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FUTURE CLASSROOMS` LEADERSHIP SCENARIO

Java Programming

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TOPIC: Java programming

First-year students

APPROACH: lessons, assignments, independent research and finished product.

DURATION: 90 min

Summary: Short summary where you briefly mention the trend used for this learning scenario (project-based learning, flipped classroom, etc), the related subjects if it's a transdisciplinary approach, etc.

The goal of this lesson is learning through already existing projects, combining them, and using open resources. The training includes directions for solving the problem, allotted time to research and find similar examples that can help solve the problem, and showing the solution to the problem using compilation. Students develop their programming affinities by freely using the Internet, computers and the Eclipse program.
The class takes place in several stages where first they are given tasks as well as directions for their realization. Students are then given time for independent research and time for group work. In the last phase, the completion of the task and presentation of the groups follows. The entire lesson will be shown with a section of selected images for each of the stages

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Learning Objectives, Skills, and Competencies:

What are the main objectives? What skills will the learner develop and demonstrate within the scenario?

- Using the internet and the Eclipse desktop environment, students will research similar projects to use them in the assignment.
- With this, they will acquire the capacity to approach a given problem, how to think, and how to use the Internet.
- Students will acquire a routine for quickly solving a given problem through teamwork and sharing of already acquired knowledge as well as sharing of current research.
- Students' project work will include classroom activities.
- Acquisition of new knowledge in the field of programming

Learners' role:

What sort of activities will the learner be involved in?

- Directions for solving the task
- Using open sources and research
- Work in a group to find a suitable solution and compile it to prove it
- Planning and designing posters and presentations
- Presentation to the groups about the way the problem was solved
- Making photos

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Tools and Resources

What resources, particularly technologies, will be required?

15 computers and an interactive smart board.

Learning space

Where will the learning take place e.g. school classroom, local library, museum, outdoors, in an online space?

Classroom with the necessary IT equipment.

Future Classroom Scenario Narrative

Describe in max 10 sentences the main ideas of the scenario

At the beginning of the lesson, students will be divided into three groups of 5 in each group. Each student will receive a computer on which to do individual research. Each of them will have to complete a certain part of the task, that is, find suitable examples that they will connect and use to solve the given problem. After doing research independently, they will integrate their parts through discussion and come to the final solution of the task. By doing this, the basic knowledge they have in the area of programming will be expanded and they will see what a real problem looks like that needs to be mastered.

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Learning Activities

Warm-up activity	Students are instructed on how to approach the problem, reminded through examples and briefly questioned.
Collaborative work	The students will first work independently and then through the teams they will come to the solution of the problem. At the end, each team should present the way they came to the solution.
Investigation work	They should find similar examples of tasks to use to complete the task. The information found in a suitable combination and their merging will be the key to solving the task correctly.
Producing work	The leader of each group will present their work in front of the class using the interactive whiteboard.

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Discussion	The teacher gives instructions for solving the task and monitors their progress.
Presentations	Students present the solutions and discuss how the solution was obtained, as well as a practical implementation of the task in the compiler.
Assessment and feedback	Each student will have his part during the individual work, where in the teamwork he will have to unite to make the task functional. In addition to the accuracy of the task, how it was solved, i.e. its simplicity, will also be evaluated.

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