EXAMPLE OF PROJECT LEARNING AS AN EXAMPLE OF INNOVATIVE TEACHING FOR THE 21ST CENTURY IN PRIMARY SCHOOL IN SLOVENIA

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Abstract. After the Corona virus pandemic, the school year finally started, and teachers and students could breathe freely and start to cooperate in a more relaxed way, both at the level of the class and at the level of the school. However, we have all noticed that changes in the world and changes in students lead us to a time that requires us to be innovative in the field of teaching materials and leading students in the classroom. But these do not always mean introducing the latest and greatest technology into the classroom. Instead, innovative teaching is the process of proactively introducing new learning strategies and methods into the classroom. The rollout aims to improve academic outcomes and address real-world issues to promote learning.

In the desire to create more innovative ways of delivering learning material, with the help of which students will develop the skills they need in the 21st century, I decided to embark on the path of project-based learning together with the students. In doing so, I considered the standards of knowledge given to us by the Ministry of Education and Sports, but at the same time I wanted to find out how many skills that students will need for successful work in the 21st century we will encourage and develop with this way of work.

In the first part of the article, I will present lessons for the 21st century and what goals I set for myself before starting project-based learning in the classroom. I will then proceed with a presentation of a brief history of project-based learning and the expected skills students should acquire through this method of teaching and management. Then I will describe the steps through which we embarked on this journey from the idea to the result of the work. In the evaluation of project-based learning, I wanted to find out whether project-based learning would encourage students to develop competencies in the skills that need to be developed for successful work in the 21st century. I was interested in which skills we promoted through project learning, where the students worked together without problems, and in which areas the biggest challenges arose.

Keywords: project-based learning, teaching for the 21st century, student skills, social skills

Teaching for the 21st century

First, we will ask ourselves, what is a lesson? A lesson is a planned, organized and expedient educational process that takes place within a coherent learning group and is directed by qualified people in an orderly environment. The concept of lessons consists of basic activities, teaching, learning and upbringing, which are linked to the student and the teacher (Strmčnik, 20221).

The world is changing, and it needs people who not only know things but also know how to use those things. One of today's major advantages is innovation or how to present things in a way that makes life easier. (Sawyer, 2019).

The world is changing and so are the students we teach. We teachers are trying to figure out how to update the teaching method or give the learning material to students. We wonder about the skills and abilities these students will need to work successfully in the 21st

century. Most experts agree that the children of the future need learning in study, life, and literacy skills. These three categories include the following skills: Collaborative problem solving, Creativity, Practical learning, Cultural competence, Effective written and oral communication, Ethical decision-making, Information and media literacy, Management, Critical thinking and Personal responsibility and initiative.

Unfortunately, schools have not changed as fast as the world has been changing and it is necessary to change the way we teach and deliver material with more emphasis on skills rather than on memorizing information. Since it is necessary to develop several different skills during classes and to expand the horizons of the students' mind and spirit in different ways, I started reading professional literature on the topic of modern teaching methods. After careful consideration, I decided to introduce project-based learning to the students.

Presentation of teaching according to the method of project learning

Project-based learning is an effective method based on the development of skill sets such as research, critical thinking, problem solving and collaboration. It is an active learning method where students gain mastery by applying their knowledge rather than rote learning. The teacher's role in this teaching method becomes that of a guide and students take ownership of their learning.

Project work or project learning work, also known in the pedagogical literature as the project method, represents an alternative to traditional organized and guided educational work, in which the main source of information for students is the teacher, who, as a rule, provides more or less "certain" knowledge; the task of students however, is to acquire this knowledge as best as possible (Novak, Žužej and Glogovec, 2009).

Project-based learning comes from the idea of the philosopher and pedagogue John Dewey (1859 – 1952). He believed that the student must transform from the object into its subject. This means that students must experience problems themselves and then solve them as projects as a group. The idea of the project method has spread around the world and received many versions at the implementation level, while its essence has remained the same (Markelj, 2005).

Project work belongs to integrated learning methods that equally include cognitive, experiential, and psychomotor aspects, where students freely express their views and develop creative skills. Lessons should be as problem-based and life-like as possible, students should acquire knowledge or solution as actively as possible, through research, creative learning and, in general, the development of the highest thinking abilities and the activation of all possibilities (Pukl, 1993).

Because of everything written above, I decided to start project-based learning according to the guidelines written by experts. When designing and preparing the project work, I relied on the example of the implementation of the project work (Novak et al. 2009):
Step 1: Formulate the initiative and the end goal.
Step 2: Implementation planning.
Step 3: Realize the goal.
Step 4: Performance evaluation.

Step 1: Formulate the initiative and the end goal.

The initiative for the design and implementation of project learning came from me, i.e., from the side of the project manager, and is based on the achievement of the goals and objectives of the learning program. After reviewing the learning goals, I decided to determine the main theme that would guide our project. Only this one came from the social science content under the topic of Prehistory and was called: Bridge builders on the Ljubljana Marshes.

Since schoolwork and teaching must be subordinated to the learning goals and assessments of each subject, I have defined the main assessments for each subject, which are set for teachers by the Ministry of Education and Sports.

The preparation for the implementation of the project learning started three weeks before the start of the project learning, namely with the instruction that the students should read the book by the author Slavko Pregel, entitled Boy Brin on his home bridge, for home reading. I instructed them that they had fourteen days to read the book. They will then be given a study sheet with which they will check their understanding of the text in different ways.

After fourteen days, when the students had read the homework, I distributed the worksheets and invited students to participate in a different way of learning. I presented the concept of project-based learning to the students and encouraged them to participate in the preparation and implementation of project-based learning under the title " Bridge builders on the Ljubljana Marshes ". The final goal with the realization of the works would be the preparation of an exhibition under the mentioned title in the school lobby. I challenged them to think about how the given topic could be explored within the subjects we learn at school in ways that would be pleasant, interesting, and active for them.

Step 2: Implementation planning.

We wrote a thought pattern on the board where we entered their ideas for each individual subject. We had written activities and ways of working through which we could achieve results. I then transformed their ideas, written in the form of a thought pattern, into a table. Since there were many activities that could be carried out, I decided to carry out our project learning in two weeks. I have added to the activity's guidelines and methods of work, which are determined by the Ministry of Education and Sports and are the basis for conducting lessons.

Table 2 and Table 3 present the weekly preparation, which includes subjects, exercises, work methods, selected activities for students and the time frame of the work. It was intended for my guidance behind the design of project-based learning.

Table 1
Weekly learning preparation - project learning   WEEK: _1. __

Subject	Hours	Goals	Methods of learning	Students' activities
Slovenian language	1. 2. 3.	• Develop the ability to receive, that is, the ability to experience, understand and evaluate literary texts. • They are capable to understand the character and behaviour of a literary person who experiences such adventures that they would like to experience themselves and empathize with a person who is like them in at least one concrete feature. • Observe the perspectives of the main and another secondary literary character and compare them. • They gradually perceive a character trait that seems	Group work	- Preparing the room for the "Round Table". - Defining the way of cooperation and the rules of communication. - Participation in the "Round Table" on the topic of home reading: students ask each other questions; consolidate the text they have read and open topics that interest them. - With questions on a higher cognitive level, I encourage students to think broadly and connect topics from prehistoric times with modern life. - Forming final thoughts and

		contrary to their general character traits (for example, a negative trait in an otherwise positive person). • Form a sensory imagination of the happening space and time, develop the ability to follow the happenings in several happening spaces/times at the same time. • Follow events in several event spaces and events in which event times overlap. • Restore or summarize essential events. • Determine what the literary text is about (theme), what the message of the literary text is. • Write comics on an agreed topic.	individual work group work	recording only these in a notebook. - They imagine their own story, which the main literary character could encounter. - They draw a comic on the topic of the continuation of the story: first they write and draw a draft, which they give to one of their classmates for review (only review and confirm the story). The teacher takes care of the proofreading.
	4. 5.			
Math	1. 2. 3. 4.	• Solving text tasks • Recognition of geometric figures and solids • Knowledge of angles in figures and bodies	Frontal work individual work	- Discussion about the importance and significance of the development of mathematics in prehistoric times. - Teaching basic mathematical functions by solving text problems on the topic of pilings. - Highlighting the challenges faced by the first builders: placing piles - right angles, geometric bodies, and figures.
Society	1. 2. 3. 2. 3.	• Pupils can determine the time of prehistory. • Describe the characteristics of the Stone Age and the Metal Age. • They learn about the life of people in the Stone Age. • Students describe the characteristics of the Stone Age and the Metal Age. They learn about some prehistoric finds in Slovenia and their usefulness.	group work	Specific topics: - Prehistory. - Stone Age and Metal Age. - Historical finds in Slovenia. Pupils individually process certain material through the textbook and websites. - They present the learned material together and write down the key information in the form of a thought pattern. - Let's check the note in the notebook together
Natural science and technology	1. 2. 3.	• Students list some simple devices for work and play.	individual work	- View historical finds in Slovene online. - We print and display them in class. - Each student chooses his/her own product to make and writes down the materials he will need to

				make just that one. - They start making their products. - Pupils make their own products: in doing so, they pay attention to the similarity of the product to reality and the aesthetics of the product. - They present their product to the class. - They will be used in the construction of the stilt settlement.
Household	1.	• Get acquainted with the sewing technique.	individual work frontal work	- With the help of natural materials, they learn the sewing technique and sew one product independently.
Art	1. 2.	• Gaining with pastel colours.	individual work	- They paint on the theme of bridge builders
P.E.	1.	• Following rules and agreements in games.	work in pairs	- They invent games that stake holders could play in their own time: write the course of the game, name the games, write the rules. Work in the computer classroom
	2.		group work	- Playing games, determining the meaning of only these and possible game corrections.
	3.			- Selection of the best staking games and preparation of the exhibition.

Table 2

Weekly learning preparation - project learning WEEK: _2. __

Subject	Hours	Goals	Methods of Work	Students' activities
Slovenian language	1. 2.	• They critically evaluate the literary texts and the illustrations given to them. • They edit their writing with the help of a computer.	individual work group work	- Pupils present their comic book story to the class. Comic book stories circulate around the class, students read them. - The strips are collected in a book. Each student gives their title for the book. They choose the title of their book by secret ballot.
	3.		individual work group work	- Each student designs a book cover on the computer. - Each student presents his/her cover to the class.

				- They choose the cover of the book by secret ballot.
	4. 5.		group work work in pairs individual work	- The work takes place in 3 groups: 1st group designs the book: cover, table of contents, pages, accompanying text, acknowledgments. 2nd group: designs flyers to present the book and as an invitation to other students to read their product. 3rd group designs the text for the presentation of the book on the school's website, draws the book and with the computer science teacher is responsible for publication. 4th group: prepare a place for the presentation of the book, agree on the preparation of the exhibition with the librarian.
Math	1. 2. 3. 4.	• Consolidation of mathematical laws in a practical demonstration.	work in pairs	Where the first builders faced today's mathematics. Let's include mathematics in the construction of a pile settlement.
Society	1. 2. 3.	• They get to know the life of pile drivers on the Ljubljana Marshes. • They are trained in systematic observation.	group work	Students are divided into groups under the heading: - History of bridge builders. - Placement and structure of bridge builders. - Daily life of bridge builders. - Specifications of bridge builders. Each group researches its topic, writes it down in the form of a poster, and then presents it to the other classmates. - They display each poster in the classroom for all students to see. - Other classmates listen to the presentations. - They make a note in a notebook, which we review and correct together.
Natural science and technology	1. 2. 3.	• List some simple devices for work and play.	work in pairs	Using natural and artificial materials, they create a pile settlement with its surroundings.
Household	1.	• Get acquainted with the sewing technique.	individual work frontal work	- With the help of natural materials, they learn the sewing technique and sew

				one product independently.
Art	1,2	• plastic design with natural and waste materials.	work in pairs	Using natural and artificial materials, they create a pile settlement with its surroundings.
P.E.	1.	• following rules and agreements in games.	work in pairs	- They imagine board games, make them, name them, write down the rules. - Work on the computer, practical work.
	2.		group work	- Playing games, determining the meaning of these and possible game corrections.
	3.		group work	- Selection of the best staking games and preparation of the exhibition

Step three: Realize the goal.

After the weekly distribution of learning materials and activities by hours, I prepared a table of students' activities by day. In this table, the subjects are no longer in the foreground, but the students' activities. The schedule of activities was available to the students during the whole week in class, and each student managed his own schedule.

Table 3

Day of the week	Pupils' activities WEEK 1

MON	- You will be divided into four groups. Each group will be given their own area of research.
	- In class, you will write out all the information you will need to make a poster from the textbook, notebook, and books.
	- In the computer classroom, you will obtain information from the Internet and choose visual material to prepare a poster.
	- Topic title: History of stakes.
	       Placement and structure of piles.
	       Daily life of pile drivers.
	       Curiosities from the era of pile drivers.
	- You will prepare a poster and text for the presentation. You will distribute the text for the presentation and prepare well for the presentation in front of the class.
	- You will present your findings in front of the class.
	- Pupils - listeners, you listen to the presentations and, at the end of each one, we make a note in a notebook.

	- In the computer classroom, you will view historical finds from prehistoric times on Slovenian soil via the Internet. - You will select historical finds in Slovenian. We will print them and display them in class. - Each student will choose his/her own product to make and write down the materials they will need to make just that one. - Bring the materials to school tomorrow.
TUE	- We will prepare the class for the "Round Table". - We will determine the method of cooperation and the rules of communication. The worksheet you got for understanding the text you read is useful for asking other students questions and thus forming a debate for exchanging opinions. - The moderator of the round table will be the teacher. - At the end, together we will form an opinion about the read text and write it down in a notebook.
	- With the materials that you brought to school and with the materials that are in the school,

	you will start making historical finds in Slovenian. Pay attention to the precision of production and the aesthetics of the product. - You will then present your product to your classmates, tell how you started the work, what materials you needed. - You will then leave the products in the school - you will need them when setting up the pile settlement.
WEN	- After yesterday's round table, you will draw your comic on the theme of continuing the story: first you write and draw an outline. You will only present this to your classmates for review. Review and confirm this story. - The teacher takes care of proofreading.
	- We will discuss the importance and significance of the development of mathematics in prehistoric times. - We will learn basic mathematical functions by solving text problems on the topic of piling.
THU	- We will highlight the challenges faced by the first builders: placing piles - right angles, geometric bodies, and figures. You will need a textbook, a workbook, and a geometry tool.
	- You will come up with games that the children of Bridge builders could have played in their own time: write the course of the game, name the games, write the rules - the work will take place in the computer classroom. - After you finish writing, we will go to the gym or to the playground to test your games. Together we will determine the practicality of the games and write down any corrections in the game instructions.
FRI	-We will go to the gym or to the outdoor playground. We will test all your games again. - Then we will go to the computer room, make corrections to the record of your games, print them and form them into a book.
	- In school, you will get natural materials and accessories for sewing. You will imagine one toy that you will sew.
	- With a pencil, you will draw a draft picture of the Bridge builders on a drawing sheet. In doing so, pay attention to the following criteria: the picture must show the Koliščar settlement or at least part of it, the surroundings of the settlement must be depicted in the picture, and at least one person at work must be shown.

Table 4

Day of the week	Pupils' activities WEEK 2
MON	- In mathematics, we will continue the material and challenges of geometry. - We will connect our knowledge with the knowledge of pile drivers and find out what they had to know to be able to make a pile. - We will solve text tasks on the topic of pile drivers and prehistory.
	- Today you will finish the painted stilt village with pastel colours. Make the right selection of colours and make sure that the entire surface is filled. - When we finish, you will prepare an exhibition in the hallway together as a class.
TUE	- Prepare your comics. You will present your comic book story to your classmates. Have the comic stories circulate around the class and have classmates read them. - Your comics will then be collected into a book, the title of which will be determined using a secret vote. - In the computer classroom, we will turn into a graphic designer: you will design the cover of our book. You will present the cover in class, and we will choose the cover of our book by secret ballot. - Then we will start the work, which will take place in 3 groups: The 1st group will design the book: cover, table of contents, pages, accompanying text, acknowledgments. The 2nd group will design flyers to present the book and as an invitation to other students to read their product.

	The 3rd group will design a text for the presentation of the book on the school's website, a picture of the book, and will correspond with the computer science teacher for publication. The 4th group will prepare a place for the presentation of the book, agree on the preparation of the exhibition with the librarian.
WEN	- Our work today will take place in groups. You will be divided into four groups. Each group will get its own address: History of stakes, Placement and structure of piles, Everyday life of pile drivers and Peculiarities of pile drivers. - First, the work will take place in the classroom, where you will select key information from the textbook and other literature. In the computer classroom, you will then continue to collect the data and image material you will need to create the poster. - In class, you then design a poster and a presentation of your topic. - Listen carefully during the presentation. At the end of the presentations, we will make a thought pattern with key words on each topic. - You will display the posters in class (this way the knowledge is available to you all the time).
	- Divide the class into 5 groups. Imagine board games that bridge builders could play. You can only use natural materials. Write down the rules, name the games and design them if necessary. Each group makes one board game. You will also have a part of the following day to complete the work.
THU **FRI**	- Place the tables in the classroom in such a way that creative work can take place in pairs. - You will be divided into pairs. You will make your own stilt settlement. Each pair will make one stake, two stake huts, one wicker basket and at least one person at work. You will make another tree or bush. - In doing so, you will pay attention to the precise manufacturing and aesthetics of the products. - During breaks, you can play social betting games and check the meaning and accuracy of the written instructions. You design boxes from natural material, where you put the board games. DISASSEMBLY PREPARATION: - You will prepare the exhibition. Make sure to write the title and note the author of the work. - Also display board games, soft toys made from natural materials, a comic book, and a book of children's piling games that you have created.

At the end of our project-based learning, the result of our work was an exhibition prepared in the hall of our school and it was shown to both students and parents, whom we invited to the conclusion. We presented the following products at the exhibition:
• The Bridge builders' settlements on the Ljubljana Marshes, where we presented the life of people in prehistoric times in Slovenia through a plastic composition made of natural materials.
• We exhibited a comic book that was published as a continuation of home reading.
• We exhibited a collection of sports games for the children of bridge builders.
• We have presented four board games that could be played by stake families.
• Exhibited four posters on the topic of Prehistory in Slovenia.

Step Four: Performance Evaluation.

In class, we did a joint analysis of the work and came to the following conclusions.

The way of learning was very interesting and different for them. Many times, they did not have the feeling that they were learning, but they were participating more, because they found the work interesting, active, and meaningful. They liked that the emphasis was on other skills, there was a lot of interaction, hands-on work, exchange of ideas and computer work. Among the less pleasant activities, they considered the fact that they often had to

cooperate with each other, which led to occasional disagreements. Some of them felt that they were never listened to or considered.

In the class, we also did an analysis of skills for the 21st century and together we reviewed the activities in which they improved. They were impressed with the spreadsheet and liked that they could evaluate their work from this point of view as well.

For me, the preparation for project-based learning began long before the realization itself. I devoted most of my time to the preparation for determining the scope of the actual implementation of the project work and how I will convey this idea to the students. I wanted to encourage them to think in such a way that I would encourage them to participate in the field of giving ideas in all forms and methods of work and in all directions so that together they would cover all the areas of the subjects I teach. Some of their ideas were spontaneous, but some needed correction and guidance on my part - given the age of the children, it is of course impossible to expect complete independence in the preparation and organization of the work. However, most of the ideas for the work, the way of working and the tools that would be needed for this came from them. To collect ideas, I chose the thought pattern method, which is presented in Table 1.

After the introductory presentation and collection of ideas for the work, in-depth work followed, where it was necessary to coordinate all their ideas with the views of the individual subjects and place them all together into a whole. An example of this work are Table 1 and Table 2. In this work, I gained insight into the overall course of the project. To create the final table of activities for the students, Table 3 and Table 4, I had to create intermediate tables that helped me see the sequence of individual events and extract all the necessary instructions so that the project could run as smoothly as possible, with as little help from me as possible, and that the students will be able to do the work themselves.

In my eyes, the two weeks of project learning took place very actively, both on the part of the students and indirectly also on my part. At the beginning of our project, I was interested in whether project-based learning encourages and develops students' skills necessary for the life in the 21st century. I was interested to find out which were the areas that we developed during project learning, which did not pose major challenges for us, and where the biggest challenges arose. I described the analysis of the work in Table 5.

Table 5

Skill	Presence	Analysis
Collaborative problem solving	✚	During the learning process, the students were faced with different opinions most of the time, where they had to practice giving opinions and different arguments. They faced agreements as well as disagreements. They learned to stand up for their opinion, as well as to accept compromises.
Creativity	✚	They developed their creativity in various fields written, media, graphic, design, spatial...
Practical learning	✚	Most of the time, learning was based on practical experience, which is the basis for practical learning.
Cultural competence	✚	The cultural diversity they face in the classroom on a daily basis is an area where students gain skills in every interaction.
Effective written and oral communication	✚	It would be difficult to talk about effectiveness, more about learning both skills. The students practiced both skills. In doing so, they worked both in the individual field, as well as in the group field and in pairs. They helped each other.
Ethical decision	✚	Is a certain decision right or wrong? How were decisions

making		made in the past, how today? The development of ethical questions and discussions took place in each presentation of topics at the level of asking questions of a higher level of difficulty.
Information and media literacy	✛	At the request of the students, they received a lot of information and media training in the computer classroom.
Leadership	✛	There was a lot of group work where students could develop leadership skills. Many times, I had to intervene and give the opportunity to lead even to those students who wanted it but did not yet have their voice in the group.
Critical thinking	✛	We developed it when we were looking for information on the Internet, when presenting various topics, and during all mutual conversations and interviews on the "work" topic.
Personal responsibility and initiative	✛	In every activity we carried out, the initiative to work was at the fore, and regardless of whether the work was individual or group, personal responsibility for a job well completed was developed.

Based on the written work analysis, we can confirm that project-based learning is one of those innovative work methods that develops students' skills necessary for life in the 21st century.

Conclusion

Modern times are fast, and changes are visible in all areas of life. Only these require the ability to adapt, and in the school system, the inclusion of innovative learning methods is essential. We must be aware that the modern world expects young people to develop the skills necessary to live in the modern world. The responsibility of countries, educational systems, institutes and institutions, and of course also teachers, educators, and all those who lead young people, is to be aware of these changes and to be able to adapt the delivery of the learning material and the design of lessons in a way that will result in creative knowledge in each subject.

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