



Thymio – The Open-Source Educational Robot

by **MOBSYA**

What is Thymio?

Thymio is a robot developed by researchers from EPFL in collaboration with ECAL, designed to introduce students to the world of robotics and computer science. Even at a beginner level, Thymio offers six pre-programmed plug-and-play modes that make it easy to use right away. For more advanced learners, Thymio can be programmed using visual tools like Scratch or more complex programming languages like Python, ensuring a progressive learning experience tailored to different skill levels.

Study Plan

With Thymio, we work on the following competencies from the curricula:

Understand the basic concepts of computer science

Algorithms and programming

Creation and comparison of programs with sequences, conditional tests, and loops using a visual programming language to solve simple problems.

Information and data

Discover the different types of files used to represent information.

Informatics and society

Reflect on the place of computer science in society files used to represent information.

Use digital tools to carry out projects

Use of various digital devices (computer, tablet, robot, etc.) tailored to the task at hand, along with the discovery and mastery of appropriate software.

STEAM

Engaging STEAM (Science, Technology, Engineering, Arts and Mathematics) journeys.

«Since Thymio already has six different pre-programmed modes, students can playfully discover what each color does. This also motivates them to start programming on their own.» (Teacher, 6th grade)

Who Tested Thymio and How?

In the 2023/24 school year, Thymio was mainly tested in the German-speaking part of Switzerland by 31 teachers and their students as part of the Swiss National EdTech Testbed Program. The test involved 8 classes of 4–8-year-olds, 22 of 8–12-year-olds, and 1 of 12–15-year-olds.

Each testing phase began with a brief online introduction for teachers, presenting Thymio. Following this, the EdTech Collider team visited the classrooms, bringing the robots and introducing Thymio to the students through a hands-on double lesson. The goal of this intervention was to help the students become familiar with the tool in a practical and engaging way.

Teachers had the opportunity to explore Thymio for free. At the end of the test phase, they evaluated various aspects of the robot, including its design, user-friendliness, and impact on the learning process.

What is the Swiss National EdTech Testbed Program?

The Testbed Program is an initiative by the Swiss EdTech Collider that facilitates the short-term, guided testing and evaluation of educational technologies. Teachers can register for free to test various EdTech tools.

For more information: www.edtech-collider.ch/testbed

Teacher Feedback

The following results and information are based on feedback from 31 teachers.

84% of the teachers surveyed believe that Thymio is an effective tool in helping students understand and learn the fundamental principles of robotics, providing them with a hands-on, engaging way to explore the concepts involved.

61% agree that Thymio enables students to work at their own level. Additionally, they feel that students can use Thymio independently, regardless of their prior knowledge or skills.

The teachers shared both the strengths of the tool and areas for improvement. The most frequently mentioned points include:

Improvement Potential

- More tutorials and educational resources should be available.
- Connecting to Thymio can often be complex, with unexpected disconnections.
- A feature to pair Thymio with tablets is highly desired*.

Strengths of the Digital Tool

- Easy access to programming: The device is suitable for all skill levels.
- Combines transversal skills and programming abilities.
- Very intuitive and user-friendly.

Conclusion

Thymio allows students to learn programming at various skill levels. Initially, teachers need to familiarize themselves with the pre-programmed modes to explore the different functions and take their first steps in programming. A 30 to 45-minute online training session is helpful, but in-class support offers not only the advantage of providing the equipment but also helps teachers gain confidence while discovering the robot and connecting it with various devices.

Thymio can be used in the classroom as part of projects or disciplinary lessons. The Thymio software does not collect or store personal data, ensuring that no conclusions can be drawn about schools or students.

*Since our study, the Mobsya organization has released Thymio 2+, which now offers direct connectivity with tablets and improved stability between robots. These enhancements should make the use of Thymio in classrooms even more accessible and practical.

Cost Overview & Contact for Thymio

Software & Simulator (Open Source): Free

Price for Thymio Wireless: 178 CHF

Price for a Set of 6 Thymio Wireless: 1276 CHF

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The Good Practice Paper was published in January 2025. All data is based on the Thymio version used during the 2023/24 school year.