Moderated discussion, asking open questions, descriptive feedback, self-evaluation, peer evaluation.

Reflection:

The group project was a new experience for both teacher and children. The choice of children was based on their expressed interest. Taking into account their age, four children was found to be the optimum number. After discussion between teachers involved in project learning, it was shown that the younger children needed more guidance. Open questions were necessary, but also closed questions, it was necessary to build on previous experience, to utilise demonstrability and practical activities.

The most difficult moment for both teacher and children was the start of the project, looking for a common goal. The teacher was getting used to her guiding role. She was learning to ask open questions and not intervene in the children's decisions. For the children it was conversely difficult to formulate an opinion, search for possible results. They expected to be led. They kept asking what the teacher thought – what they should say and do, etc. During the project, these difficulties gradually faded away and the children expressed their thoughts and wishes openly.

During practical activities a rare situation cropped up, where a boy who frequently helped his father was able to support the team of children by sharing his experience in learning the names of the tools they needed for the job. The children valued this experience very positively.

The project resulted in more than just a new obstacle for the rabbit, but also a deeper relationship with the animal. A change also occurred in both the teacher and the children's approach to project learning. The teacher expressed an interest in repeating the experience, the children regularly ask when the next project will be and bring ideas of problems to solve. A great change also occurred in parent perceptions. The children talked about their experience at home. The parents then came to the kindergarten with questions about the project, wanted to see the video and praised the activity. Two mothers talked about a change in their children: previously when asked what happened at kindergarten they said "nothing", but after their experience with project learning they started sharing their experiences. One of the mothers started looking at the kindergarten differently and her communication with the teachers also changed.



Children preparing to work with a drill



A girl painting the obstacle



A boy painting the obstacle



A boy and the teacher working with a cordless drill



Children preparing to assemble the obstacle



Children and the obstacle, a work in progress



Finished rabbit obstacle

Developed educational areas according to the Preschool Framework Educational Programme (2021) and achieved educational goals:

Attained key competences:

- *Learning competences:* While caring for the rabbit the children focus their attention on the offered information channels, discuss them and then use them during practical activities.
- *For problem-solving:* The children solve the problems of caring for the rabbit and constructing the obstacle that they can; they try to solve known and repeating situations independently (based on imitation or repetition), more difficult ones with the assistance and help of an adult.
- *Communication:* The children have sufficient abilities to talk in fully-formulated sentences, during discussion and reflection they express their thoughts, questions and answers independently. They understand what they hear, react with words and engage in simple dialogues. The children are able to use means of communication and information sources that they regularly come across to gain new information (books, encyclopaedias, computers, smartphones).
- *Social and personal:* Children look after their health and safety when caring for the rabbit and constructing the obstacle. They learn to look after the rabbit's health by choosing appropriate food, obstacles, cleaning its dwelling.
- *Task-based and civic:* When caring for the rabbit and constructing the obstacle they decide what to do independently. They are responsible for their work. They help other children as needed.

Educational areas:

The child and his/her body

- Acquiring age-appropriate practical abilities: The children learned how to clean the rabbit's cage, feed it, change its water, work with tools.

The child and his/her psyche

- Development of speech skills and language abilities, both receptive (perception, listening, comprehension) and productive (enunciation, term creation, speech, expression): Children discuss in a moderated group discussion. They answer open and closed questions. They explain their opinion. They share their experiences. They describe new abilities. They understand what they hear and react appropriately. Their speech is understandable.
- Development of self-control: The children give each other space during the moderated discussion. They support each other in expressing their opinion. They can ask for help, even when they don't know what to do next. They offer to help a friend.

- Development of the ability to create emotional connections, develop them and fully experience emotion: The children are building a relationship with the rabbit. They are able to name their positive feelings and emotions.
- Development of creativity (creative thinking, problem solving, creative self-expression): The children design the obstacle using their imagination. They can work with mistakes, accept arguments and carry out the required change.
- Strengthening the natural observational feelings (curiosity, interest, the joy of discovery, etc.): The children express interest in new information when feeding the rabbit. They suggest and search information sources on their own. They present new knowledge, positively react to gaining new information, knowledge, abilities (by smiling, commenting, actively participating).

The child and other

- Understanding that human-caused changes may protect and improve the environment, but also damage and destroy: The children describe ways to improve the rabbit's life in the kindergarten environment.
- Acquiring the knowledge and abilities necessary to carry out simple care activities for their surroundings while co-creating a healthy and safe environment and protecting the child from its dangers: The children search for rabbit care facts from multiple sources. They know the rules of safe behaviour while feeding the rabbit and cleaning the rabbit hutch, ensuring both their and the rabbit's safety. They can name the consequences of bad care.
- Development of respect for life in all its forms: The children have a positive relationship to an animal.

The child and society

- Creating the basis for an active stance to the world: The children are led to care for a living being. They can hold a conversation about the need to care for an animal.

The child and the world

- Development of respect for life in all its forms: The children observe living and inanimate nature. In their child's way, they can describe its importance to the world. They protect the environment the way children can (not hurt animals, not pick flowers, throw rubbish in the bin, etc.).

4.2 Project Insects

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The project took place in a mixed-age children's group with a total of 26 children ages three to seven. The group included five children with special educational needs and various levels of support measures, including at the 4th level. Two teachers and a teacher's assistant accompanied the children in their project. The project lasted 1½ months.

Preparatory phase

- 1. Context and topic formulation:** In the large glass-walled corridor of the kindergarten, which serves as a space for the children to run about and relax, at the same time each year, crane flies can be seen swarming out – these non-biting chironomids live a mere 24 hours. The crane flies visit our kindergarten for about two weeks before once more disappearing. During this period the children are repeatedly fascinated with the crane flies. They are much more likely to go out to the corridor and enthusiastically attempt to hunt the crane flies, considering them intruders into their territory. Within several days, a kind of group mentality sets in and the children begin to react disproportionately to the level of a frenzy. This time, a teacher came up with the idea of taking a more detailed look at the life of crane flies. She proposed to the children, that if they find crane flies so interesting, they might as well try finding out more about them. The children enthusiastically agreed. This project therefore stemmed from real events and the children's fascination, but not primarily from their need to orient themselves towards further aspects of the topic.
- 2. Identifying the problem:** Not everything is a mosquito –what's the difference between a mosquito, mayfly and crane fly? Reflecting on the length and value of a "bug's" life. Let's try looking into the question of why a mosquito torments people and find an answer.
- 3. Key question:** Is it possible to understand and feel sympathy for a mosquito's parasitic existence? Can I decide about the life of another creature, do I have that right, is it good?
- 4. Children's questions, desires and ideas:** Why does a mosquito bite? Where do mosquitoes live? What do mosquitoes eat? Do mayflies bite too? Can we talk about spiders? Are spiders insects?

The children held a joint vote in which they decided that the next type of insect they wanted to investigate, was the butterfly. Their main desire was to create their own colourful wings.

5. Formulation of outputs:

- Theatrical play A Mosquito's Life
- Making your own butterfly wings

Implementation phase

Key moment No. 1 – About insects in general:

Question to be resolved with the children (how we helped the children consider the topic, problem): What creatures do the children think belong in the class of insects? We recorded their answers. Based on these answers the teacher created small cards with realistic black and white drawings of all the creatures the children mentioned. Next we worked with the internet and an atlas of insects to describe the basic characteristic properties of all insects – three body parts and six legs.

Progress of the activity (what the children did): The preschool children used this key to filter out the fauna that did not belong among the insects. The small children looked up each type of insect on the cards in the picture encyclopaedia. The teacher offered the children various tasks, where they had to independently use the key to identify an insect (legs and body parts). The children brought any dead insects they found for inspection under the triplet magnifier, made terraria out of glass bottles, using them to observe caterpillars or other insects brought in from the garden or picked up on the way to kindergarten. Each individual input was included in the joint research.

At the end of this phase we used the cards to vote on specific representatives of insects that the children wanted to spend time on. Everyone had two stones and was allowed to place them next to an animal picture.



Work with cards and literature

Questions for reflection and evaluation with the children (how we evaluated this phase – questions, formative assessment methods): What new things did the children learn about insects? What didn't they know before? What really surprised them? We used various methods, for example a scale from "I love spiders and I'm not afraid of them at all and will hold one in my hand", through "I like spiders, I don't mind looking at them, but wouldn't want to hold one" or "I don't like them, but I'm not afraid of them" all the way to "I'm terrified of spiders and run away when I see one".

Key moment No. 2 – mayflies and crane flies:

Question to be resolved with the children We entered this phase with an activity where the teacher sent a children's triplet magnifier for beetles around the circle, in which she had previously inserted a dead crane fly. What kind of creature is it, where can we see it, what are our experiences? A problem arose, because most of the children said it was a giant mosquito, other children mentioned a mayfly.

Progress of the activity: The children had various books at their disposal and were tasked with finding the animal according to its picture. In the joint circle we read the descriptions of the photographs and pictures the children found. In the following days we mapped all the things we knew about crane flies and looked for information in books and online. We combined working in smaller groups with joint discussions and individuals' findings.

After the children abandoned their idea this was an overgrown and bloodthirsty mosquito and found out that a crane fly lives only for a single day, they stopped hunting crane flies.

Questions for reflection and evaluation with the children: What's the first thing you think of when you hear the word mosquito? If you had only a single day of life ahead of you, what would you want to do, what would you want to experience? The teacher wrote down the answers. The first days of investigation into crane flies led the children to begin perceiving the fragility of crane fly life with authentic empathy. They still however viewed mosquitoes as their deadliest enemies. The mosquito with its unpleasant pursuit of humans upset them and gradually turned our attention from crane flies to the common house mosquito.

Method of formative assessment: One of the methods of formative assessment was when the preschoolers worked in pairs with cards, where they determined what were truths or falsehoods about mosquitoes. At their mutual agreement, they would place a coloured piece of glass on the half of the card telling the truth. They were to discuss what they thought the picture meant and whether



Observing a crane fly under a triplet magnifying glass



The truth and lies about mosquitoes

or not it represented the truth or a falsehood. Each pair had different pictures and so considered a different type of information. The adults intentionally didn't rate the results. The children then used colours to draw the results that each pair agreed on. For the children this was a difficult task and most of the cards left them clueless. The teacher asked if they knew of ways to find out whether they had found the truth.

The children suggested the internet, books and asking their parents. One of the children had the idea that we could watch a film about the life of insects (Bruno Bozzetto, *Lilliput Put*, 1980). So we had a joint screening. The children made cinema tickets and suggested we could make popcorn to go with the film. The children prepared paper cones for popcorn, which they sold on site. Then they came up with the idea of also watching an episode of the French animated series *Miniscule – The Private Life of Insects*. The episode was not about mosquitoes directly, but from our viewpoint it was crucial in creating an idea of the world of insects. The children used this aesthetic and acoustic experience as the basis for planning a game about the mosquito's life.



A screening of the film The Private Life of Insects

Key moment No. 3 – The Mosquito's Life game

Question to be resolved with the children: What can be true and what's a lie? We added the missing information or cleared up any confusion using the atlas of insects. Then we began planning the game about the mosquito's life.

Progress of the activity: The children suggested what roles the game should have and which ones they themselves would like to try. What should happen in the game, how should it start and end. They agreed on the environments they would build. It was necessary to create a household with a large window and a curtain, a meadow and water – in three different parts of the classroom. The children divided up freely into groups based on roles and designed their costumes. The materials and items at their disposal were the regular equipment of the class (so-called Polykarp assembly system – large wooden blocks, rods, materials, strings, utensils, mattresses, alarm clocks, pegs, a telephone, a lamp, pillows, etc.). They reached out to the adults to ask for help in preparing their larva and mosquito costumes. They were then also provided with cheesecloth to wrap up the larvae, and straws for mosquito proboscises. Preparations took two days and required regular assistance with coordination from the adults. Coordinating agreements, summarising what they had already come up with and prepared and what was still to be done. Help dividing tasks – who takes on what responsibility.

For the game itself, the teacher first led the children as a narrator. She told a story and provided space for improvised warm-up situations according to how confident the children were in their roles. She tried to include everything

the children had been planning in her story. Later on, some of the children managed the narrator role themselves. The game was highly successful among the children and they kept wanting to play it over and over, to try out all the roles. Throughout out this we shared our experiences from specific roles in contact circles. We played the game for several days in a row and the children continued to expand and enrich it. The scenery remained built up the whole time in the class, allowing the children to gradually play the game even without the teachers during free play.

In time we added daylight and night butterflies into the game, something the children voted on at the start of the project. We painted the night insects that the mosquitoes could meet during their night-time travels, we looked at the book *Havěť všelijaká* (Bugs of All Kinds). All the children made themselves colourful wings out of cardboard, coming up with their own patterns and wing shapes. They chose whether to be day or night-time butterflies. They presented their work in a joint exhibition.



Dramatic game A Mosquito's Life

Night insects

Questions for reflection and evaluation with the children: What did you enjoy playing, what was difficult and why? "What's the first thing you think about when you hear the word mosquito?" Together we read the answers from the start of the 2nd phase of the project. We let the comparison sink in without evaluation. Some children felt the need to talk more about the changes in answers, they were given space to do so in the contact circle.

Key moment No. 4 – Butterfly wings

Question to be resolved with the children: At the very start of the project the children voted for butterflies as the type of insect they wanted to delve into more detail on, besides mosquitoes. From the very start they wanted to make their own wings that would be wearable and allow them to fly. The question was: What are a butterfly's wings like?

Progress of the activity: We talked about various wing shapes using photographs and empty silhouettes. We cut the pictures in half and the children assembled and combined half of a colourful butterfly with half of a silhouette of a butterfly of the same kinds – the key here was the shape of the wings, al-

lowing them to link silhouettes to photographs, create new kinds of butterfly by joining two halves and giving them names. The children then drew the wing shapes on cardboard, cut out the wings and then painted and varnished them. It was a large group and so, despite the children often working both morning and afternoon, this whole phase took over two weeks. The people who had their wings finished lent them out to play the Mosquito's Life game.



Making butterfly wings

Key moment No. 5 – Garden party

Question to be resolved with the children: The children expressed their desire to act out the Mosquito's Life game as a theatrical play for their mothers during the traditional garden party. They suggested playing it outside among the trees and that the mosquitoes could fly out of the garden hedge. We began to prepare the event.

Progress of the activity: The children baked savoury biscuits shaped like insects. We improved the back attachment of the wings, to allow them to move freely. We repeated the game several times in the garden.

Reflection

For project learning in a kindergarten, a class that is heterogeneous by age is quite the challenge for the teachers. If the group includes children with specific educational needs, the means and levels of adult involvement in the project can increase significantly, depending on their specific profiles. In such a group one has to start by mapping out the initial situation of the class as regards the context of the topic. How much do the children already know or have experienced – three and six-year-old children have a completely different knowledge-base and children with specific educational needs (especially those with diminished mental capacity, attention deficit disorders and comprehension or speech disorders, such as for example developmental dysphasia, as was the case in this specific class) may be in an entirely different situation. It is necessary for the teacher to coordinate and moderate the children's discussions and continuously ensure the children understand the topic, to summarise and perhaps pause or guide the development of the topic to a greater degree than in similarly aged groups.

It may seem such a group might not be ideal for project-based learning, or even inappropriate. As teachers, we asked this question ourselves at the start of the exercise. During the project we had to take into account the number of inputs from the teachers in the context of the basic principles of this strategy. For example, to even start talking about insects, it was necessary to create something of a knowledge base that would be understandable to everyone in the group. For us that was the set of properties "three parts and six legs", which the young children used entirely differently than the preschoolers. At that particular moment, one could not say the work stemmed from the children's suggestions or their mutual agreement. The tools required to create the foundation that allowed us to navigate the topic were provided by the adults.

Due to the broad gap between the life experience of individual age groups within the mixed-age classroom, the younger children had to be provided with tools allowing them to compensate their experiential and competence deficit. We used various methods for this purpose: working with pictures, different classifications, graphical depictions of contexts, movement activities aimed at number differences in joint decision-making, what direction to move forward, various voting mechanisms and expressions of one's opinion without the need for verbal ability, using one's own body, the children's group itself or items that are commonly available in the class. The teacher tends to enter the process at the start of each new phase providing the challenges and tasks whose completion serves to equalise the experience imbalance.

The greatest surprise for the children in the first phase of the project was the finding that the number of legs and parts is determinative for properly categorising animals as insects. This discovery activated their desire to observe and investigate various animals living in the school garden or in their homes.

For us it was interesting to see that as soon as we started discussing crane flies, the children completely stopped hunting and catching them, without us sharing or making any value judgements about this behaviour.

Compared to the first phase, the second to fifth phase of the project were entirely open to any and all ideas or impulses from the children. They actively participated in the creation of a dramatic game with their ideas. They enjoyed the ability to influence the game's action and to enrich it with their ideas. One significant point was that they played it repeatedly, allowing the children to try out all the roles they wanted. We view this large time investment in repetition in particular very positively.

This project brought knowledge to both children and adults involved, leading to a new perception of others and greater sympathy. We trust that these experiences can influence the further quality of their life and human relationships. The whole project was a vivid experience to the children and they remembered it long afterwards, as did their parents.

Developed educational areas according to the Preschool Framework Educational Programme and achieved educational goals

The child and his/her psyche

Language and speech:

- Development of communication skills. (verbal and non-verbal) and cultivated expression: the children learned to come to agreements
- Attaining certain knowledge and abilities that are prerequisites for reading and writing, the development of interest in written language and other forms of verbal and non-verbal communication (through art, music, movement, acting): the children were able to look up, name and understand the difference between a crane fly, a mayfly and a mosquito, learned to work with theatrical props and theatrical language concerning the audience (don't talk over each other, don't turn your back, react with improvisation to your friends' prompts);

Cognitive ability and function:

- Creating the information processing foundations: children have an awareness about information processing – where to look for answers to questions;

Self-concept, feelings, willpower:

- Development and cultivation of moral and aesthetic capacity, sentiment and experiences: children moved from an irrational group reaction towards personal responsibility and independent decision-making.

The child and other

- The development of cooperative abilities: the children can negotiate, cooperate.

The child and society

- Creating the basis for an active stance towards the world, life and positive relationships with culture and art: the children are able answer the question of how it is possible for a mosquito to torment humans.

The child and the world

- Creating an elementary understanding of the broader natural environment: children are capable of delineating various insects according to basic characteristics and distinguishing between day and night-time insects;
- development of respect for life in all its forms; the children stopped killing crane flies.

4.3 Time Machine

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The project was implemented in the whole children's group of children ages 5–7.

Preparatory phase

- 1. Context and formulation of the topic:** Creating cognitive maps: What are we interested in, what do we want to discover, what are we trying to find out. Several topics were suggested, such as rocks, volcanoes, experiments, slime, mountains, diamonds, how twine is made, a time machine, the Great Wall of China, mines; the topics were expanded on. Chosen voting method was handing out three wooden circles, where the children could pick how many to give each topic. The vote itself was secret (hidden under a piece of paper), so as not to influence the other children.
- 2. Identifying the problem: Time machine**

Discussion in the morning circle: together we are creating a cognitive map, into which we record questions, hypotheses, findings.



Discussion about choice of topic



Common thought map

- 3. Formulating key questions and a list of children's questions:** What is a time machine for? Can we imagine what it would be like to travel through time? Can we do work in our imaginations? Can we build a time machine? What can we build it out of? What material will we use? How big should a time machine be? How many people can travel through it? What might it look like? How will it move (float, fly, teleport, drive on the road, ride on a track...)? Will we sit or stand in it? Where do I want to go? Into the past? Into the future? Into space?
- 4. Formulation of output/product:** Constructing a time machine in the classroom.

5. Formulation of first steps to achieve the output/product and formulation of partial goals for the children's activity: Division of roles:

- Planners – draw the design showing how the time machine will look, including details such as attending robots or disco balls.
- Measurers – look for and measure out an appropriate spot in the class (how big can the time machine be).
- Suppliers – search for materials to be used for the construction.
- Informers – look up information online, print out interesting information and photographs.
- Documentarists – record the work of the other groups on a tablet, camcorder and camera.
- Construction workers – build the machine according to the plan using the chosen material.



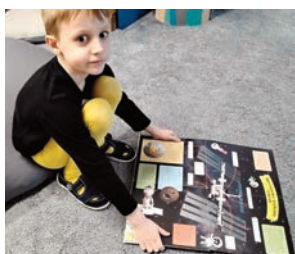
The planners in action



The measurers at work



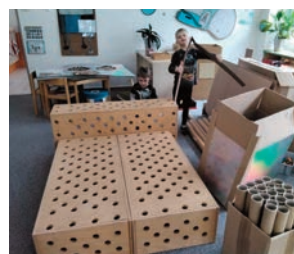
Suppliers



The informer is searching



Documentarists



Construction workers

All of the groups presented their work to the others.

Implementation phase

Key project moment No. 1: Time machine design

Question to be resolved with the children (how did we help the children think about the problem): What parts does a time machine need? Do we want our time machine to have an altimeter, propeller, fire extinguisher, carburettor...?

The informers came with an offer of machine parts, components. We decided which of these we would need in our time machine.

Progress of the activity: The informers brought new terms, we wrote them down on cards and discussed which parts our machine would need. This phase lasted a week.

Question for reflection and evaluation with the children: Was everyone able to choose the part of the time machine they would prepare? Are you members of some team? Do you have an idea where to start, what to use, what it will look like...?

Method of formative assessment: Formulating goals. Asking open questions. Descriptive feedback. Holding a class discussion. Self-evaluation. Peer evaluation.



We carefully consider each step of the build and consult everything together

Key project moment No. 2: Making the control panel

Question to be resolved with the children: What does the control panel do? What does it look like? What do we make it out of? Where will it be in the time machine?

Progress of the activity: Agreement on the final form of the control panel, choice of materials and establishment of a construction crew. Printing various buttons and knobs based on online pictures, cutting them out and sticking them to cardboard, as well as drawing our own control elements (walkie-talkie, steering wheel, navigation system...).

Question for reflection and evaluation with the children: Does the panel have everything we need for time travel? Can the builders explain how to control the time machine, so that we can all use it?

Method of formative assessment: Formulating goals. Moderated discussion, voting in cases of conflict. Asking open questions. Descriptive feedback.



Constructing the control panel

Key project moment No. 3: Constructing the propeller

Question to be resolved with the children: What will the propeller look like? What is it for? Where will we place it on the time machine?

Progress of the activity: Looking up pictures of propellers online, choosing the most appropriate shape, mutual agreement and subsequent printing of the best propeller picture and making it out of cardboard. The length of this phase was 4 days.

Question for reflection and evaluation with the children: Do you all agree with our choice of propeller? Are you satisfied with your involvement in the teamwork? Were you able to choose what you want to work on?

Method of formative assessment: Formulating the goal. Moderated discussion, voting in cases of conflict. Asking open questions. Descriptive feedback. Self-evaluation. Peer evaluation.



Making the propeller and attaching it to the time machine.



Decision to add another propeller to the machine's roof.

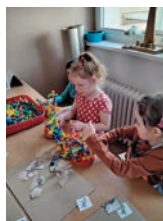
Key project moment No. 4: Making the motor, time-keeper, antenna and altimeter

Question to be resolved with the children: What do we need an altimeter for in our time machine? What should it look like? Where will we place it? What do we need an antenna for? What material do we use to make the motor?

Progress of the activity: We chose our material, equipment and size. We worked based on the suggestions of individual group members. This phase lasted 1 day.

Question for reflection and evaluation with the children: What material did you use to make the altimeter? What functions does an altimeter have? What material did you use to make the motor? How did your group work together? What decisions did you have to make? What did you have to agree on? Who decided how you would do things? Was each group member able to express their opinion?

Method of formative assessment: Formulating goals, descriptive feedback, peer evaluation, evidence of learning, holding group discussions.



Making the motor, antenna and altimeter

Key project moment No. 5: Making the fire extinguisher and breathing apparatus

Question to be resolved with the children: What do you need a fire extinguisher for? What do we make it out of? Where do we place it? How do we attach it to the time machine?

Progress of the activity: We chose our material, equipment and size. We worked based on the suggestions of individual group members. The breathing apparatus came into being as a secondary product during production of the fire extinguisher, because the children figured out that breathing is difficult during a fire and that they would need a good quality breathing apparatus. This phase lasted 3 days.

Question for reflection and evaluation with the children: How did teamwork go in the group? What was the most difficult thing? Are you happy with the results? What led you to also make a breathing apparatus? How did your work go?

Method of formative assessment: Descriptive feedback, formulating goals, choosing a new goal on reflection, making a breathing apparatus.

Key project moment No. 6: Making the windows

Question to be resolved with the children: Where will we put the windows? What do we make them out of? How many of them will there be? How big will they be?

Progress of the activity: Dividing the children into groups according to means of producing individual windows, for example paper gratings in the windows, windows out of bubble wrap, round paper windows. This phase lasted 4 days.

Question for reflection and evaluation with the children: Do the windows meet your expectations? Can we use them to see outside the time machine? How many children can observe what's going on around them? Can we close the windows? What are the gratings in the windows for? How did our work go? What were you able to agree on together? If your friend had a different idea, how did you resolve things?

Method of formative assessment: Moderated discussion, voting in cases of conflict. Asking open questions. Descriptive feedback.



Making special windows with a grating and testing the windows

Key project moment No. 7: Covering the casing of the time machine with cogs, clocks and crew photos, completing an inscription on the machine.

Question to be resolved with the children: Do you think anything else needs to be finished on the time machine, to help it work? Does the time machine match the original plan?

Progress of the activity: Design of cogs and clocks. Cutting out cardboard and grey paper. Printing and cutting out crew photos. Gluing elements on the time machine. Making letters, assembling the inscription on the time machine. Looking for the correct solution. Deciding that you don't need the help of other children or an adult. This phase lasted 5 days.

Question for reflection and evaluation with the children: How did your work go? What tools did you have to use? How did you make sure to work cleanly, to prevent the carpet getting dirty? Are all the crewmembers' photos on the machine? Can you call somebody for help? Who are you going to call?

Method of formative assessment: Asking open questions. Descriptive feedback. Peer evaluation.



The time machine is ready for its first journey.

Key project moment No. 8: Trip to the Kopřivnice engineering trade school

Question to be resolved with the children: Do you think there's a machine we could go look at somewhere? What are machines made of? How does a machine like that really work? What do real, functional machines look like? What is it for?

Progress of the activity: Guided tour of the Kopřivnice engineering trade kindergarten. Display of individual machines, a description of the machines, a demonstration – how the machines work, how they start moving. We were able to try operating the controls of certain machines. This phase lasted 1 day.

Question for reflection and evaluation with the children: What machines did we see today? How is it possible for the machines to work? What does a machine's motor look like? What did you like most at the trade school or what surprised you?

Method of formative assessment: Formulating the goal. Asking open questions. Descriptive feedback.

Reflection on the project as a whole

We reflected on each key moment using open questions to the children who participated in a given activity. Some evaluations during the progress of the activity led to a changed understanding, or to the establishment of new goals. We led the children to reflect on their own work and mutual cooperation. This self-reflection influenced the choice of workers in the subsequent days for each group. During the progress of the activities, the children were motivated and focussed. The children reacted spontaneously, deciding about their membership in individual teams. They also chose who to work with in a team. Everyone was in mutual agreement. During the build there was an interesting moment: At the start of construction a teacher returned to the kindergarten after her illness and joined in the construction of the machine. She began carrying out ideas and thoughts that weren't from the children. When the project teacher returned, she came to an agreement with the children that they would tear

what was built down and start again using designs the children brought themselves. To begin with, the children couldn't agree on what propeller to make. They chose the propeller shape online and then spontaneously voted on it. When the girls in the group were subsequently unable to take part in finishing the propeller, they openly told this to the boys when reflecting on their joint work. As a result, they designed another propeller that the girls would make themselves. The children displayed exceptional persistence in assembling the time machine's inscription. They grappled with the text for a long time, wouldn't take advice, refused offers of help. As their teacher, I repeatedly urged them to go and ask for help from one of the boys who could read. But they didn't want to, didn't react, wanted to spend longer thinking over and solve the problem themselves. They persevered and were overjoyed when they successfully assembled the inscription. Decision-making, the ability to transfer one's own ideas into the joint effort brought out a significant internal motivation to complete their machine in the children.

Developed educational areas and achieved educational goals:

Developed key competences:

- *Learning competence:* The children wanted to understand and assemble an inscription, investigate the order of letters and put in a lot of effort.
- *Problem solving competence:* The children spontaneously came up with new solutions to problems and situations, looked at various possibilities and variants, used their current experiences, fantasy, imagination. They progressed through trial and error. They wanted to solve the situation themselves.
- *Communication competence:* The children engaged in a meaningful dialogue about the component parts they wanted on the machine, openly expressed their opinion, asked questions and looked for answers, considered the presented design.
- *Social and personal competence:* The children were capable of mutual respect, participated in joint decisions.
- *Task-based and civic competence:* Children were motivated to complete the work, helped each other out, adapted to the circumstances.

Developed educational areas according to the Preschool Framework Educational Programme and achieved educational goals

The child and his/her body:

- The children developed their fine and gross motor skills, worked with scissors, sticky tape, glue, manipulated cardboard, bent it.

The child and his/her psyche:

- The children held discussions, listened, argued, shared information, looked for the meaning of individual terms. They developed their creativity.

The child and other:

- They cooperated, voted to find a common solution, defended their opinion.

The child and the world:

- They adapted to the conditions of the external environment, worked with various materials, selected them.

4.4 Space – Space Suit

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The project was implemented by a group of four boys and one girl from a mixed-age children's group.

Preparatory phase

- 1. Context and topic formulation:** In the circle we talked with the children about their next topic of interest, things they wanted to talk about and or to find out. We wrote down all the ideas and at the end we agreed on two topics: Space and Prehistory. The children voted and Space won out. And one boy said that it didn't really matter, because prehistory connects right up to space, if you think about it.
- 2. Identifying the problem:** We talked about all the things we know about space, what it probably looks like up there, what things we can find in space. A lot of children answered that "we can do this or that, walk about there" and so on. This led to the question of whether we could fly to space or who was allowed to fly there. For example, we mentioned our assistant teacher and tried to find out what she would need to become an astronaut.

The children search:

It has to be an adult.

There need to be several people.

It has to be arranged in advance.

The control centre is far away.

She needs a space rocket.

He has to wear special clothes.

The teacher counters:

– Pavla is one.

– We'll find her someone.

– So we'll arrange for it to happen in a year.

– So we'll drive her there or she can fly in a plane.

– They have rockets in America, we'll try and get her one.

– What are the clothes for?

- 3. Formulating key questions and a list of children's questions:** Which of the conditions could we carry out in the kindergarten? Which of these things can we do to help Pavla fly to space? By process of elimination the space suit was left. When asked if we can make one, the children initially answered that they don't know, probably not. I tried to encourage them with questions: "And why not? Would somebody like to try and see if it's possible?" In the end five boys volunteered. "Can we make a space suit in kindergarten?" What will it look like? What will we need to make it? Where will we get the materials? Homework: Find out what we can make a space suit out of?
- 4. Formulation of output/product:** A space suit we can wear.

5. Formulation of first steps to achieve the output or product and formulation of partial goals for the children's activity:

- Completing homework – collecting information.
- Cognitive map – what will we use, where will we get it, etc.
- Preparation of materials for the job.

Implementation phase

Key moment No. 1: Verifying information about astronauts on a PC

Question to be resolved with the children: Are all the things we talked about in the circle enough for an astronaut to fly to space?

Progress of the activity: Children and the teacher looked up the necessary information on the PC.

Question for reflection and evaluation with the children: Did you find or find out anything new? How did you get the information?

Method of formative assessment: The children tried working on a PC when searching for information, confirmed what they already knew and learned something new. Because they can't yet read (only one boy can read), the children suggested finding a film – we found a short video. Jonas read some parts of it.

Key moment No. 2: Collecting information with the space suit

Question to be resolved with the children: What do we need for the build?

Progress of the activity: The children's homework was to discover what a space suit could be made of and everything it needs. The next day we talked about it and recorded things next to the picture together. We looked to see what material we had available at the kindergarten and what we had to get. This phase lasted 2 days.

Question for reflection and evaluation with the children: What did you find out at home? What materials and other things will we need to get and where?

Method of formative assessment: Children brought written lists (worked on with their parents) or drawings of the required items. They drew a picture of an astronaut and the teacher wrote down the children's ideas and thoughts.



The children are gluing newspaper to wellingtons and rubber gloves, then painting the boots white.



The children are assembling a backpack with a breathing apparatus – gluing newspaper to a box, painting plastic bottles white.



The children are tracing the space suit pattern, using a sewing machine, gluing walkie-talkies and control knobs to the suit.



The children are drawing the opening for the helmet, cutting, gluing newspaper on it, attaching a foil shield. The children are presenting themselves in the new space suit.

Reflection

The idea for the topic came from a discussion with the children. Together we talked about all the things we knew about space, what we can find there. In their answers the children often said: "we can do this or that, walk about there". The question arose, of whether we could also be in space, how to get there and who is actually allowed to fly to space. The children's answer was that it had to be an adult, so we used the example of our teacher's assistant and the children looked for reasons why it would or wouldn't work. The teacher tried to counter-argue, when they rejected something out of hand. In the end we worked our way to the space suit. The children immediately rejected the possibility of making a space suit in kindergarten, saying it wasn't possible. Once more we tried to find out why, using additional questions. This resulted in asking, why couldn't we try doing it? In the end five boys agreed to try. The topic suggestion was the result of a discussion with the children. Together we talked about all the things we knew about space, what we can find there. In their answers the children often said: "we can do this or that, walk about there". The question arose, of whether we could also be in space, how to get there and who is actually allowed to fly to space. The children's answer was that it had to be an adult, so we used the example of our teacher's assistant and the children looked for reasons why it would or wouldn't work. The teacher tried to counter-argue, when they rejected something out of hand. In the end we worked our way to the space suit. The children immediately rejected the possibility of making a space suit in kindergarten, saying it wasn't possible. Once more we tried to find out why, using additional questions. This resulted in asking, why couldn't we try doing it? In the end five boys agreed to try.

After completing their "homework" we began preparations, writing down everything we needed, getting material. The boys came with ideas, filling in for each other, taking turns as something of a leader, during their work they came up with other solutions than originally intended.

The project sadly took a bit too, due to the children's illness. In the end we completed the space suit and in one phase a girl also joined in.

Developed educational areas according to the Preschool Framework Educational Programme and achieved educational goals:

Attained key competences:

- *Learning competence:* The children learned new things, searched for answers to questions together, the children completed the assigned work, evaluated their work together.
- *Problem solving competence:* The children tried something new, experimented; together they came up with new solutions, brought their own ideas, the children were able to actively influence the solution at their own initiative.
- *Communication competence:* The children were able to communicate with other children and adults; they engaged in dialogue, expressed their thoughts, the children used encyclopaedias, computers.
- *Social and personal competences:* The children were able to express their opinion, assert themselves, but also subordinate; the children were able to cooperate in decisions, respect others.
- *Task-based and civic competences:* The children learned to plan, organise and evaluate, they were able to adapt to circumstances and situations, the children were aware of their responsibility; the children appreciated each other's work.

Developed educational areas according to the Preschool Framework Educational Programme and achieved educational goals

The child and his/her body:

- Improving their abilities in the area of fine and gross motor skills, hand-eye coordination: The children worked with various materials, cut and glued.
- Acquiring age-appropriate practical abilities: The children managed simple cleaning activities.

The child and his/her psyche:

- Development of creativity (creative thinking, problem solving, self-expression): The children created using their imagination, while making the space suit they used non-traditional materials.
- Development of communication skills and cultivated expression: The children were able to express their ideas, formulate questions and answers.
- Development and cultivation of imagination and fantasy: The children were able to come up with new solutions, eventually searching for alternatives (how else to do things, etc.).

- Creating foundations of information: The children were able to find things in encyclopaedias, look up information on the computer.

The child and other:

- The development of cooperative abilities: The children were able to agree amongst themselves, respect other people's opinions, agree on joint solutions.
- Creating pro-social attitudes, development of tolerance and respect: The children understood that each person can do different things, offered to help each other out.

The child and society:

- Getting to know the world of people, culture and art, acquiring basic knowledge about the environment the child lives in.
- Development of the ability to live in the community of other people (cooperate, participate): The children were able to submit to the group's decision, appreciate the work of others.

The child and the world:

- Creating an elementary understanding of the broader natural, cultural and technical environments, their diversity, development and constant alterations: The children gained new information about space.

5. | Task-based learning

In this chapter, we present the general theoretical underpinnings of TBL, the advantages and challenges of TBL, the role of education in TBL, the role of the children, the role of the kindergarten and different ways of using a task-based approach in various subject areas of early childhood education (mathematics, language, natural sciences, social sciences, drama education, dance and music education, art education, physical and technical education).

5.1 Theoretical background and definitions

In the literature, task-based learning (TBL) is predominantly a **didactical strategy** used for second or foreign language learning,² however its background is relatively broad and can be applied to all the other learning domains at various levels of education, from early childhood education to adult education with appropriate adaptation to the specific learning domain and students' current level of education and cognitive abilities. It should be emphasised: in this publication we will not be focussing on foreign language teaching, but rather on the use of task-based learning in preschool education.

The theoretical background of TBL is the pedagogical theory of **constructivism**. Constructivism is based on the idea that learners actively construct or form their own knowledge. Learners/children use their previous knowledge as a foundation and build the new things that they learn on top of it. Children bring their own unique experiences to the classroom every day. Their background and previous knowledge impacts their learning process. The basic principles of the pedagogical theory of constructivism are:

- **Knowledge is constructed:** a child's previous knowledge, experiences, beliefs, and insights are all important foundations for their continued learning.
- Children learn through the process of learning. Learning involves constructing meaning and systems of meaning. For example, if a student is learning the process of washing their hands, at the same time they are discovering the meaning of hygiene and how to look after a healthy body.
- Learning is an **active process**. Children need to be doing something in order to learn, it's not a passive activity. Children need to engage with the world, so that they are actively involved in their own learning and development.
- Learning is a **social activity**. Learning is directly associated with our connection to other people. Our teachers, our family, our peers and our acquaintances all impact our learning. Peer involvement is a key component of learning. Learning in isolation is not the best way to help children learn and grow together. In the learning process, the

² Two terms are mentioned in the literature: task-based learning (TBL) and task-based language learning (TBLL).

teacher should use conversation, interaction and group collaboration to help children retain their knowledge.

- Learning is **contextual**. Children don't learn isolated facts and theories separate from the rest of our life. Learning is always connected to the things we already know, what we believe, and more.
- Knowledge is **personal**. Constructivism is based on children's own experiences and beliefs; knowledge is a personal affair. Each child has their own prior knowledge and experiences. The ways and things children learn and gain from education can be very different.
- Learning exists in the mind. Hands-on experiences and physical actions are necessary for learning, but those aren't enough. Actively engaging the mind is key to successful learning. Learning needs to involve activities for minds to do, not just our hands. Mental experiences are needed to retain knowledge.
- **Motivation** is key to learning. Children are unable to learn if they are unmotivated. Educators need to have ways to engage and motivate children to activate their minds and help them be excited about education.

TBL uses all the basic characteristic of the pedagogical theory of constructivism. Its main idea is that children **learn during activities** prepared by teacher. The learning process focusses on the children's activities, with the teacher playing the role of facilitator during TBL. Tasks are connected to real-life situations and contexts, learning is usually in groups or pairs, and construction of meaning is the central focus of TBL.

5.2 What do we mean by tasks in TBL?

In a TBL perspective, tasks are activities which are designed by a teacher and implemented or led by the children. **Tasks** should motivate the children, engage their attention, and present a challenge on an intellectual, creative, ethical, physical, social-emotional or linguistic level. It is important that tasks have specific learning goals. The goals and outcomes can subsequently be further built on at a later stage of the task circle. Tasks without specific outcomes are not very good tasks. It is often possible though, to redesign the activity without an outcome so that it has one (Willis, 1996). Task is an activity in which meaning is primary. In designing a task, it is important that task has some kind of relationship to the real world (e.g. exchange of personal information, problem solving, judgment or evaluation, experiments, planning, argumentation). Teacher should lead the children to complete the task. Teacher and children should know when the task is completed. Assessment of task performance is in terms of task outcome (Skehan, 1996). High quality tasks have a clear pedagogic relationship to out-of-class use in real-life. Task design should ensure that classroom tasks bear a development relationship to non-classroom activity. Such quality is sometimes difficult to obtain. It is also possible to involve children or students to negotiate which task to use and how to use them. It is very important that

teacher understands the task s/he is using and to sequence and implement them as effectively as possible (Long and Crookes, 1991).

Two general types of task are open and closed tasks. **Open tasks** are ones that are more loosely structured, with less specific goals, for example comparing holiday memories or exchanging opinions about some topic. **Closed tasks** are highly structured and have very specific goals, with precise instructions and information provided. Closed tasks usually have one possible outcome and one way of achieving them. Other types of task fall midway between closed and open. For example, logic problems can have a very specific goal but different ways of getting there. In general, the more specific the goals, the easier it is for children to evaluate their success and the more likely they are to get involved with the task and work independently. It is often the goal and outcome that motivate children to engage in a task, which then becomes their learning opportunity (Willis, 1996).

5.3 What are the basic types of task?

The basic tasks that can be used in TBL are (Willis, 1996):

Listing

Listing involves brainstorming children's ideas. It can be done individually, in pairs or as a group. Listing can also be a fact-finding task, in which children discover things by asking each other, asking their parents, other people, various resources for example the internet, academic literature, maps, books. The outcome would be a completed list or mind map.

Ordering and sorting

These tasks involve four main processes: a) sequencing items, actions, processes or events in a logical or chronological order, b) ranking items according to some specified criteria, which can be proposed by the teacher, students or found in the literature etc., c) categorising items into provided groups or grouping them under given headings, d) categorising items in different ways, where the categories themselves are undefined.

Comparing

These tasks involve comparing information of a similar nature but from different sources or versions in order to identify common points and/or different tasks. Comparing can involve a) matching to identify specific points and relate them to each other, b) finding similarities and things in common and c) finding differences.

Problem solving

These tasks include logic, reasoning, argumentation. They should be challenging for children in an appropriate way, so that the majority of the children in the group can solve the problem and successfully complete the task. Good problems should be relevant to the children, engaging and satisfying to solve. The

teacher can prepare various types of problems, for example logical problems, real-life problems or case studies.

Sharing personal experiences

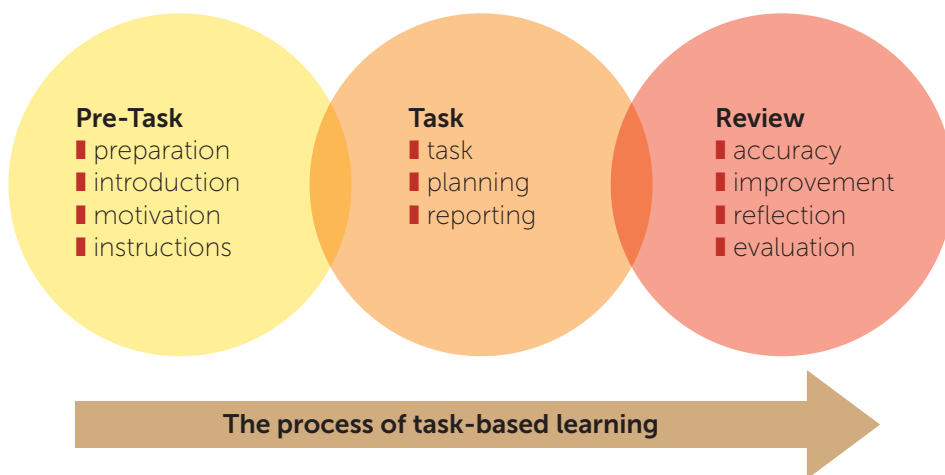
These tasks encourage children to talk freely about themselves and share their experiences with others. The resulting interaction is closer to a casual social conversation. Sharing personal experiences should be carefully planned to achieve learning goals. These tasks can be very engaging for children and informative for the teacher's perception of the children's knowledge and thought.

Creative tasks

These tasks usually involve pairs or groups of children engaged in some kind of creative work. They also tend to have more stages than other tasks and can involve a combination of different types of task: listing, ordering and sorting, comparing and problem solving. To complete the task, the children should have organisational skills and be able to work in teams. The outcome can often be appreciated by a wider audience, allowing the children to develop their communication, social-emotional skills, their ability to perform, etc. In real-life rehearsals, pairs or groups of children predict, plan and rehearse their presentation, creative expression or performance.

5.4 How do we implement the TBL process?

Each task has a **task circle**, which is made up of 3 steps or phases: **pre-task**, **task cycle** and **review**.



The process of task-based learning

The pre-task phase is sort of an introduction, usually the shortest stage in the framework, depending on the children's degree of familiarity with the topic and the type of task. The teacher should also prepare suitable visual didactical material beforehand, vocabulary-building ideas, basic cognitive concepts regard-

ing the theme, and other important materials needed for the task cycle (depending on the learning domain). The pre-task phase includes advance preparation, introduction of the topic, motivation and drumming up interest in doing the task, as well as providing the task instructions. It is very important that a teacher gives precise and clear task instructions which can be carried out a) verbally (the teacher explains the instructions to the children with the use of language or other visuals), b) the teacher can demonstrate the task with one of the children, c) the teacher plays a video of somebody else doing the task, d) the teacher shows the class what previous children have achieved. At the end of the pre-task phase, the teacher should allow a few minutes for the children to prepare and organise themselves before carrying out the task. The focus of this stage is on engaging the children, setting expectations and providing instructions.

The task cycle has three stages: a) the task itself, b) the planning stage and c) the report stage. The task can be listing, comparing, ordering, sorting, problem solving, experience sharing or a creative task, as well as combinations of several task types. The task cycle phase should have a time limit and the children should work as independently as possible. The teacher should be in the role of a facilitator, making sure that all the children are doing the right task, encouraging everyone to take part in the task (with special attention to the quieter children), be supportive and forgiving about errors and act as a timekeeper.

Good task cycles should be planned in a way that gives the children the feeling of being successful. Tasks should also be designed to bring out and develop the children's natural talents and skills. It is important to ensure each child has been given a clear role within the actual task to guarantee that everyone is truly motivated and deeply involved in the task's execution. Immediately after the task, it is good to briefly bring up one or two points of interest heard while during observation and to comment positively on the way the children have carried out the task. The planning stage is intended for the children to plan their reports and findings from the task. It should be clear who will be reporting, what form the report will take and how much time is available for the report. The teacher should tell the children about the report before they start the task to subsequently motivate them to prepare their report. The report stage is the conclusion of the task cycle. The time frame for the reports depends on the type of task and educational level of the children. The teacher's main role in the report stage is to be an adviser, helping the children shape their meanings and express more precisely what they want to say or show.

For older students, all three task cycle phases usually need to be in the language of instruction. In early childhood education (ages 1 to 6) children are not always capable of planning their presentation and report, so the teacher has to decide which stages of the task cycle are appropriate in any given learning situation.

The review is the third step in the TBL process. Once the children have completed their task and have reported about it, it is time for a review. The purpose of this step is to check the accuracy of the completed task, to see if the learning goals and outcomes have been achieved, to reflect on and evaluate the children's work as well as the design of the task itself, and to look for improvements

in both learning and task design. The review can be performed by the teacher or by peers. Teacher feedback and appraisal is very important in preschool education. If, during observation, the teacher sees an error common to many, teacher-led delayed correction is very useful. Peer review is also appropriate if the children are old enough to carry it out. The aim of this stage is accuracy, reflecting on the completed work and analysing it.

When moving from one phase to the next in TBL, teachers are placing various learning demands on the children. Tasks should be carefully planned so that the children can learn successfully. The teacher should also keep in mind the different learning abilities of the children, or their special needs, and adapt TBL according to those needs. It is best if the teacher combines TBL with other didactical strategies appropriate for early childhood education or preschool education, such as experiential teaching, problem-based learning, research-based learning and phenomenon-based learning. The teacher should plan educational content where the children actively participate in the learning process, make lessons personal to the children by including them in that process. For example, instead of a traditional approach to teaching about cutting fruit, the experiential learning approach would be for the children to cut the fruit themselves under adult supervision. In problem-based learning combined with TBL, the children could solve the problem of how to plan the safest and cheapest trip to a holiday destination. In research-based learning combined with TBL, the children could research the most interesting facts about a specific animal and then observe it in a real-life situation. In phenomenon-based learning combined with TBL, the children could gather information about global pollution and try to propose solutions for the phenomenon, etc. These are only few examples of various possible uses of TBL in combination with other didactical strategies.

5.5 Advantages and challenges of TBL

A review of the literature reveals a number of advantages as well as some of the challenges we may face when using task-based learning. In this chapter, we will present the benefits and challenges of TBL that may be helpful to teachers who want to implement TBL in the best possible way.

Advantages of Task-Based Learning

The following are the advantages of a task-based learning approach:

- It emphasizes **active participation** of the learner, but also allows for teacher input and guidance.
- TBL usually provides learners with an **active role** in participating and designing activities.
- Learners' self-confidence may improve as tasks can **mimic real life**.
- The **authentic context** of the tasks can have a motivating effect on students' performance.

- Children have more opportunities to show their thinking through their actions.
- Children have the opportunity to **use the knowledge** they have learned and apply it productively within the task context.
- In the process, peer learners can present different perspectives on the same situation and develop a meaningful discussion around it.
- It can be used in conjunction with a more traditional approach.

Mentions of the advantages and disadvantages of this approach are found largely in research concerned with the use of task-based learning in language teaching (e.g., Newton, 2001; Ellis, 2003). The most commonly highlighted advantages of task-based learning are:

- *It helps students interact spontaneously.* Children have the opportunity to freely use and try out a language they already know, while also having the opportunity to observe other children's expressions and gradually build their confidence. Instead of focusing on isolated language structures, their attention is directed toward solving a concrete problem task.
- *Automaticity.* Research shows that automaticity, defined in language learning as more efficient, accurate, and stable implementation, is promoted by the creative use of language in an authentic communication situation (Dekeyser, 2003, cited in Rider et al. 2007). Task-based language learning supports the development of automaticity (Johnson, 1988, cited in Ellis, 2009).
- *It provides language learners with opportunities to learn vocabulary.* The teacher must ensure that in TBL, children have the opportunity to learn new words, explore them without direct help from the teacher and use these words to achieve meaningful task goals (Newton, 2001).
- *It provides essential conditions for language learning.* In TBL, children have the opportunity to try out different communication strategies to use language in the real world.
- *It maximizes the scope of communication.* TBL enables children to acquire new language skills and test their previous knowledge in new communication contexts.
- *Experiential learning.* Experiential learning forms an important conceptual basis for task-based language learning. Children's direct personal experiences and active participation are emphasised. Such an approach is student-centred.

Challenges of Task-Based Learning

Despite the benefits of the TBL approach, there are also some concerns raised by critics.

One of the challenges of the task-based learning approach is that the chosen tasks must be **carefully planned** for the approach to be effective. Indirectly related to this is the subsequent challenge of the task-based learning approach, it **requires more time for planning** and preparation by the teacher.

Hatip (2005) points out additional challenges that teachers may encounter when implementing TBL:

- The disadvantage of task-based learning does not lie in the potential strength of this approach but arises from the difficulties in carrying out the instructions.
- This approach requires the teacher to be highly creative and dynamic. Problems arise especially when teachers are limited to their traditional roles or do not have the time and resources to implement this approach.

5.6 The role of the educator

In the context of task-based learning, the role of the teacher is to be a “**facilitator**”, which means that having the conditions for learning in mind at all times. The teacher is involved in the preparation of the tasks, ensures the students understand what needs to be done and guides and supports them in learning throughout the tasks.

Richards and Rogers (2001) emphasised three main roles of the teacher implementing task-based learning:

- **Selecting and sequencing tasks.** The teacher’s role is to select, adapt and design tasks, keeping in mind that tasks should match learners’ abilities, needs, expectations and interests.
- **Preparing learners for tasks.** One of the main roles of the teacher is to prepare learners for the tasks. This includes introducing the topic, giving precise instructions, helping learners complete their tasks, and, to some extent, outlining the task process.
- **Consciousness-raising.** The teacher uses a mixture of awareness-building techniques that include pre-task attention-grabbing activities, guided collaboration on similar tasks and the use of highlighted material.

There are different ways to design a task, but it should usually include some kind of “gap”, a missing piece of information. Here are five principles that can help when designing tasks (adopted from Weller, 2019):

- Tasks should support the goals of the curriculum. If something is too flashy, it could be so engaging that it distracts children and changes the subject. If it is too boring, it will not be engaging at all and children will just talk amongst themselves. The topic and context should also fit the task. One topic can give rise to a number of different tasks, and these might be linked in order to provide a thematic ‘unit’ of activity.

- Tasks need to have gaps. Children need a good reason to engage with the task. Prabhu (1987) describes three types of gaps – information, reasoning and opinion gaps. In information gaps, children have different information and need to exchange it. With reasoning gaps, children have to figure out how to get from where they are to where the task says they should be. An example for preschoolers would be designing an experiment to find out which detergent creates more foam with constraints on samples and other equipment and variables. Opinion gaps are places where children must agree or disagree with others and give reasons why. Each of these three gaps provides a reason for students to share and complete the task.
- Tasks are designed to build confidence and encourage creativity. They are about making the best use of patterns of interaction. For a material task, the teacher needs to prepare a variety of different materials to give the children different ways to complete the task. The habit of mind of searching for more than one outcome and employing more than one method may be successfully promoted in kindergarten (Tsamir et al. 2010).
- The task should try to take advantage of the materials prepared. The children need to understand the learning process and the teacher's instructions before they even try to complete the task. So instead of giving them new materials, the teacher could reuse things that have already been used in a previous activity.
- The teacher should "mentally rehearse" planned tasks. This quick preview can help when anticipating problems, meaning the teacher simply closes their eyes and pictures the group of children they will be teaching. Imagine all the personalities in the group. Then go through the task. Imagine how you will introduce the task, how you will give the instructions, how the children will react and what new knowledge they will produce.

The main focus of the TBL approach is on students becoming active, either individually or in pairs or groups, but it is the teacher who monitors and controls the learning situations. Willis (1996) states that in the TBL approach the teacher has not only the role of facilitator, but also that of a course guide. In that role, the teacher explains the general objectives of the course to the learners and summarizes their achievements during the lesson, which can have a positive effect on children's motivation to learn.

Since TBL is a didactic strategy characterised by the use of tasks usually consisting of three phases, the teacher's role is also slightly different in each phase. In the following, we will describe the role of the teacher in each phase.

In the pre-task phase, the teacher's role focuses mainly on getting the students involved, setting expectations and giving precise instructions. Here the teacher introduces the preschoolers to the task and inspires them to complete the task. When the children are engaged, the teacher should set expectations for the task and make sure that "less motivated" children are doing more than the bare minimum. To accomplish this, the teacher can show the children an example

of a completed task or suggest a task. If the teacher wants to group the children, this is a good time to distribute support materials or provide appropriate assistance for the task. When forming groups, it is good to keep in mind that small groups or pairs are better than a single larger group as shy children can 'hide' there. Ideally, the teacher will not be involved in the task directly, but only observe and guide the young students when they encounter a challenge they cannot overcome themselves.

During the task cycle, children perform the task in pairs or small groups while the teacher observes them from a distance. Next, the children will plan what to tell the rest of the group about their results and how things went, and then report on the task either orally or in writing or present the completed task.

Once children have completed their task and reported on it, it is time for review. The teacher's goal at this stage is to examine and analyse the work that has been done. Group or peer review can be carried out, or if the teacher notices some common mistake made by many children while monitoring their work, a delayed correction led by the teacher is also very useful. For weaker groups, peer correction can be more effective when they are given instructions on how to provide feedback – they may be able to use a checklist or list of "things to look out for".

5.7 The role of the children

In the professional literature (Hohmann and Weikart, 2005; Batistič Zorec, 2002), **active learning** is defined as learning that challenges the child to act upon objects and interact with people, ideas and events, while constructing their new understanding. Active learning focuses on directly experiencing objects, people, ideas and events. It is fundamental to the child's cognitive transformation and development. Children learn concepts, form ideas and create their own symbols or abstractions through activities that encourage them to do so e.g. through movement, listening, searching, feeling, disposing of and handling objects. This activity takes place in a social setting with an attentive and sensitive educator who observes and participates, allowing the child to gain interesting experiences that guide their understanding of the world.

According to Hohmann and Weikart (2005), active learning is the basis for a comprehensive development of human abilities and is most efficient when appropriate learning opportunities are provided. Therefore, the aim of pedagogical work is to establish a flexible implementation model, an "open framework" that supports developmentally appropriate education and different educational environments. Through active learning and direct experiences, as well as through reflection on the meaning of these experiences, children construct knowledge that helps them understand the world. Children are active because of their innate desire to explore, to ask questions, and seek answers to questions that arouse their curiosity, to solve problems, and to formulate new strategies.

In TBL, we are highlighting the link between the educator and the child as of the utmost importance. Beyond mother-child interactions, however, children's positive relationships with teachers significantly predict school success (Pianta, Nimetz, & Bennett, 1997 in Vittielo, Booren, Downer, 2015). Children who have positive relationships with teachers tend to have higher achievement, lower levels of internalizing behaviour, and higher social competence than children whose teacher relationships are characterised by conflict (O'Connor & McCartney, 2007; Palermo, Hanish, Martin, Fabes, & Reiser, 2007; Pianta & Stuhlman, 2004 in Vittielo, Booren, Downer, 2015).

When in an environment that promotes learning, children take the initiative in activities that stem from their personal interests and intentions. With the support of the educator, they can become active agents in their own learning experience, rather than mere passive recipients of teaching provided by the educator. Children are able to choose materials and decide how they will use them; they will want to use them; they are resourceful and they handle materials according to their interests and abilities. They are actively exploring the materials with all their senses and getting to know objects by experimenting with them, exploring them and discovering their properties, while also beginning to understand how these objects work. Children discover relationships through direct experiences with the objects. They learn about relationships by looking for answers to their own questions. Children transform and combine materials, using tools and equipment appropriate for their age (Hohmann and Weikart, 2005, p. 24–29).

Verhelst (2006) says that within a positive and safe environment, children are confronted with meaningful and relevant tasks and receive interactional support while performing these tasks. They should be "pleasant and playful, stimulating the children to use language to carry out actions in the concrete world other here and now."

Children's classroom experiences, both social and task-related, are widely seen as a critical component of early learning and development. There is strong evidence that children's preschool experiences are associated with the development of later social and academic skills (e.g., Burchinal et al., 2000; Mashburn et al., 2008 in Vittielo, Booren, Downer, 2015). Increasingly, researchers view children's engagement with social partners and tasks in the classroom as learning processes in and of themselves; in other words, as the processes that drive learning in early childhood (Hamre & Pianta, 2001 in Vittielo, Booren, Downer, 2015). On an individual level, a child's ability to get the most out of their classroom experiences, by engaging actively and positively with teachers, peers, and tasks and limiting negative or conflictual engagement, may maximize that child's opportunities to learn and develop within the classroom (Vittielo, Booren, Downer, 2015).

Preschool classrooms give children regular opportunities to interact socially with teachers and peers and to engage with tasks. However, children may not engage in high-quality experiences evenly across the preschool day. Basic elements of classroom organisation, including teachers' use of different activity settings, may be associated with children's frequency and quality of engage-

ment with tasks and social partners (Kontos & Keyes, 1999 in Vittielo, Booren, Downer, 2015). The term *activity setting* refers to the basic way teachers organize class time in terms of both group size and activity; common activity settings in the preschool include large group, small group, individual work time, free choice, outdoor time, meals, and transitions between activities (Early et al., 2010 in Vittielo, Booren, Downer, 2015). These activity settings may differ in the opportunities they provide for children to engage positively (or negatively) with teachers, peers and tasks (Booren, Downer, & Vitiello, in press). Furthermore, child-dependent factors such as age and gender may be related to how children engage with teachers, peers, and tasks across activity settings. (Vittielo, Booren, Downer, 2015).

The teacher and students' roles change within a task-based approach. TBL presents learning and teaching as a collaborative effort. Classes are student-centered. Teachers address students' needs and interests by becoming facilitators. The role of the students is far from that of passive recipients of comprehensible input; students can now be seen to take the leading role in their own learning. Van den Branden (2006) agrees that task-based lessons are student-centered, meaning the students play the primary role in their own learning process. Learners are also group participants. Many of the tasks are done in pairs or groups which requires adaptation for students used to working individually or those used to whole-class instruction. Richards and Rodgers (2004) say that both teachers and learners in Task-Based Learning are responsible for the development of classroom interactions.

Engagement with tasks is another important predictor of early outcomes. Preschool children who engage positively with classroom tasks and activities, characterised by showing active engagement, motivation, persistence, and independence as learners, tend to have higher academic achievement than their peers who engage with tasks less positively (Fantuzzo, Perry, & McDermott, 2004; McClelland, Morrison, & Holmes, 2000 in Vittielo, Booren, Downer, 2015). Furthermore, evidence suggests positive engagement with tasks may act as a protective factor for children at risk, mitigating the effects of problem behaviours on academic readiness and social adjustment (Dominguez & Greenfield, 2009; McWayne & Cheung, 2009 in Vittielo, Booren, Downer, 2015).

Finally, we highlight the important role of cooperation between peers. Young children who interact positively with peers experience less rejection and more social acceptance than do peers with poorer social skills (Ladd, Birch, & Buhs, 1999 in Vittielo, Booren, Downer, 2015). Evidence suggests that peer acceptance is positively related to children's classroom engagement and achievement (Buhs & Ladd, 2001; Buhs, Ladd, & Herald, 2006 in Vittielo, Booren, Downer, 2015).

5.8 The role of the kindergarten

Today more than ever, there is a need in the preschool period for forms of learning that shift the role of the child from that of a passive information receiver to an active creator of knowledge. What is therefore needed is to introduce new innovative approaches to working with children in order to ensure a high-quality preschool education.

A high-quality kindergarten is a community of parents and teachers pursuing the same goal, connected by common values and beliefs (Devjak & Berčnik, 2017). However, the very concept of quality here is impossible to define, because it is so dynamic. The system of preschool education involves many individuals who appreciate different qualities from different points of view and in different terms (e.g. the children's needs and rights, the kindergarten's mission, etc.). Nevertheless, the most important perspective defining quality is that of the children (Vonta, 2009).

Instead of defining quality itself, Woodhead (1999) defined quality indicators representing three levels:

- the input level (e.g. employees, equipment, premisses),
- the process level (e.g. relationships between teachers and children and among children, educational approaches, play, disciplining),
- the output level (e.g. success at school, children's health, children's abilities).

All the indicators from each level influence one another (Batisitč Zorec, 2011), as it is possible to claim that the working conditions (equipment, premisses, requisites) influence the educational process, which in turn influences the output indicators (a child's development, achievements, abilities).

It is therefore necessary to encourage every teacher to critically evaluate and monitor their own work, in order to maintain its high quality level. A teacher must view education and teaching as a mission and challenge and assume the responsibility for identifying, implementing, attaining, and maintaining 21st -century learning outcomes (Al Kandari & Al Quattan, 2020).

The use of modern approaches when working with preschool children requires a highly educated and professionally competent teacher with specific abilities and knowledge, a fully developed personality and unique creativity (Lučić, 2007). Kindergarten management is responsible for their teachers' professional development (Hmelak, 2012).

Peček (2003) points out the following principles of a teacher's professional development:

- A kindergarten must have clearly defined goals.
- The teachers' and kindergarten's training needs must be accurately identified.
- It is necessary to build on top of the teachers' actual knowledge and needs.
- The role of the management is to provide high-quality teacher training.
- The process of employee development has to be constantly monitored and evaluated.

- It is necessary to calculate the cost of training and insure that its quality corresponds with the invested means.
- Support from the management team has to be part of the employees' development.

A kindergarten is an educational institution where everybody – teachers, management and other professional workers included – has to learn. As an organisation, a kindergarten must offer its employees suitable opportunities and conditions for training, e.g. (co-)financing, suitable training programmes, co-operation with external professionals and institutions, provision of the necessary organisational assistance (Hmelak, 2012).

Appropriate material working conditions, i.e. premisses, equipment, materials, requisites, etc., are also necessary for a quality educational process and the introduction of modern teaching approaches. Oversized groups of children, overcrowded classrooms, a lack of suitable material supplies and inadequate teacher competence are among the factors that hinder the successful introduction of modern teaching approaches into the educational process.

Professional support, development and training of employees represent the main tasks of the management team of every organisation (Peček, 2003).

Professional development depends on:

- the goals, vision and mission of a kindergarten,
- working conditions,
- relationships among colleagues at work,
- the employees' mindsets,
- the management of a kindergarten (ibid.).

Kindergarten management must make sure their employees are aware that the ultimate responsibility for their professional development and progress, both reflected in the quality of the educational process, lies with them.

Key words: task-based learning, role of educator, role of kindergarten, role of children, types of tasks

5.9 How to apply a task-based approach to various subject areas of preschool education

In the following segment, we present different ways of using a task-based approach in various subject areas of early childhood education defined in the Slovenian Curriculum for Kindergartens (1999). These subject areas are: Mathematics, Language, Natural Sciences, Social Sciences, Drama Education, Dance and Music Education, Art Education, Physical Education and Technical Education).

Mathematics

Mathematics is omnipresent in our lives and accompanies us throughout our life's journey. Even though most people recognize mathematics is an important subject, few understand what it is all about. Since our perception of mathematics is derived from the way we have been taught the subject, how we present mathematics to children at an early age is very important. Traditional teaching rewards learning rules and procedures, but provides very few opportunities to truly engage with "real" mathematics (Van de Walle & Lovin, 2006). Unfortunately, the procedurally-dominated and response-oriented approach is still the leading method in many kindergartens and schools. Teachers who have experienced mathematical instruction comprised of performing an endless string of seemingly meaningless exercises and view mathematics as a body of predetermined, fixed ideas, they are likely to also teach mathematics by transmitting its 'rules' and providing explanations for predetermined, fixed ideas. Foster (2013) calls such teaching "triple-x", meaning the teacher explains and then students do examples and exercises. Alternatively to this viewpoint, mathematics can also be seen as a constructive, creative, social endeavour. Teachers with such a view expect students to explore and discover mathematical concepts on their own.

One of the essential principles of early mathematics education emphasizes that the subject must make sense to the children. We often achieve meaning by doing activities in a context that is close to the children. When they begin to apply their mathematical experiences and acquired knowledge to everyday problems, they usually enjoy solving mathematical problems. Their desire to explore and discover new mathematical knowledge, and to apply previously acquired experience, can be fostered through the choice of good mathematical tasks. A special type of task that is also ideal for use within the task-based learning method are so-called rich tasks

Rich tasks

According to Piggott (2018), rich tasks encourage learners to think creatively, communicate their ideas, synthesise their findings, analyse different points of view and evaluate results. Rich tasks focus on inquiry and involve multiple methods, pathways, and/or representations. There is a parable that a rich task often has a "low floor" and a "high ceiling", meaning the task is accessible to a wide range of students (Bailey, 2018).

What does the use of rich tasks look like in the early mathematics classroom? Typically, children do not immediately know what to do or how to approach the tasks. As teachers, we need to get into the habit of taking a step back first of all and letting the children be creative, use their imagination and think about different approaches. Of course, it will be necessary to introduce the children to a new approach to learning mathematics and to help them understand that not knowing how to solve a task to start with is not a bad thing and that teachers will not provide an immediate solution as soon as they ask for help. Such tasks require time, as children try out different ideas, work individually or in small groups, communicate with each other, explain their thoughts and face challenges.

Research findings point to many benefits of using rich tasks for students. Namely, such tasks give students the opportunity to solve problems, the students have more fun, are more confident, and are more likely to continue studying mathematics or mathematics-related subjects.

Below we present the mathematical activity “Houses” as an example of a rich task for preschoolers aged 4 to 6.

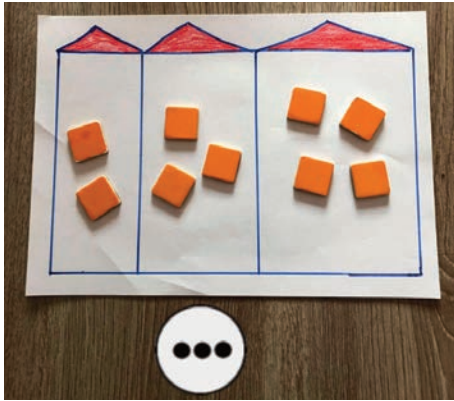
The “Houses” mathematical activity

Pre-task

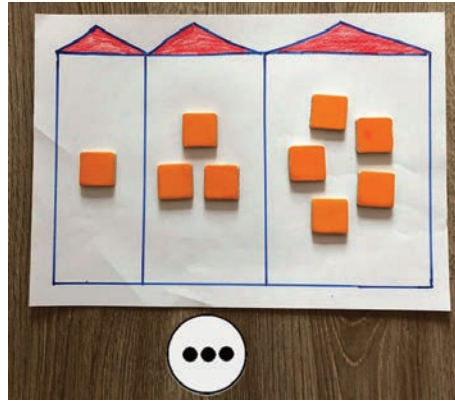
The teacher prepares a sheet with a drawing of 3 houses of different sizes: small, medium and large. The teacher shows the children a card with a number of dots (e.g. three) and they put as many objects (e.g. buttons, cubes, ...) in the middle house as there are dots on the card. Teacher tells them that one more person lives in the large house than in the medium house. The children then put the corresponding number of objects in the large house (four items). As for the small house, teacher tells them there is one person fewer living in the small house than in the medium house, and the children place the corresponding number of objects in the small house (in this case two objects, since that is one fewer than in the medium house). Figure 2 shows an example of the arrangement of objects according to the instruction described above (three in the medium house, two in the small one, four in the large one).

The teacher continues with the instruction, but instead of using the relation one more / one fewer, the teacher tells them there are more people in the large house than in the medium house and fewer people in the small house. Figure 2 shows an example of the arrangement of objects if 3 people live in the medium house, fewer in the small one, more in the large one).

After the children have represented the numbers in these three houses by placing the objects inside them, they compare and discuss their solutions and talk about the different possibilities. For younger children or if the teacher notices that the described activity with three houses is causing problems for some of the children, they can try a simpler version, i.e. only two houses, and in this way explore the relationship one more/one fewer and more/fewer.



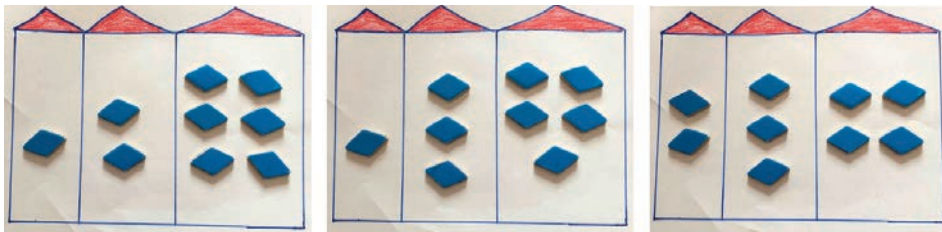
Exploring the relation of one more/one less. three people live in the medium house, one more in the large house and one fewer in the small house.



Exploring the relation of more and less. three people live in the medium house, more live in the large house, and fewer than that in the small house.

Task

When the children have understood the activity and performed it several times with different numbers, the activity can be upgraded. Now the dot card no longer represents the number of people in the medium house, but the total number of people living in all three houses. Let's illustrate this using the number nine as an example. The teacher explains to the children that there are nine people in total living in the three houses, with the same rule that the small house has the fewest people, the medium house has more people, and the large house has the most people. The children then try to explore different possibilities and look for solutions. They present their solutions by placing objects in the houses, compare the solutions and discuss all the possibilities.



There are 3 possible solutions to the task, which states that there are a total of nine people living in those three houses.

Review

For the number nine, there are several possible solutions where at least one person lives in each house, namely 1-2-6, 1-3-5 and 2-3-4 (see Figure 4). For the number six, only one solution would be possible, namely 1-2-3.

The teacher may consider doing the activity several times with different numbers and using different contexts (e.g., instead of different sized houses, perhaps different sized garden beds in which to plant lettuce seedlings, different sized

carts in which to put boxes; small, medium and large Dalmatian puppies with different numbers of black dots, etc.).

As we can see, this simple activity can be a rich mathematical environment that promotes an understanding of the relations between numbers.

Mathematical activity “House”

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There were no major problems with the phases of task-based learning. The only problem we encountered in preparing the materials for the activity was how to design the board with houses of different sizes. After a discussion with the math professor who had prepared the math activity “Houses,” we decided to use a board where the houses are different widths and heights to give the children a better understanding of the terms smallest, medium, and largest house. This way, the difference in size between the houses is clear at first glance.



Modified board used for the activity

During the pre-task (the instructions said that three people live in the middle house, one fewer in the smallest house and one more in the largest house), three children followed the instructions well, understood them and solved the tasks individually without major problems. They also had no problems continuing the task (three people live in the middle house, fewer people live in the smallest house than in the middle house, and more people live in the largest house than in the middle house). However, when discussing their solutions and the different possibilities of correct solutions, the children needed encouragement or supporting questions to reach these conclusions. Only with this help could they conclude that the different solutions were possible.



Children discussing different solutions

The remaining four children did not understand the pre-task. Therefore, we helped them by replacing the three-house board with a two-house board and pointing out to them that fewer people live in the smaller house and more people live in the larger house. Only then did the children successfully complete the pre-task. However, they were unable to discuss their solutions or the notion that different solutions were possible.



Easier version of the board with only two different-sized houses

In the extended version of the task (a total of 9 people live in three houses, the smallest house has the fewest people, the middle house has more people, and the largest house has the most people), a group of three children managed to solve the task. Some help was still needed, as one child initially claimed his friend who had a different distribution of people in the houses had not solved the task correctly. However, with the help of our questions, the child came to the conclusion that both solutions were correct. Through these activities, the children had the opportunity to recognise that several different solutions could be correct.

For the second group of children who had difficulty with the first part of the task and only solved it by changing the board (2 different-sized houses instead of 3), we did not extend the task any further. Although they were able to solve the easier form of the task, we knew from their nonverbal communication and facial expressions that they found the task tiring, and so we did not want to extend the task and deprive them of the success and motivation they had gained from completing the first part of the task.

Both groups of children needed many questions to encourage them to consider different solutions, so the tasks were relatively guided. Based on the activity carried out, we conclude that more different planned and spontaneous activities should have been carried out beforehand at a basic level to give the children more mathematical experience.

Language

The language learning domain in early childhood education includes learning goals related to social communication, receptive communication, expressive communication, and pre-literacy skills (Illinois early learning guidelines, 2015). In this chapter we shall present examples of how to implement TBL in the above-mentioned learning areas, dividing the examples into those for children aged 1 to 3 and for children aged 4 to 6.

Ideas for task-based language learning for children aged 1 to 3

Social communication

Involve children in simple tasks during social communication, such as waving goodbye or saying hello. Encourage the child to point to the desired object and repeat the name of the object after the teacher (e.g. What do you want? Show me. Do you want a ball? Oh yes, that's a ball. What do we call this? A ball.) Design small social conversations where the child will be able to participate in simple back-and-forth communication using words and/or gestures. Design the tasks so that the children are able to practice formal requests and responses. Use repetition to maintain the conversation. Teach the child to use questions beginning with who, what, why through various tasks.

Receptive communication

In the conversation or designed task, ask the children to name the most objects or people in a familiar environment (e.g. family members, favourite toys or

books). Design tasks in which the children have to comprehend compound statements and follow multistep directions. Design tasks in which children respond verbally and/or nonverbally to questions or comments from peers and adults.

Expressive communication

Talk and read with the children often; use words and books that reflect their home culture. Combine dialogic reading with TBL. Involve the children in simple tasks while reading or after reading (e.g. point to the main character in the picture book). Narrate what is occurring throughout the day (e.g. let's sit down and have a snack). Involve the children in communication tasks about their preferences and desires. Design tasks in which children speak three- or four- word sentences (e.g. I want the ball). Design tasks with the use of pronouns, prepositions, adjectives (e.g., "He took my toy"; "The blue car is on the table").

Pre-literacy skills

Invite children to initiate literacy activities, e.g. gestures towards a book or attempts to turn the pages of a paper book or magazine. Design tasks so that children can express their predictions of what will happen in the story, either by pointing to the illustration or by answering questions. Use simple picture books for tasks, ones the children can use on their own.

Ideas for task-based language learning for children aged 4 to 6

Social communication

Design a task where children introduce themselves (e.g. their name, surname, age and preferences in food, sports, colours). Children can also compare their own characteristics with others in the group using listing, comparing, ordering, sorting, experience sharing or creative tasks. Design a task where children rehearse social communication with use of most common phrases and responses (e.g. greetings, questions for "small talk", formal greetings and responses in various social interactions). Design the task in which children will practice how to say polite words (e.g. thank you, please, excuse me) and how to address various people (e.g. Mr. Johnson, Doctor Kennedy, Madame Smith).

Receptive communication

Design a task in which children understand words with the same pattern (e.g. firefighter/s, fire, fire engine, firefighting van). Design a task in which children express their understanding of read texts. For example: a) propose simple questions, that will allow the children to tell a summary of the story: Who was the main character? What happened in the story? What can we learn from the story? b) propose simple questions, that allow the children to use their experiences and prior knowledge related to the story: Have you ever seen the things in the story in real life? Have you ever experienced something similar? Do you know anybody who the same thing happened to as in the story? What else looks like this? Where can we find this? c) propose questions according to taxonomies (e.g. Bloom's taxonomy); d) propose questions stemming from basic cognitive concepts in preschool education (abstract concepts such as never, always, before, after, at the beginning, in the end; concepts of spatial orientation and lo-

cation such as above, below, in the middle, to the left, to the right, in the corner, concepts for quantifying such as something, everything, little, much, the biggest, the smallest.

Expressive communication

Design tasks in which children can play and experiment with language through songs, word rhymes or games. Example of a game: What is this? Describe the object and let the children guess what you mean. Switch roles, so that the children describe the object, and you guess their meaning. Choose a letter or phoneme and let the children try to find as many words as possible starting with the chosen letter or phoneme. Spell simple words and names, let the children guess the first and last phoneme. Design a task in which the children tell their own story and draw it.

Pre-literacy skills

Design a task in which children describe the illustrations in picture books. Design tasks with puzzles, Guess who? games in which children propose puzzles for their peers. Design a task in which children create reading material (e.g. a pocket story, timeline of their daily routine, a sequence of events that happened over the weekend).

Natural Science

Structuring learning activities according to the TBL approach is highly desirable in scientific subjects, as this encourages children **to develop the skills for certain simple daily tasks** (pouring, cutting with a knife, peeling, using tweezers, using a magnifying glass, weighing, etc.) and also for **acquiring initial skills in the arena of scientific exploration** (developing the procedures of the natural sciences: perception, comparison, counting, measuring, sorting / ranking, editing, conducting experiments, communicating, reasoning, predicting, making assumptions and doing research). It is important that the educator carefully plans out the intended skill and devises an appropriate task for the children, that meaningfully includes the use of aids and practicing the simple steps that are the basis for acquiring a certain skill. As we have defined for a planned task in TBL more generally, preschool children require tasks that are taken from everyday life and motivating enough to have a clear conclusion, so that the child knows when the task is done. All this simultaneously applies to properly selected tasks in the field of science. It is recommended that the evaluation of the completed task include some activity that helps the children evaluate the task's success, rather than just verbal reasoning, which makes more sense for older, school-age children.

The following is an example of the implementation of TBL in a kindergarten, which primarily involves the acquisition of pouring skills. Meaningfully, the implementation of the task also includes skills related to research, especially perception, comparison, editing, communication via a spreadsheet and reasoning.

Pouring water or tea

Pre-task: The teacher shows a nicely prepared breakfast table, where cups of tea are placed on saucers. What follows is a conversation about how nicely the table is prepared and a question: Do you know how to pour tea into cups without spilling a lot of tea? **The task** of the children in the group is how and with what to pour the tea so that they spill as little as possible. They will later show what they have learned to the remaining children in other groups and tell us what is needed to make someone more successful at pouring water.





Material: The teacher prepares several tables for pouring, where the children work in groups of three or, even better, in pairs: a larger pot of water, one larger and one smaller ladle, different jugs with funnels, various bottles and smaller pots – all the containers should be ones used in real life and not just toys. The containers can be slightly different for each group. The task is for the child to pour out a teacup of water without spilling any – and at the same time choose the most appropriate device among the different options.

It is necessary to provide cloths to wipe up any spilled water. It is desirable that different groups of children (with usually over 20 children in a kindergarten class, this means at least 7 groups) choose different ways to pour in which they can be successful.

Review: The children will soon find they are more successful when pouring with the containers whose edge does not overflow. They will find it is easier to pour more accurately when pouring from a bottle or pot, if they support the container with one hand. They are also likely to be more successful using a smaller scoop.

The task can be upgraded for the final **evaluation** and presentation to others by adding a checklist on which the children can record the success or failure of a particular tool when used for pouring. Ideally, the checklists should include photos of the utensil used or even sketches for older children. For easier work, these photos can be displayed on a common table and the children will know from their checklists which utensils they should try out and evaluate.

At the final presentation to the rest of the class, the children present their findings on a checklist and enter their results into a shared table on a larger poster prepared by the teacher. Together, they figure out which device and method was most successful for the entire kindergarten class. In doing so, the teacher must emphasize that other aids can also be successful enough, as has most likely been shown by the collective analysis.

WHAT?	HOW?
	
	
	

An example checklist

Example of a filled-in checklist (WHAT is a list of utensils with a photo or schematic image, HOW is a record of the performance of each utensil).

Each group or pair will carefully present the steps of appropriate pouring – in groups of older children one can perform, the other give instructions, to learn in terms of algorithmic thinking. An example of a child's instructions might be:

Place the pot near a full container. Take a small scoop in your hand. Hold it in the middle. Put it in the water of the larger container. Lift the full scoop out of the container. Hold it straight. Move it over the pot. Lower it into the pot. Turn the scoop over to pour out all the water. Lift the scoop out of the pot. Repeat until the pot is full. The pot is full when the water is just under the rim.

Similarly, we would like to hear what the child has to say about helping themselves by holding the pitcher with their right hand when pouring, while also supporting it with their left hand in front. Similarly when using bottles. If the teacher concludes after the presentation of the task, that there is still time for the children to practice the presented skills they have researched themselves, and there is enough motivation to do so, now is the right time to practice pouring according to the presented steps.

At the end of the completed task, the children can sit at the common table and carefully pour warm tea into their neighbour's cup with the selected tool (the one chosen through collective analysis or the one more successful for that individual child). The atmosphere should be sufficiently collected and relaxed, that it is still possible to pour without fear, while at the same time not feeling uncomfortable. However, they should be allowed to ask another child or the teacher to do the pouring for them and say they will practice the task several more times in the following days.

Social Sciences

The social sciences are defined as the part of a preschool curriculum concerned with the study of social relationships and the functioning of society. The knowledge and skills learned through the social sciences prepare children to become informed and engaged citizens of their country and the world. Including social sciences in the educational curriculum of early childhood years provides an opportunity for adults to support children as they are developing a sense of self and an awareness of their family and community. TBL is one of possible didactical strategies appropriate for teaching social sciences. Below is one example on a traffic-related topic for children aged 4 to 6.

How to cross the street?

Learning goals: the children learn how to cross the street, learn about basic traffic signs for pedestrians, learn about safe behaviour as pedestrians in traffic.

Pre-task

The teacher prepares visual didactic materials for 5–8 basic traffic signs that are most common in the child's environment and can be seen by most of the children on their way to the kindergarten. Below are a few examples of such traffic signs.



Traffic signs

The basic new concepts and vocabulary-building ideas are: traffic signs, traffic lights, pedestrians, how to cross the street using a pedestrian crossing, how to walk along a road without a pavement... new concepts and vocabulary-building ideas depend on the children's previous knowledge.

1. For motivation, the teacher asks the children about each sign separately: Do you know this sign? What is the meaning of the sign? Have you ever seen such a sign? Where? Do you know how to cross the street (with a traffic light, with a pedestrian crossing, without a pedestrian crossing)? Do you know how to walk alongside the road (with a pavement, without a pavement)? Why do we need traffic signs? What can happen if we ignore the traffic signs? The teacher gives positive feedback to all correct answers and explains the traffic rules for the questions that are less clear to the children. It will probably be less clear to them how to correctly cross the street and how to walk alongside a road without a pavement. The teacher prepares additional video examples of correct pedestrian behaviour in such situations, to ensure the children understand the rules properly.
2. The teacher verbally introduces the task to the children. Children in the group are divided into smaller groups of 3 to 5. Each group receives the same traffic map. The traffic map includes traffic signs mentioned in the pre-task, which can be moved using sticky spots placed around the map. The map includes points of interest, like the zoo, sweet shop, ice-cream parlour, playground and a child's home. The map is made of plastic paper, making it possible to draw and erase lines on the map with different coloured pens. Each group also gets a small figure of a "boy" or a "girl". The basic idea of the task is for the children in the group to move the figure around the map from point A (e.g. the kindergarten) to point B (e.g. the city park or sweet shop). The children will report on their decisions at the end of the task cycle. Each group gets the same task at once. The children should mark the first task on the map in blue, the second task in green and the third task in red. The timeframe for each task can be 5 to 10 minutes.

The task cycle

Task 1

How can the little boy go from the kindergarten to the city park in the shortest possible way?

Children have to draw with the shortest path on the map in blue, marking all the points where the boy has to stop and cross the street. In the report they have to explain their decisions and the traffic rules they considered.

Task 2

How can the little girl go from the kindergarten to her home by the safest way?

The children have to draw the safest path on the map in green, marking all the points where the girl has to stop and cross the street. In the report they have to explain their decisions and the traffic rules they considered.

Task 3

The boy is going back home from the kindergarten, but on the way he wants to visit some interesting places. Where will he go?

The children have to draw a path on the map in red, marking all the points where the boy has to stop and cross the street. They can change the traffic signs on the map if they wish. In the report they should explain their decisions and the traffic rules they considered.

The planning stage

The children check their tasks and each child or pair in the group reports about a single task. In this stage they can still change their decisions.

The report stage and the review

The children report on their tasks in groups. The other groups and the teacher listen to the presentations. The teacher gives positive feedback. If corrections are needed, the teacher asks their peers for corrections. If their peers don't know the answer, the teacher explains the correct answer.

During the pre-task, task cycle and report stage, the teacher should encourage the quieter children and should not interfere with the group work unless absolutely necessary.

Evaluation of social studies activity – Safe traffic

Author: Zvezdana Murko

For my activity, I chose Social Studies – Safe in Traffic. The knowledge and skills children gain through social studies help them become more informed and independent. As a group, we learned about safe integration into traffic as pedestrians. We learned that all road users must follow the rules of the road. We started with walks, observing traffic signs and then with the children's help I cre-

ated a map of the city. I included in it various different riddles for the children (no sidewalk, no pedestrian crossing...), after which the children themselves looked for the safest way to get from point A to point B and during the game they placed the traffic signs in the right places on the city map. The activity was just the right difficulty for children aged 4–6 years. We achieved our set goals: recognizing traffic signs, finding a safe route (the child is able to find a safe



Route map



Finding a safe way

route). Performing this activity did not seem difficult to me, since this is the way we work in our group all the time. However, it is true that it is faster to work in small groups because it is easier to maintain attention and there are fewer disruptive factors. Imparting knowledge in this way for me is just a confirmation that we are heading in the right direction. The children's satisfaction and their curiosity in sharing information are the most important confirmation for me.

Drama education

Developmental processes at a preschool age are concerned with offering children a variety of opportunities to actively learn about the world and the life around them. The aim of familiarizing preschool children with theatrical education is to develop their creative potential during early development, thereby creating an imaginary space in which they can develop their personalities in new ways. Re-experiencing their activities through gameplay helps children process their past actions and stimulates them to seek answers to every-day questions. They are preparing for life through games. Stepping into the role of another, telling stories and dressing up in costumes brings joy even to a two-year-old child and helps them discover and understand the world.

Kindergartens are in themselves already a place of learning – one can hardly find a more encouraging environment for developing social competencies than one where daily play with other children is a constant. However, there are ways to further enrich this potential. Theatrical plays stimulate the areas of emotion, knowledge, experience and understanding in the field of preschool aesthetic education, all at once. They contribute significantly to a child's holistic perspective and playfully enrich their emotional, cognitive and motor development, thus having an incredible potential for use in kindergartens.

Judging from the experience of educators, theatre offers a new and rich opportunity to create bonds between them and the children. At the same time, it enables the educators to gain a different perspective of individual children. They can narrate, invent, and indulge in storytelling with the children without being afraid of the final product's success, as the acting itself is the goal. There are no concrete answers to concrete questions in theatrical activities. Here, we emphasize the "process".

Younger children are characteristically curious, every novelty excites them, enticing them to participate. The task of the educator is to maintain, or even increase, the child's curiosity so that it does not fade during the implementation of practical work. Children must be motivated throughout the implementation. Weidemann (2010) highlights the importance of the sense of security given to the child by the educator, because it is easier for the child to integrate into an environment they perceive to be safe. He also states that the educator must establish inter-group relationships in which the children feel accepted. Korošec (2003) believes that an educator's task during play is to encourage the child to think and be creative. Additionally, he states that the educator should not interfere with the child's approach to playing and thinking. It is important for the educator to play the game just as the children do and to creatively encourage the children, to believe in their imagination. The role of the children is to take an active part in theatrical plays by opting in voluntarily, following the successful motivation of the educator. The target group for this program are also children of the earliest age group. Their activities consist primarily of imitation or expression through movement, facial expressions or speech. Children take on two roles: the actor and the spectator. The games are designed in such a way that allows the children to observe, compare, define and express themselves spontaneously, as well as experience themselves and others, their environment and the art in a way that enables them to communicate, participate, cooperate, adapt and listen to their peers, thus tolerating them. They take on different roles, develop the ability to express different emotions, events, situations, explore various dimensions of their bodies and verbal abilities. They actively explore with their senses.

Examples of theatrical games for children aged 1 to 3

Magical Ball

Skills: physical expression, movement. Age: 2+. Layout: circle. Material: balls.

We pass each other a real ball, which we then replace with an imaginary ball. Then, we can increase the ball's size and roll it towards the children. Next, we replace it with a very small, featherweight ball. Now we are passing two balls at once. Finally, everyone conjures up a small ball, puts it in their pocket and carries it home.

Versions of the game: the ball can be replaced with a balloon, we can imagine that the ball changes colour when we throw it, guess what colour it is (Marquard, Jerg 2010).

Travelling

Skills: physical expression, movement, coordination. Age: 2+. Layout: circle. Material: large pieces of fabric.

We sit down in a circle and pack up an imaginary suitcase in the middle. Everyone says or shows what they are going to take with them on the trip. Finally, we all help to close the suitcase. We divide the children into groups. Each group has its own piece of fabric that represents a means of transport. The groups can travel to the zoo, take a picnic or visit the seaside or the mountains...

Versions of the game: We all board a ship, represented by a large piece of fabric. The educator is the captain, and we all travel the seas together. We can sing songs. Next, we face big waves, we all fall into the water and swim to the mainland, or land on a lonely island (Marquard, Jerg 2010).

Examples of theatrical games for children aged 4 to 6

A Labyrinth of Ropes

Skills: Body, expressions and movement. Age: 4+. Layout: any layout throughout the space.

The game leader ties invisible strings to the middle finger of each child. An invisible force is pulling on the string, so that in turn, the string is pulling us. Left, right, forward, backward, up, down, zigzag. Then we tie the string to the tip of the nose, the belly, the big toe of the left foot...

Versions of the game: We choose different places to tie the strings to, we slowly change into living people after moving with the strings, e.g. we turn into a man with a huge belly, a robot, a dwarf (Swale, 2009)...

The King Who is Never Full

Skills: stage, performance. Age: 3+. Layout: stage. Material: plate, spoon, drum.

Two children are "on stage". One represents the king, the other a servant. The king can hide behind some object, so that only his head is visible. The king says: "The king is hungry!" The servant then hurries towards him and starts feeding him. The king never has enough and yells: "More, more, more!" Then, another servant arrives. That continues until the last child is at the king. Then the king collapses. Older children can name the food they are feeding to the king (Marquard, Jerg 2010).

Super Chair

Skills: stage, performance. Age: 4+. Layout: stage. Material: chair, handkerchief, pillow.

The children sit in a circle. We place a chair or other object in the middle. Every child performs something with the chair that contradicts its actual use. E.g.

a chair can become a horse, a piano, a mailbox... This is a good exercise for a symbolic game with puppet objects (Swale, 2009).

Object animation

Skills: stage, performance, improvisation, animation, conceptualization. Age: 4+. Layout: stage. Material: everyday objects.

We bring objects of everyday use in a bag. Each child takes an object they are about to test out of the bag, looks for all its details, textures, moving parts and sounds. How can the object's exterior develop into a personality? We then give the children some time to improvise with their object (walking, moving or maybe speaking). Then, we group them in pairs. Their task is to prepare a short scene with their puppet objects.

Versions of the game: Random objects are passed round in a circle; each child gives the object a new meaning. This game allows you to get to know and discover children's characters, it develops their imagination and gives them an opportunity to experiment with the basics of puppet animation (Swale, 2009).

Dance education

As part of preschool education, dance education in kindergartens encompasses the whole complexity of a child's psychophysical development and is integrated with other activity areas. As Kroflič and Gobec (1995) point out, in its broadest sense, dance education means educating through dance, which as an educational method is carried out in the form of movement games. It contributes to a child's holistic development, enables their emotional, social, intellectual and spiritual growth, while also providing them with the opportunity to express themselves through movement.

By dancing, children express and communicate, improvise, create their own dances, play freely with their bodies, explore various types of movement and develop their imagination.

It is important that we underpin this by developing the array of movement elements, which a child builds through basic dance elements – energy, space, time (Zakkai, 1997). In this way, we allow the child to express any internal experience or feeling through movement. The teacher's role is to direct the child's movement ideas and to offer concrete knowledge with clearly defined goals. The relevant teaching approaches must therefore be dynamic; they must constantly change and complement one another.

At the preschool age, guided activities are planned in accordance with the psychological characteristics of individual developmental stages as well as the children's mental and physical characteristics.

Planning is based on the objectives we want to fulfil through the chosen type of dance activity. As a type of motor activity, dance is the free creation and expression through movement, stimulated by external or internal stimuli. External

stimuli in the form of props enable a child to explore the relationship between themselves and the objects, the movement made possible by an object, as well as to discover new dance steps and motor solutions. Internal stimuli are children's ideas stemming from their previous experiences. With the help of natural, spontaneous movement, children will explore their own dance expression. Dancing is mostly an individual form of creativity, or for work in small groups. As a type of motor activity, dancing encourages individual expression and creativity and enables a child's self-assertion and self-confirmation (Denac & Jurgec, 2020).

Within the creative process, a group has a clearly defined task. The focus is both, on a child's dance improvisation, as well as on the final dance product, which the children and the teacher create together through exploration and search for various motor solutions for a certain topic.

Group creativity cannot occur without communication. Mutual relationships lead to a specific encouragement, provide help and solidarity on the one hand, as well as competition with oneself and others on the other. Within the group, an individual transforms, becoming aware of others, sensing their presence, the space and the objects in the space. The teacher plays a crucial role in this, not only by creating the dance situation itself and selecting the material for exploration through movement, but also by providing suggestions and questions opening up a world of possibilities children can experience through their motor expression (Smith-Autard, 2002). Thus, the teacher has the role of an organiser and assistant in the creative process, rather than that of a leader.

Every activity has a certain topic which is introduced to children at the initial motivational stage with the help of various stimuli. The basic stimulus is music, which sets the rhythm of the movement and functions as an authority to discipline the listener. Children follow the principles of the music, as they respond emotionally to it (Kovač Valdes, 2010).

Creating for a specific topic (task) is carried out according to the following steps:

- Improvisation represents the first step in creating something new based on one's own experience. The teacher provides the initiative for creativity, with the aim of relaxing the children mentally and physically as much as possible. The stage of improvisation represents a unique, unrepeatable event which exists "here and now". It is therefore important that children are given enough time during this stage to explore, relax and find their dance expression. We encourage children to use their own natural movements, while leading them to explore the various elements of dance, such as energy, space and time (Kaufman & Ellis, 2007). The focus is on spontaneity, originality and individuality in various movement situations in which an individual develops proper motor expression (Joyce 1994, as cited in Lobo and Winsler 2006, p. 503), forms and creates various learning and educational contents.
- From the abundance of spontaneous movements provided during the improvisation stage, the teacher selects those which correspond to the task given, transferring them to other children. This stage includes group

monitoring of individual creations or a common agreement on how to solve individual parts of the dance task. During this stage it is important for a child to cooperate, makes arrangements and respects what is agreed within the group.

- With fixation and formation of the dance product, the motor objectives are fulfilled, in particular: the development of motor skills and body scheme, the strengthening of the muscles, the acquisition of general fitness. If children set a common goal and pursue it in a pleasant atmosphere, the fixation or training stage will be seen as game rather than a constraint.
- The last step in dance creation is the presentation of the final dance product, which represents the conclusion of the given topic (task). In this way, the child acquires experiences in a specific area that can serve as the starting point for the next, more demanding dance task.

Example of a dance-education task for children aged 4 to 6

TOPIC: Gushing Spring

Overall objective: To develop aesthetic perception and artistic representability/conceivability.

Specific objectives: To develop artistic expression of sensory, emotional, cognitive, aesthetic, and value-related experiences.

To nurture and develop individual creative potentials at the stages of experience, conception, expression, communication and assertiveness in the area of dance creativity.

Children's activities

The child:

- explores various movement possibilities and searches for motor solutions to a given task,
- makes appropriate use of the material and discovers new forms of movement enabled by the material,
- suitably connects musical and dance motifs,
- follows the commonly agreed objectives and adapts to the group,
- rehearses the sequence of the agreed movement motifs,
- develops the capability to evaluate their own work.

DANCE ACTIVITY TYPE: dancing – dance expression

METHOD: from improvisation to guidance

FORM: class work, group work, individual work

MEANS: music: Albert Zabel – La Source (Am Springbrunnen) for Harp, Op. 23 (1897) – <https://www.youtube.com/watch?v=0iLJE43aJnA>, garden fabric, picture material, recordings of spring water

Pre-task:

- The teacher announces the topic and leads a conversation with the children about natural springs. Together they look at the pictures and watch video recordings showing water flowing from various springs.
- The teacher plays the music and leads a conversation about the children's experiences and feelings.
- Listening to the music again, the teacher encourages children to imagine their own natural spring.
- Listening to the music several times on loop, the children dance individually, explore and search for different motor solutions to the given topic.

Task:

- The teacher divides children into smaller groups; each group is given a piece of garden fabric and the task to perform a dance to the topic of natural springs.
- The groups perform one after another and the spectators have to guess what is going on in each dance.
- Together with the children, the teacher selects those movement motifs that correspond best to the given task.
- Using the method of teacher leadership, they form a dance product together and agree on a fixed routine by repeating it several times, thus giving it its final shape.

Review: At the end, they record the dance, watch it together and evaluate the product.

Evaluation of the dance activity "Gushing spring"

Author: Sidonija Bratuša

In our work, we considered all the phases of TBL learning. The activity itself was well designed. It was adapted for younger children, ages 3 to 4, by doing the activity gradually and slowly. First, we looked at the water source online, examined photos and talked about our vision. The children were very persuasive regarding the activity, motivated and creative. They were relaxed and had fun during the course of their activities.

The main problem I encountered was the fact that improvisation is a very demanding activity for children aged 3–4. Not all children have a strong sense of improvisation and a developed imagination. Therefore, it is important for the educator to systematically plan how to guide the children through the impro-

visation phase. I also think that the way the educator frames this experience and how it is passed on to the children is very important. The children's reactions were good, positive. The children had fun during all the phases.



„Gushing spring” dance

The children acquired new dance skills, such as specific movements, collaboration, patience and the use of dance props. They played freely with their bodies, explored different movements, and developed their imagination.

Music education

The basic task of preschool music education is to develop musical sensitivity through various activities, to encourage musical experiences through the aural perception, reproduction, performance and creation of musical contents. Different musical activities develop children's musical abilities and skills and promote their joy for music (Denac, 2010).

Musical activities enable the development of creative potentials that are shown in a child's exploration and uncovering of the world. "A creative child typically looks for solutions in various different directions and unusual ways" (Ferbežer, Korez & Težak, 2006, p. 12). Therefore, creativity can be developed through different creative tasks that enable a child to explore and look for their own new solutions to a given topic (Kalimulin & Utemov, 2017).

The first forms of musical creativity in a child can be detected as early as the preschool period, for example when a child sings a song they made up. At first, the melody of such a song is connected to its text; only later on will the child create vocally on the basis of melodic ideas. In the development of their musical creativity, children deal with melody, rhythm, form and expressive qualities (timbre, tempo, dynamics) (Denac, 2010).

The objective of musical creativity is in the creative process itself, not in the product created with a certain artistic value. In the preschool and primary-school periods, musical creativity is developed by:

- exploring the world of sounds,
- vocal and instrumental experimentation,
- creating instrumental accompaniments to songs, stories and dramatisations,
- creating original instrumental contents,
- creating original vocal contents (making up a text and a melody, making up a melody to a familiar text or a text to a familiar melody),
- finishing unfinished songs, which allows the children to create melodies as well as texts,
- creating sound images, melodic and rhythmical questions and answers,
- designing and making children's musical instruments, etc. (ibid).

Example of the didactic unit "musical creativity" for children aged 4 to 6

TOPIC: Musical Creativity

UNIT: vocal creation – composing a melody to a counting-out rhyme

Overall objective: To develop creativity and specific artistic abilities. To use and develop skills, learn, discover, experiment with artistic means (body, voice, materials, objects, instruments, techniques and technologies) and their expressive properties.

Specific objectives:

The child:

- expresses favourable attitudes towards vocal creation,
- rehearses familiar counting-out rhymes,
- learns the meaning of the term composer,
- creates a melody to the text of a counting-out rhyme,
- develops tolerance to the creative achievements of others,
- listens carefully to counting-out songs,
- develops a critical attitude towards their own creations.

METHODS: listening, composing a melody to a familiar text, conversation

FORM: class work, individual work

MEANS: radio, CD-player, CD, video camera or Dictaphone

Pre-task: The teacher selects a child and encourages them to count out another child using a familiar counting-out rhyme. The counted-out child will

start a game the children want to play. The teacher then invites the children to listen to a counting-out song. Then the teacher asks the children if they know who wrote the melody that goes with the text of the counting-out rhyme and explains the term composer (a person who creates music, who writes melodies to different texts and writes them down using notes). The children participate in the conversation.

Task: The teacher creates a melody to go with the text of the selected counting-out rhyme and encourages the children to take over the role of composer. As the game continues, each counted-out child makes up a melody before counting out the next child. After creating the melodies, the teacher invites children to create their own counting-out songs, where they create both the text and the melody (rhymes, unusual words, nonsense, etc.).

Review: The teacher records the created counting-out songs and made-up songs. Afterwards the teacher and the children listen to the songs together and evaluate them.

MUSICAL ACTIVITY – creativity with rhythm

Author: Zvezdana Murko

I prepared various motivation for musical activities. First, we visited the conservatory, where we learned some new terms: composer, conducting, rhythm, melody... Through the course of the game we learned small rhythm instruments and played didactic musical games.



Musical activity

I set myself the task of recognizing and maintaining rhythm all the way to the end of a countdown rhyme and to structure the melody to that rhyme. I guided the activity from improvisation to leading. First, the children just continued the already familiar countdown rhyme (counting down) and accompanied it with clapping. As the game progressed, the children created a 4/4 rhythm, to which we started rhythmically saying a familiar rhyme. When they found the right rhythm, I helped them invent a melody. They came up with a simple melody to sing to the same countdown rhyme. Finally, we attempted to combine all the elements, that is, singing and rhythmically repeating the countdown rhyme. This was a very challenging task. The children who had developed a sense of rhythm were able to manage, but the other children had some problems with it.

I have found that the process of moving from improvisation to leadership is the most interesting to the children. Indeed, connecting their ideas to a musical performance is a great challenge and the most beautiful and unique product.

Fine arts education

“Early artistic expression has a double role. The basic role of artistic expression in the younger period is its usability in children’s cognitive development, as well as creating a base for the development of an artistically creative person. Artistic expression of young children does not relate to specific artistic creation. Conscious art design appears later in life” (Vrlič, 2001, p. 13).

Vrlič (2001) also differentiates three parts of artistic activities in the preschool period: an introduction, a central or practical part, and a final part. The educator’s task in the introductory part is to motivate the children. There are various stages within the central part, namely addressing the chosen problem, predicting the purpose, providing instruction for the work, and then producing the work itself. The final part consists of an artistic evaluation, which plays a significant role in the creative process, because it reminds the children of the problem being addressed and gives them a chance to display and present their work, while simultaneously acting as a motivating factor. All of this contributes to the development of a sense of the holistic flow of creative work from the first stimuli to the final product.

“In the process of art education, we plan the structure of the lesson in a way that the stages (didactic-methodical [teaching methods and forms of work, teaching aids, media] organisational (components, time of individual stages) and technical [material and tools]) are arranged in succession according to the artistic task in question (and its artistic problem, technique, motif, etc.). By planning the succession of the stages beforehand and considering various objective and subjective possibilities for work, we must aim for the students to be motivated and cognitively and expressively active throughout the process of art education” (Duh and Zupančič, 2003, p. 102). It is important for the educator to plan out their educational work, as they are likely to take into account the principle of gradualness and deliberation, and to sensibly arrange spontaneous and directed activities, while also arranging for a variety of artistic fields and preparing an easier work-evaluation later on. (Hočevar, Berce-Golob and Prestor, 1980).

The educator must set their goals carefully, as these make it possible to select appropriate content, resources, forms and methods of work. Educational goals are the foundation for a well-prepared and well-planned comprehensive artistic activity. When designing them, it is important for the educator to consider aspects of the children's personalities, anticipate different ways of solving the artistic task, provide the environment and resources enabling the realisation of the chosen goals and to be aware of the possibility of failure in achieving them (Duh, Vrlič, 2003).

Puppets made out of objects from the child's environment and Picasso's artwork made out of every-day, commonly used objects share the same origin. Children love objects they can "animate". This feels close to them and they understand these special figures, which are the fruit of their imagination. This is why their popularity in kindergartens has been growing significantly, as of late (Šinko, 2009).

We can find many materials that work as improvised puppets in the child's environment. Households accumulate bottles, boxes, bags of various shapes and colours... that are just waiting to jump into the stylised world of puppets. Plastic bottle puppets, with their bold shapes and vivid colours, can be very attractive. They are easy to make, and their stylised shapes make them incredibly "puppet-like". The same goes for many other objects in the child's environment. Of course, stylisation should guide us here as well (especially here).

Artistic exercise, example for children aged 4 to 6

UNIT: Marionette design from waste materials.

ARTISTIC FIELD: Plastic design.

ARTISTIC PROBLEM: Construction of marionette.

TECHNIQUE: Waste material design.

ARTISTIC THEME: Marionette.

ARTISTIC MOTIF: Human or animal figure.

GLOBAL OBJECTIVE: For the children to create a sculptural volume by assembling different spatial units.

OPERATIONAL OBJECTIVES:

- For the child to discover that living creatures receive from and contribute to their environment.
- For the child to experience how they and other people influence nature and how they can actively contribute to the protection and preservation of the natural environment.
- For the child to conceptualize waste generation and the possibilities of recycling.
- For the child to create a marionette from waste materials.

Materials: waste materials: boxes and other packaging, strings, leather straps, wooden sticks for control bars.

Pre-task: A puppets made of waste material motivates the children: “Hello, I am Wasto. Why do you think that’s my name? What materials am I made out of? I walk around the world, picking up trash and today I’ve come to your school.” He shows the children the waste materials he’s found. We then relate this to making marionettes out of waste materials.

Demonstration: We demonstrate the technique of designing the figure of a marionette. We combine waste packaging by cutting, assembling, and gluing. We show what can be achieved by gluing and stringing up the puppet and remind the children that we will help them with those steps. We encourage some children to start making their own marionettes.

Announcement of the task: “So that Wasto doesn’t feel as lonely any more, you can make a puppet-marionette.”

The educator’s task: Prepare a table for the various procedures behind assembling a marionette: a table where the children can choose the material for their puppet, a table for connecting – gluing individual parts with leather strips and a table for stringing the marionette to its control bars.

The children’s tasks: The children prepare for their work and make a marionette out of waste material. First, they choose appropriate boxes and other packaging for the individual marionette pieces. Then, they tie the individual pieces together with a leather strip. We oversee their work with Wasto and give advice or help if necessary.

Review: Every child presents their marionette at the end. After the presentations, the children dance together with their marionettes.



Marionettes made out of waste material

Sports education

The preschool age is of key importance for motor development. It is therefore crucial that kindergartens offer children various indoor and outdoor movement activities on a daily basis. This is necessary for the children to develop their motor and other capabilities.

A child's active participation in movement activities has an impact on (Altinkök, 2016):

- the awareness of one's own body,
- the development of the primary motor capabilities,
- motor compatibility (strength/power, coordination, speed, swiftness),
- physical compatibility (flexibility, strength, endurance),
- increase in their socialization levels.

Through various movement tasks, children perceive and discover their body, test what their body can do, develop their capabilities and skills and build their self-confidence (Videmšek & Visinski, 2001). In general, an individual's efficiency in the realisation of movement tasks is determined by six motor capabilities: coordination, balance, strength, flexibility, precision (Videmšek & Pišot, 2007). The higher the level of motor capabilities, the more successful the learning and execution of various motor skills (ibid., p. 66).

Teachers play a key role in the planning and execution of daily movement activities in kindergarten (Brown, Googe, McIver, & Rathel, 2009; Trost, Fees, & Dzewaltowski, 2008). A teacher must be able to act as a good guide in the learning-teaching process, as a navigator, a leader and as the person applying feedback, corrections and reinforcements at the right time and in the right place (Altinkök, M. 2016).

Example of an exercise class for children aged 4 to 6

Movement activity type: exercise class

Topic: At the Circus

Unit: natural forms of movement

Overall objectives:

- To achieve a relaxed execution of natural forms of movement (such as walking, jumping, hopping, rolling, etc.);
- To develop coordination and harmony of movement (coordinated movement of the entire body, hands and legs) and balance;
- To search for one's own path towards solutions to movement problems.

Operational objectives:

- Relaxed application of natural forms of movement to the extent where a child uses them in various situations;
- Development of balance, coordination, power, precision;
- Demonstration of animals and ideas, creative movement.

Work Forms: class work, group work

Work Methods: demonstration, explanation, discussion

Pre-task: The teacher talks with children about the circus. Various picture materials or video recordings can be used for support.

Task cycle: In the warm-up part, the teacher invites the children to play a game called *Circus Animals* in which they mimic various animals (e.g. monkeys, elephants, horses, lions, etc.) with their bodies and movement. In the dynamic stretching part, which follows, children become "circus acrobats". The aim of dynamic stretching is to warm-up properly and prepare the child's body for the next movement task.

In the main part of the exercise, the teacher and their assistant present the polygon and demonstrate all the movements. Then the children start exercising at the various points of the polygon, avoiding initial crowding. During the exercise, the teacher and assistant monitor the course of the exercises and solve any potential problems.

THE "AT THE CIRCUS" POLYGON	Tools or props:
1. The <i>Tightrope Walkers</i> station The children walk forward on a line, maintaining their balance.	/
2. The <i>Clowns</i> station Moving forward, children jump from a closed posture to an open posture.	/
3. The <i>Lions</i> station The children have to jump over a hoop.	3 hoops
4. The <i>Acrobats</i> station Children turn into acrobats and choose on their own movement motifs to use.	
5. The <i>Horses</i> station The children jump over hurdles.	4 hurdles
6. The <i>Monkeys</i> station The children mimic monkeys, hopping from one hoop to another and from one leg to the other.	8 hoops
7. The <i>Jugglers</i> station Children juggle a balloon, choosing the body parts they want to use on their own.	6 balloons

Review: The activity is concluded with a cooling-down period. During this phase we discuss the “circus experience” with the children.

Evaluation movement activity “Circus”

Authors: Sidonija Bratuša, Vesna Čepelnik

We considered all the phases of TBL learning. The children did not know what a circus was, so we watched a circus show online to give them the basic idea. We talked about the animals performing and paid attention to the movements of each animal and performer. This was no problem.

The children’s reactions were very positive, they were looking forward to the exercise. Above all, we had the advantage of having access to a football field, where there was enough space to set up stations.

At each station, the children could use their own mobility solutions.

The children strengthened their coordination, precision, balance, cooperation with others and developed their creativity.

In backyard playgrounds, there is usually not enough space to run all the stations, so in that case I would suggest temporarily reducing the number of polygon stations and still organising the TBL exercise.



The Monkeys station – children hopping from one hoop to another



The Horses station – children jumping over hurdles

Technical education

Technical literacy also includes technology, namely digital technologies and thus a variety of computer applications for smart devices, which have recently been on the rise. According to Chun and Guofang (2014), research in digital literacy is pushing to look more closely at the interaction between technology and TBLT (task-based language teaching). Some studies they cite argue that the use of technology in language teaching promotes the development of digital literacy, which is a crucial aspect of language learning in the 21st century. The literature review in Chun and Guofang’s (2014) article provides a critical overview of the rapidly growing collection of studies examining the elective affinities of technology and tasks. On the one hand, technology facilitates and

enhances TBLT both in terms of its effectiveness and its contribution to our understanding of TBLT; on the other hand, TBLT serves as a useful pedagogical framework and a set of principles that enrich the use of technology for learning. Introducing technology into the equation increases the number of places and resources for task completion and allows for the possibility of freer and less structured tasks (Chun and Guofang, 2014).

In the Australian government document *Early Learning in STEM – Multimodal learning in the 21st century* (2016), the authors conceptualize STEM's working definition of early learning as: "the creation of learning environments in which children's curiosity about the world can thrive via systematic, authentic investigations that utilise a range of design thinking skills and scientific knowledge and processes" that provide a useful foundation for educators to design exemplary STEM learning activities in the preschool years. They were derived from the fact that there are a large number of apps on the market, but only a limited number can be considered useful for educators to promote STEM in early learning. Therefore, they established five criteria for STEM apps that are consistent with this definition and can be categorised as: skill-based, exploratory-game-based, constructive, experimental, interactive e-books, creative and open-ended (Victoria University, 2016).

Despite advances in digital technology, it is important for preschool children to handle objects and create using their hands and physical tools. Young children have an innate tendency to engage in engineering activities, demonstrating sophisticated design and thought processes (English, 2018). Engineering is an important part of a STEM education (science, technology, engineering, mathematics) and yet is largely neglected in the early and elementary years (Aguirre-Munoz & Pantoya, 2016; English, 2016; Watkins, Spencer, & Hammer, 2014 in English, 2018).

English (2018), according to the research review, considers: (a) the need to include both engineering design processes and engineering thinking when promoting early engineering learning, (b) the creation of developmentally appropriate experiences that provide pedagogical facilitation, and (c) the integration of engineering into a STEM education. Engineering thinking emphasizes design processes and includes systems thinking, innovative problem finding and solving, visualization, collaboration, and communication. Systems thinking and creative problem solving are frequently cited as foundational not only in engineering learning, but also across the spectrum of STEM education (e.g. English & King, 2016).

Engineering-based problems or tasks have the potential to encourage young students to "learn from and about the problem, while continually reflecting on, and possibly reshaping, prior knowledge and experiences" (McKenna, 2014, p. 232 in English, 2018). Early engineering-based problems and tasks that embed design constraints and draw on meaningful interdisciplinary contexts can help learners identify the knowledge they need for each new situation. This knowledge is further developed as learners engage in related mathematics and science activities, subsequently learning what is required when applying design processes to solve problems. Furthermore, learners develop knowledge of the

ways in which their design can provide suitable and optimal solutions (English, 2018).

Rich opportunities for early STEM learning exist in the children's literature, according to Aguirre-Munoz and Pantoya (2016). Engineering-centred literature and academic conversations are effective tools for broadening meaningful participation in engineering education. We can find many comprehensive examples of how literature in general can provide stimulating scenarios that are open to the exploration of engineering ideas. Children are encouraged to use the information in the stories to identify engineering problems, for example, by imagining that the characters need their help in solving a particular dilemma. Children may identify the nature of the dilemma, the constraints that may exist in finding possible solutions (e.g., limited materials or tools available, time constraints, ways to avoid predators), and approaches to addressing the problematic situation. (Munoz and Pantoya, 2016).

Engineering with the Three Little Pigs (adapted from Jurgenson and Delaney, 2020).

This TBL activity uses the story *The Three Little Pigs* (Marshall 1989) to introduce the following **task**: "Design and build a house for the pig that the wolf can't blow down."

Pre-task: Children engage in the construction process by working in small groups to brainstorm ideas, design and build their house from the selected materials, then test their design and evaluate its success. The children gather information about the situation from the story and define the problem to be solved. As a result, the children decided that they needed to build strong, well-made houses, big enough to hold the pig provided to each group. After motivating the students and getting their attention, the task was presented.

The only criteria and **correct solution** to the set task is that the house must be large enough for the toy pig given to each group and that it must be built with the materials given. There must be plenty of drinking straws, craft sticks, uncooked spaghetti noodles, paper clips, tape, toothpicks, paper, Play-Doh, corn-starch foam, hairy modelling wires, etc., available.

Completing the task: The children build their houses on cardstock paper so that they can easily move them around when it is time to test their house. As the children build their houses, the teacher asks pointed questions to stimulate thinking about the strengths and weaknesses of their design. A photo of each house built can also be taken.

Next, the children predict whether their house will get blown down by the wolf's breath. One by one they test their houses. Before the hair dryer (wolf) is turned on, the whole group sings, "And he huffed, and he puffed, and he ..." The hair dryer is turned on low and pointed at the house structure for 20 seconds.

Review: After all the houses have been tested, we reflect on the strengths and weaknesses of each one. In the last step, children have the opportunity to rebuild their house and apply new knowledge from the shared experience.

The redesign process supports the children's perseverance. Redesigning takes time, so the teacher need to plan for this as part of the activity. In addition, some children can make changes without justification, so it is also important to ask the children why they made each change. This supports children to construct things based on arguments and to critique the reasoning of others. It also gives them the opportunity to justify their conclusions (in this case, construction decisions) using claims or examples.

The children then present their new constructions, which provides an opportunity to discuss how and why they improved their houses to better withstand the wolf's blowing and to fit the pig inside. Younger children can skip the argumentation phase, but will try to complete the task better.

Evaluation of technical / science education activity

Author: Dragica Sernc

The tasks were planned and carried out in the following steps:

- Introductory motivation and comparison of similar information.
- Implementation, execution of the task and sharing of personal experiences.
- Conclusion, including a review or test of the task.

The introductory motivation encouraged the children to think on a larger scale. They recalled their previous experiences and knowledge and most importantly, the children recognised that there were multiple ways to do the task. Special emphasis was placed on recognising that effort and ingenuity are more relevant and important than competition in the context of a technical education.

During the task, the children were motivated, they agreed on possible solutions, tested them, planned them and predicted what would happen during the test.



Introductory motivation



Making a house

viewing the task set, they were confident, knew the materials they were working with and described the strategies they had tried. They had realistic expectations of the test. They helped the wolf blow away the house and playfully looked forward to the results. Most importantly, they were willing to be patient and meaningfully participate in the other children's tests.

During the activity, the children gained experience in collaboration, planning, anticipation, and networking. Above all, the children realised that working on a task with the freedom to think about various solution strategies is a challenging and enjoyable experience.

In my opinion, it is the educator's job to be sensitive and thoughtful when planning and implementing such activities, as all children require care, including those who are more speech-dependent or need more time to engage in the task.

5.10 Questions for Teachers

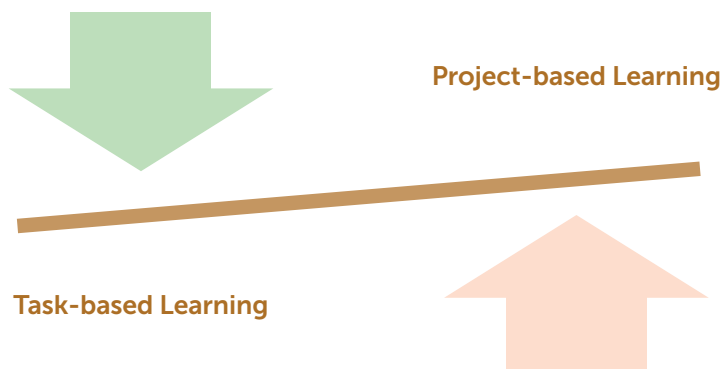
1. Did I follow all phases and steps of task-based learning (preparation, task, review)?
2. Have I considered the child's interests, characteristics, and personality traits when planning task-based learning?
3. In planning and implementing task-based learning, have I ensured a balanced representation of the different domains?
 - 3.1. Which areas (music, movement, nature, social, technology, dance, language, art, drama) do I find most difficult when planning task-based learning and why?
4. Do the specific objectives of the tasks align with those of the national curriculum?
5. Have I used the working methods relevant to each curriculum area appropriately?
6. Can I design different tasks within a topic to connect multiple curriculum areas?
7. In planning task-based learning, have I been sufficiently original and creative in my choice of topic and design of the tasks?
 - 7.1 Are the tasks I carefully plan and select for the children as part of the didactic strategy of task-based learning sufficiently motivating and derived from the children's environment and life?
 - 7.2 Do I give precise, one-to-one instructions for the task that are sufficiently clear and descriptive for the children to understand?
 - 7.3 Are the tasks adapted to the children's developmental level?
 - 7.4 Are the tasks fun and playful and how do the children respond to the different tasks in their daily lives and experiences?
 - 7.5 Does the task have a specific outcome or end goal that is clear enough for the children to understand?
 - 7.6 Does the task allow the children to work together in small groups to accomplish it?
8. Do I sufficiently combine closed and open tasks?
9. Have I selected the appropriate materials (resources), environments, and tools to perform the tasks?
10. Did I give the children enough time to complete the tasks?
11. What was my role at each stage (observer, facilitator, leader, etc.)?
 - 11.1 Did I encourage the children to find their own solutions to the tasks set or did I direct them too stringently?

- 11.2 Did I ensure that all the children participated in the task-based learning process and had the opportunity to express their ideas, suggestions, and solutions?
12. Were the children sufficiently independent when working in small groups or did they need a lot of help?
13. What new skills did the children acquire?
14. Did I take the opportunity to teach vocabulary in an authentic learning situation?
15. Was my ongoing feedback to the children sufficiently clear, understandable, encouraging, praising?
16. Am I skilled at planning and selecting the appropriate type of report according to each task, recognising the meanings the children may want to communicate, and helping them express these? Do I incorporate peer assessments when appropriate?
17. Do I feel sufficiently competent to conduct the final phase of TBL and what would I change to make it easier for children to monitor and evaluate their own and other children's performance?

6. | Task-based learning and project-based learning – comparison

In the previous chapters, the methods that represent a child-centred educational approach have been presented in detail. Although both methods are based on the same principle – social and cognitive constructivism – and have many things in common, they differ in certain areas. They can also complement each other. TBL can lead to an educational project, while a teacher can also use the TBL method in a project.

Example of compatibility of TBL and PBL



Use of TBL in the project

An example is the Frogs project. In this project, the children investigated the life cycle of frogs, their living conditions, different frog species and developed questions related to this issue. Following the questions formulated by the children, the teachers used the TBL method and prepared a microscope activity where the children were to examine the eggs of different species of frogs. The task was to find out if and how the eggs of different frog species differ. The children recorded their findings in an observation log and tried to identify similarities and differences.

Project based on experience with TBL activity

The children carried out an educational activity prepared by the teacher as part of their literacy development. They searched for story ideas in the book based on the illustrations and then thought about what all the stories could be about (TBL). Based on this activity, the children expressed an interest in creating their own storybook, which led to the project "How a book is made".

For ease of reference, here is a summary table showing the different characteristics.

	Task-based learning	Project-based learning
Characteristics of the method	Closure of the task – the goal, the process and the expected outcome are predetermined. One-off activities	Openness – there is no predetermined course, the aim and outcome of the project is set at the beginning of the project, but it can change and develop over time. Long-term, gradually developing activities
Main education methods	Verbal – instructions	Verbal – discussion, brainstorming
The role of educator	Prepares the task Formulates the goal Chooses educational methods Prepares the environment Evaluates the objective	Facilitates thinking about the project topic Helps formulate a goal with the children Helps to implement children's ideas Prepares the environment Evaluates the goal with the children
The role of the children	Active exploration Work by following the teacher's instructions Are the implementers of the activity	Active exploration Work according to a jointly designed plan Are the principal investigators of the project
The role of the family and community	–	Can be involved in the solution of the problem (source of information, ideas, help)
Educational objectives	Predetermined, formulated by the teacher	Open, formulated by the children themselves

As the table shows, there are differences between the PBL and TBL methods. However, both allow the children to learn through their own activities, to think and construct knowledge based on their own discoveries. Neither method involves the transmission of ready-made knowledge. Each also places different demands on the teacher.

In TBL, the teacher has to think and plan the activity very well so that the child can independently develop knowledge and generalisations. With PBL on the other hand, the teacher must be very flexible and responsive to the children's cues; often it can be difficult for the teacher not to step in and guide the child towards solving a problem. Therefore, it is advisable for the teacher to try both methods and use the one that comes more naturally to them.

The reflection phase is also crucial in both methods – this is not just a matter of evaluating what and to what extent the children have learned in relation to the children's group and kinfergarten curriculum. The children themselves should be able to report what they have learned from working on the activity or project. It is this awareness of the process and outcome of learning that is important for their future education.

| Glossary of terms

adaptation	Adjusting to a new environment or social group.
alternative	Choice, other option
competency	A set of knowledge, skills, abilities, positions and values allowing one to carry out a certain activity correctly and efficiently.
conception	Concept, model, notion, basic viewpoint, leading idea, framework for thoughts.
constructivism	Based on the idea that knowledge is acquired by construction (connection of the new with the previous, creation of meaningful structures).
conversation	Human communication with a mutual exchange of information, which can take place either "face to face", or via electronic media.
coordination	Mutual harmonisation, placement at an equal level, optimum cooperation.
creativity	A set of abilities that allow us to create or utilise things in a unique way, the ability to form original or uncommon thoughts.
critical thinking	Recognition of the premises or assumptions that frame our thoughts and determine our actions, verification of the degree to which these premises are accurate and valid, contemplating our own thoughts and decisions (intellectual, organisational and personal) from various viewpoints.
didactic strategy	A comprehensive set of educational methods chosen by a teacher to achieve specific educational goals.
educational goals	Intended (or expected) changes in a child in the area of values and attitudes.
facilitator	Supporter, guide, helps control the process.
formative assessment	The evaluation of a child's individual development and progress in order to support their further education. Formative assessments provide useful information on a child's current state of knowledge and ability (for pre-school children this is usually expressed verbally or in a written form with photographs). This information can form a basis to guide subsequent teaching.
holistic education	An approach to child rearing and education that seeks to achieve the full development of the personality.

intelligence	A set of predispositions for thought, learning and behaviour.
interaction	The mutual effects that individuals, groups or large societies have on one another.
internalisation	The incorporation, adoption and acceptance of values, norms, thoughts.
intervention	Intervening, taking action with the goal of positively influencing a given situation.
motivation	An internal or external force acting to energise an organism, channelling our behaviour and actions to achieve a set goal.
motivational factor	A source of motivation.
motor skills	Separate sets of internal requirements for an organism to carry out certain movement activities.
PBL	Abbreviation for project-based learning – a type of educational activity during which children work individually on a complex task, solve a specific real-life problem; the output of a project is a specific product (of a material or intangible nature).
physiological development	Natural development corresponding to the healthy maturation and growth of a child.
pictogram	A graphical symbol representing a concept or message.
potential	The cognitive, affective and practical predispositions required to achieve something.
predispositions	Required abilities, proclivities.
project	A complex, real and meaningful task (problem, topic) that the child identifies with and takes responsibility for, whose result is a specific output (product).
reflection	Evaluation of what has just occurred, with the goal of summing up and interrelating the experience and information gained, in order to support further teaching and direction of activities.
relevance	Severity, significance, importance.
self-concept	The relation or stance that a human individual takes towards themselves; one's self-image.
self-reflection	Evaluation of one's own behaviour, contemplating oneself, one's own motivations, actions; a requirement for the development of responsibility.

self-regulation	The ability to control one's instincts and impulses in favour of more long-term goals.
social communication	The transfer of information between individuals; understanding and mediating meaning between individuals.
social interaction	The process of reciprocal influence exercised by individuals over one another during social encounters.
social learning	Ways of acquiring patterns of behaviour and appropriate conduct for a given social situation, learning social roles.
stimulation	Supporting, exciting, inspiring, external motivation.
TBL	Abbreviation for task-based learning, activity learning – teaching based on the completion of tasks.
zone of proximal development	Refers to the period directly preceding a new developmental stage, when the organism is highly sensitive to new stimuli; the space between the level of a child's current ability and what they are capable of achieving with the support of a more experienced person (such as a teacher or other child).

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Státní vzdělávací program pro předškolní vzdělávání

Štátny vzdelávací program pre predprimárne vzdelávanie v materských školách.

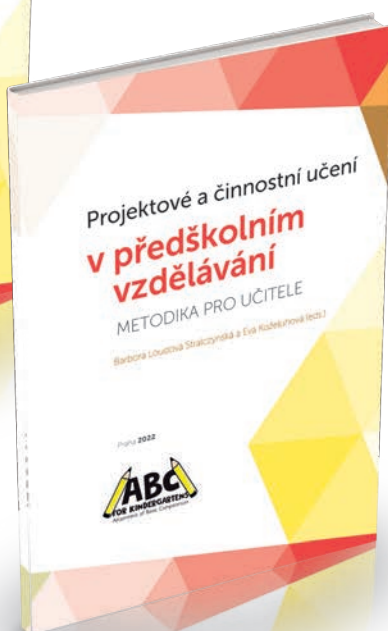
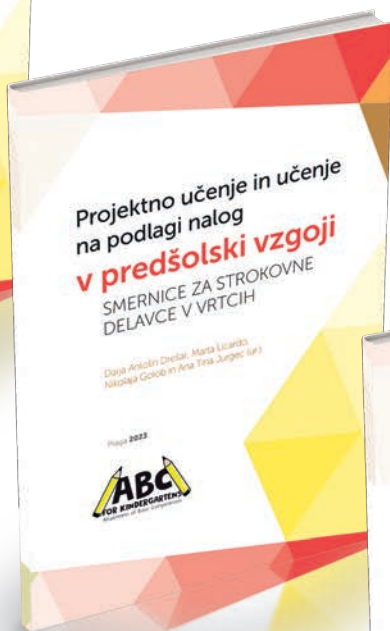
Bratislava: Dr. Josef Raabe Slovensko, 2016. ISBN 978-80-8140-244-9.

Photo

The photos were taken in partner project kindergartens and are used with the consent of the children's legal representatives.

Final work from the Time Machine project –
Kopřivnice Kindergarten, Czech Republic





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