RIGA SECONDARY SCHOOL 95

REPORT ON THE PEDAGOGICAL MEETING FOR THE “STEM FOR BRIGHTER FUTURE” PROJECT

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INTRODUCTION

The pedagogical meeting for the "STEM for Brighter Future" project was held on June 9th at Riga Secondary School 95. The meeting aimed to discuss the objectives and aims of the project, provide presentations on key aspects and the content of the trip, and engage participants in workshops to foster collaboration and pedagogical innovation.

Objectives and Aims

The primary objectives and aims of the pedagogical meeting for the "STEM for Brighter Future" project were as follows:

1. **Project Overview:** To provide an overview of the "STEM for Brighter Future " project, its goals, and the importance of STEM education in the modern educational landscape.
2. **Collaboration:** To foster collaboration and knowledge sharing among educators and stakeholders involved in the project.
3. **Pedagogical Strategies:** To introduce and discuss innovative pedagogical strategies and approaches that can be integrated into STEM education.
4. **Workshops:** To engage participants in interactive workshops where they could gain hands-on experience with STEM teaching methods.

1.1. INFORMATIVE PART OF THE MEETING. PRESENTATIONS.

The pedagogical meeting was divided into 2 main parts. The first part of the meeting was informative, which included various presentations and reports about the trip. During informative part speakers as Marina Nozdraceva and Jelena Milosa presented their reports about STEM project. Presentations outlined the "STEM for Brighter Future " project's background, goals, and expected outcomes. It emphasized the significance of STEM education in preparing students for the future. Presentations detailed the collaborative framework for the project, highlighting the roles of various stakeholders and the importance of effective teamwork.

Moreover, session focused on innovative pedagogical approaches and strategies tailored to STEM education. It covered inquiry-based learning, project-based learning, and the integration of technology in STEM teaching. This presentation discussed effective assessment and evaluation methods specific to STEM education. It emphasized the importance of formative assessment and real-world application of knowledge.

During the informative part of the meeting, the teachers were presented with a STEM project that was thought-out and produced based on the knowledge acquired during the training. This project was built based on the STEM principle of “Engineering Design Project”, which includes 7 stages of development and implementation. This project, called "Riga Mint", is dedicated to the 800th anniversary of Riga and is designed to enable students to make packaging from scrap materials for a commemorative coin. Worksheets and a step-by-step description of the project were created for the implementation of this project. This project includes a collaboration of such subjects as mathematics, history, design and technology, languages, engineering. After the practical part of the meeting, the teachers gathered again in the assembly hall to share their experience after completing the practical tasks, express their opinions and a number of suggestions for improving each of the tasks.

Subsequently, this project will be implemented in practice with primary and high school students for the 105th anniversary of Latvia, on November 18th.

1.2. PRACTICAL PART OF THE MEETING. WORKSHOPS.

The second part was practical. During it, workshops were organized, during which teachers learned in practice about the benefits, techniques, and principles of STEM education. After the presentations, the meeting proceeded to interactive workshops designed to provide participants with practical experience and a deeper understanding of STEM teaching methods.

Before moving on to practical classes, teachers were divided into 3 groups, in which they carried out tasks based on the principles, aspects and techniques of STEM education.

1. Creation of packaging for safe and high-quality transportation.

2. Creation of inexpensive and environmentally friendly transport from food.

3. Working with new technologies: creating a budget-friendly but safe online bridge for transportation and use.

Before the start of each practical task, teachers learned to set tasks and goals for themselves to achieve a certain result at the end of the task. For this purpose, the STEM scheme "Engineering Design Project" was used, which includes 7 levels: ask, imagine, plan, create, test, improve, analyze.

1.2.1. Creation of packaging for safe and high-quality transportation.

During this hands-on activity, teachers were challenged to come up with a safe, sustainable, strong, and practical packaging for one Pringles chip using the supplies provided (Picture 1).

At the beginning, teachers asked questions to set goals and objectives. What they need to achieve and what problem they need to solve. The aim of the challenge was to create a package design that will allow a Pringles chip to safely survive a trip through the mail system.

They then presented and discussed possible solutions to the problem, looking at the materials they were given to do so. Afterwards, they moved on to planning and decided which solution would be more successful to achieve the final goal. We assigned roles, tasks, and selected materials to complete the task. The next step was to create a packaging prototype and the teachers discussed during the process what possible difficulties they might encounter during the task.

Once the final product or packaging has been created, it is time to try it out in practice. The teachers were presented with a rating scale and a scenario according to which the test would be conducted. The situation was simulated that this packaging passes through post offices and during this the packaging may become deformed. Those whose packaging passed the test, and the chips did not break into many pieces received the maximum number of points.

Subsequently, teachers were asked to bring up for discussion proposals for improving their created product, what changes needed to be made to achieve a better result. Then feedback was collected from teachers: how useful they consider this task for students, what they can teach them with it, what skills, and abilities. What they succeeded in, what they didn't and what suggestions they can make to improve this task.

Picture 1. Provided supplies for challenge implementation.

CHIP STATUS	DESCRIPTION	PICTURE	POINTS
Perfectly Intact	Like it just left the factory		100 points
Slightly Damaged	Cracked, but still in one piece		50 points
Chipped Chip	Broken alcng the edges, but less than 5 pieces		20 points
Split Chip	The chip is broken into two fairly equal pieces		20 points
Significantly Damaged	Chipped and/cr cracked into less than 20 pieces		10 points
Pringle Dust	Too many pieces to count (more than 20)		5 point

Picture 2. Table for assessing the safety of chips in the created packaging.

1.2.2. Creation of inexpensive and environmentally friendly transport from food.

At the beginning, teachers asked questions to set goals and objectives. What they need to achieve and what problem they need to solve. The aim of the challenge was to create a car from edible products that can travel the longest distance and that does not exceed a certain weight that was set by the workshop leader.

They then presented and discussed possible solutions to the problem, looking at the materials they were given to do so. Afterwards, they moved on to planning and decided which solution would be more successful to achieve the final goal. We assigned roles, tasks, and selected materials to complete the task. The next step was to create a car from edible products that can travel the longest distance and that does not exceed a certain weight that was set by the workshop leader. Moreover, the teachers discussed during the process what possible difficulties they might encounter during the task.

Once the final product was created, it was time to try it out in practice. To test the machines, scales were set up to see if the completed machine passed the weight parameters. There was also a podium set up at a certain angle to roll the car down and see how far it could travel. To test the machines, scales were set up to see if the completed machine passed the weight parameters. There was also a podium set up at a certain angle to roll the car down and see how far it could travel. The presenter of this competition wrote down on the board the names of the team, the weight of the car and the distance it traveled. The team whose car traveled the farthest distance won.

Subsequently, teachers were asked to bring up for discussion proposals for improving their created product, what changes needed to be made to achieve a better result. Then feedback

was collected from teachers: how useful they consider this task for students, what they can teach them with it, what skills, and abilities. What they succeeded in, what they didn't and what suggestions they can make to improve this task. This task turned out to be very exciting, creative, and competitive for teachers and that some of them would conduct a similar competition in their lessons.

1.2.3. Creating a budget-friendly but safe online bridge for transportation and use.

At the beginning, teachers asked questions to set goals and objectives. What they need to achieve and what problem they need to solve. The aim of the challenge was to create a budget-friendly, safe, online bridge for transportation and use.

They then presented and discussed possible solutions to the problem, looking at the materials they were given to do so. Afterwards, they moved on to planning and decided which solution would be more successful to achieve the final goal. Teachers supposed to use a certain program and given materials to complete the task. The next step was to create a budget-friendly, safe, online bridge for transportation and use. Moreover, the teachers discussed during the process what possible difficulties they might encounter during the task.

Once the final product was created, it was time to try it out in practice. To test the bridge, teachers turned on the program that showed how much the bridge cost and what materials it was made of. During the test, the truck drove across the created bridge and the task was not for this bridge to break so that the truck could drive across it safely. If the bridge is not safe or stable, then some of its parts light up red and this means that this area needs to be transferred, replaced with something.

Subsequently, teachers were asked to bring up for discussion proposals for improving their created product, what changes needed to be made to achieve a better result. Then feedback was collected from teachers: how useful they consider this task for students, what they can teach them with it, what skills, and abilities. What they succeeded in, what they didn't and what suggestions they can make to improve this task.

CONCLUSION

The pedagogical meeting for the "STEM" project served as a dynamic platform for educators, administrators, and stakeholders to converge, share insights, and ignite a collective passion for advancing STEM education. As we conclude this report, it is evident that this meeting has illuminated a path towards fostering innovation, collaboration, and excellence in STEM teaching.

In this ever-evolving educational landscape, the "STEM" project is not just a program; it represents a vision of preparing our students to thrive in a world driven by science, technology, engineering, and mathematics. This gathering reinforced our collective commitment to equipping the future generations with the skills, knowledge, and critical thinking abilities needed to address complex challenges and drive progress.

The presentations elucidated the significance of STEM education as a catalyst for academic excellence and global competitiveness. Collaborative frameworks were established, opening doors for cross-disciplinary and cross-institutional cooperation. This unity will not only propel the "STEM" project forward but also set a benchmark for future educational initiatives.

The workshops served as laboratories of innovation, where educators were inspired to experiment with new pedagogical approaches, embracing inquiry-based learning, project-based learning, technology integration, and dynamic assessment strategies. These methods are not mere tools but engines of empowerment that enable students to explore their potential, discover their passions, and contribute meaningfully to society.

As we move forward, the lessons and experiences shared during this pedagogical meeting will continue to influence our strategies and decision-making processes. The collaborative spirit kindled here will be the foundation upon which the "STEM" project builds its successes. The impact of this meeting will ripple through classrooms and institutions, influencing teaching practices and inspiring students to embark on their journeys as lifelong learners, problem solvers, and innovators.

In conclusion, the pedagogical meeting for the "STEM" project has set a precedent for progressive education. It is a reminder that, as educators, we are the architects of the future, and we hold the responsibility to nurture the intellect and ingenuity of the next generation. The success of the "STEM" project will be a testament to our collective dedication to advancing STEM education, empowering students, and shaping a brighter tomorrow. As we depart from this meeting, let us carry the torch of inspiration and innovation to our classrooms, ensuring that STEM education continues to thrive and lead the way in 21st-century learning.

APPENDIX


PRINGLES


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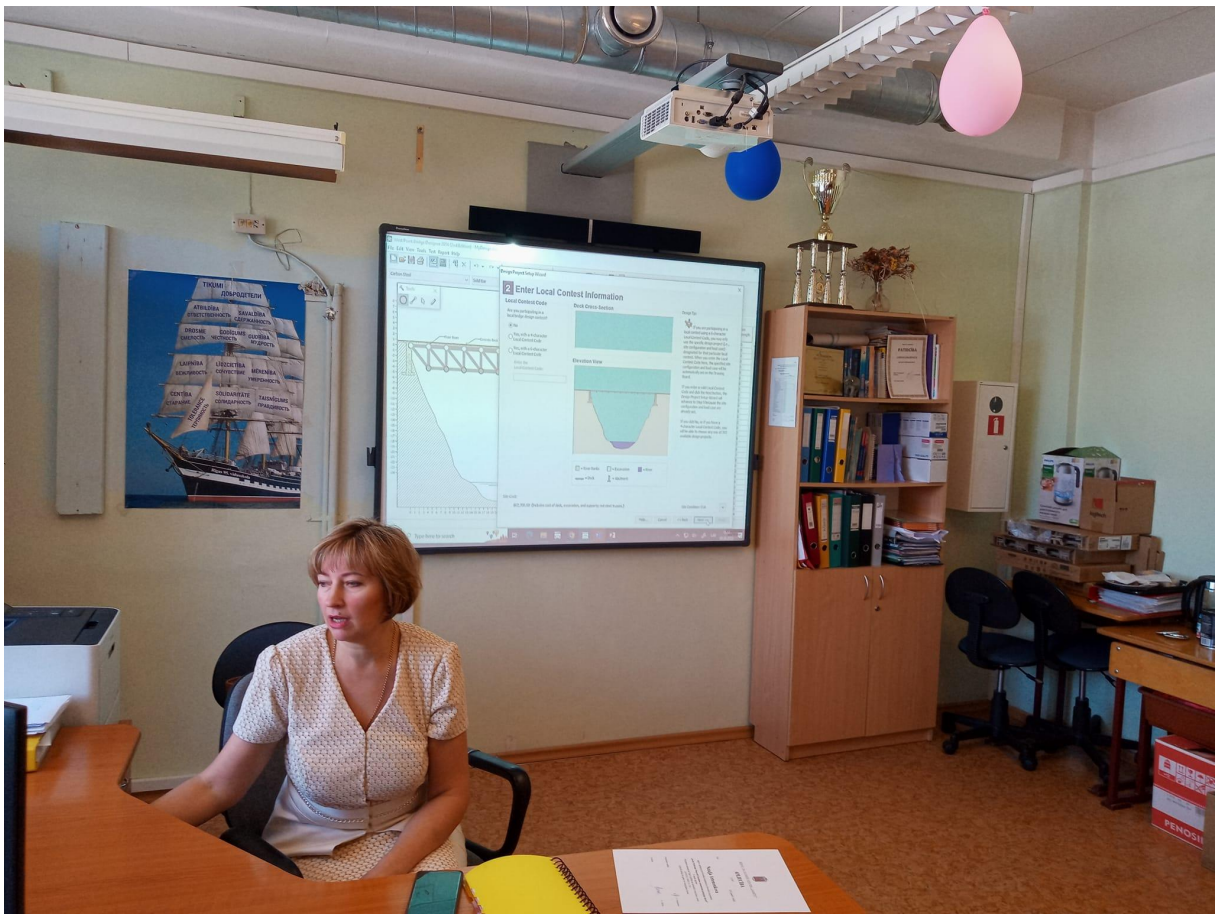
E=mc²
H₂O


Спасибо,
E=mc²
H₂O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