



New educational concepts with fischertechnik

At the Learning and Research Center in Odenwald (LeFoO) / Germany

Achieving a balance between classic mechanical concepts and modern technologies



THE CHALLENGE

LeFoO is tasked with developing educational concepts for vocational schools in Hessen (Germany) that also appeal to younger target groups. In addition to middle school students, elementary and secondary school students benefit from offerings such as a basic course in robotics and projects in the field of mechatronics. The extracurricular program is expanded with holiday programs and exciting workshops.

An additional challenge is the mandatory full-day schooling from 2026, which requires new content and capacities. The aim is to respond to the demands of digitalization with innovative methods. At the same time, a balance must be struck between classic mechanical concepts and modern technologies such as AI and 3D printing in order to open up a wide range of educational pathways.



“ It all started with fischertechnik! At first, we worked without programming, but we were so enthusiastic that we soon started using interfaces and programmable models. To this day, fischertechnik remains the ideal foundation for us to inspire schoolchildren to take an interest in STEM topics.

Thorsten Wohlgemuth,
Project Manager at LeFoO



THE SOLUTION

To meet these challenges, LeFoO relies on a combination of practical relevance and innovation. Projects with partners such as Pirelli and TU Darmstadt create a foundation that bridges the gap between classic mechanics and modern technologies. In particular, the construction of interactive courses with robots, 3D printers, and sensor technology offers students and trainees.

Mechanical engineering kits are used in regular lessons in the 8th grade, while outside school, vacation programs such as „light painting“ and robot-assisted mechatronics workshops appeal to a wider audience. Elementary school students benefit from an introductory course in robotics, while experimental archaeology fascinates learners from middle school onwards. Here, traditional craftsmanship is combined with high-tech: modeling clay is 3D-printed and supplemented with animations.

The center also strengthens the all-day school concept by integrating innovative content such as AI and digitization into everyday school life. With around 1,000 participants annually, a strong practical focus is created that prepares students of all ages for the future.



THE RESULT

Every year, around 1,000 schoolchildren, students, and trainees take part in the programs offered by the Learning and Research Center. With courses such as robotics for primary school students and projects such as The construction of smart obstacle courses brings education to life. Collaborations with companies and universities provide practical insights into fields such as mechatronics and experimental archaeology. The use of technologies such as fischertechnik, 3D printing, and robotics makes it possible to combine modern technology, traditional craftsmanship, and classic mechanics in a meaningful way. In this way, the center sets standards for innovative educational concepts in Hessen (Germany).

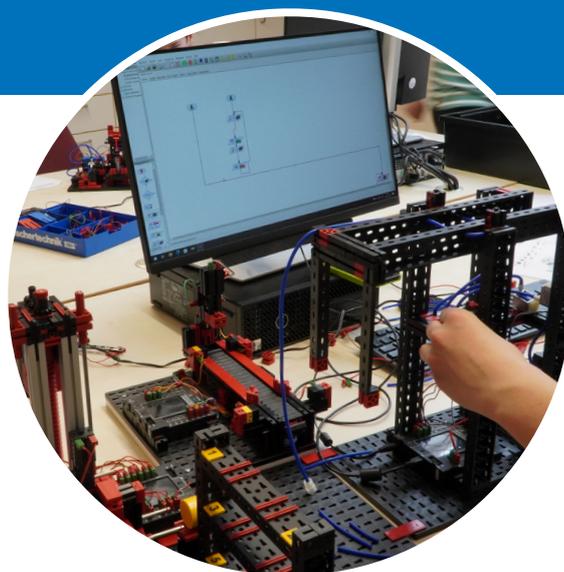
HANDS-ON LEARNING CONCEPTS FOR REGULAR CLASSROOM INSTRUCTION

fischertechnik offers innovative digital and analog learning concepts for interdisciplinary use in pre-schools, primary and secondary schools, as well as in universities and vocational education. Based on hands-on learning, STEM (Science, Technology, Engineering, Mathematics) subjects are made easily accessible and tangible, fostering important future skills such as problem-solving abilities, creative thinking, and emotional and social competencies.

All learning concepts include thematic construction sets, technical components like motors, sensors, and controllers, as well as freely accessible educational support and training materials such as building and programming instructions, lesson plans with tasks and solutions, curriculum references, and professional development opportunities.

„With fischertechnik, I discovered how exciting technical topics can be. It's a lot of fun to build your own models and make them work.“

Luca B., 14 years



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