Erasmus+ Job Shadowing Final Report

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Subject: Informatics

Host Institution: Isolde-Kurz-Gymnasium

The job shadowing mobility took place from May 18, 2026, to May 22, 2026. The hosting institution was the Isolde-Kurz-Gymnasium, an innovative and well-equipped secondary school that provided an ideal setting for observing modern educational strategies.

As an Informatics teacher, I chose this specific job shadowing experience to observe how a highly digitalized European school integrates technology into everyday lessons, manages technical laboratories, and delivers STEM education.

A teacher can benefit immensely from such a project by stepping out of their routine, gaining exposure to alternative instructional methodologies, and witnessing firsthand how hardware and software can transform abstract engineering and coding concepts into tangible experiences. It provides fresh inspiration to revitalize classroom dynamics, balance cognitive loads, and rethink spatial layout and student autonomy back home.

Over the five-day period, I observed a diverse range of subjects across different student age brackets, spanning from 11 to 18 years old. The activities covered several key academic disciplines:

- Computer science observed lessons on C++ syntax, arrays, and sorting algorithms, theoretical computer and mobile security, and practical network design solutions using specialized architecture simulation software.
- Natural science and technology: witnessed interactive lectures on LED components, seed-growth data literacy and graphing, building homemade compasses, and a year-long project featuring CAD modeling in FreeCAD and 3D printing.
- Mathematics: shadowed sessions alternating between theoretical rules and rapid problem-solving, including proofing the triangle inequality theorem.
- Information and media literacy: observed a highly collaborative, task-based workshop evaluating the mechanisms of "fake news".
- Humanities: followed a well-segmented Latin language lesson introducing complex grammar structures (subjunctive moods) alongside cultural history.

Several exceptional aspects stood out during this mobility, highlighting the success of their blended learning environment:

- Smart hardware integration: the fluid use of desktop document cameras to project physical worksheets onto digital boards in real-time, coupled with vertical sliding board systems, seamlessly bridged physical and digital resources.

- Experiential "learning by doing": the exceptional execution of project-based learning (PBL) in STEM classes, where students autonomously assembled 4-wheeled vehicles that they had personally designed on FreeCAD and fabricated via 3D printers.
- Dynamic attention resets: the intentional incorporation of "active breaks" - such as having students stand up for a debate after 30 minutes or taking a brief outdoor running break midway through a long theoretical lecture - to restore focus and boost oxygen flow.
- Gamification and low-stress formative assessment: utilizing strategy games to evaluate real-world IT problem-solving, or implementing random-selection methods for collaborative test corrections, transformed stressful evaluations into highly engaging, shared moments of growth.

While the overall experience was overwhelmingly positive, a few operational and behavioral challenges were observed:

- Fluctuating attention layouts: in several traditional layouts, there was a noticeable engagement gap between the highly active front rows and the students in the back rows, who occasionally became distracted by jokes or side chatter.
- Resource underutilization: in one instance, despite being held inside a fully equipped computer laboratory, the students' individual machines were only utilized to mirror the central board, missing a prime chance for hands-on, interactive coding practice.
- Lab clutter logistics: students frequently brought their personal backpacks directly into the laboratory workspaces instead of utilizing the dedicated hallway lockers. This created localized physical clutter and minor safety hazards around the technical benches.

The elements that surprised me the most were centered on inventive classroom physics and pedagogical analogies:

- Tactile coding analogies: watching an instructor use physical, plastic containers as concrete props to simulate how an array structure is traversed and how elements physically shift during a sorting algorithm before writing a single line of C++ code.
- Retractable infrastructure: the presence of a clever system of ceiling-mounted, retractable charging cables that allowed students to safely power their personal notebooks anywhere in the classroom without creating trip hazards across the floor.
- The spontaneous outdoor run: seeing a teacher pause a theoretical data safety presentation halfway through to send the entire class outside for a quick lap around the school building to combat cognitive fatigue.

This experience reinforced a key pedagogical principle: teaching is most effective when the instructor acts as an active facilitator rather than a traditional lecturer. By continuously moving through the learning space, offering timely guidance, and allowing students to debug and solve errors on their own, we encourage genuine student autonomy.

Furthermore, true blended learning does not mean abandoning traditional tools. Technology acts as a powerful catalyst when integrated cleanly into the project workflow - such as utilizing an IDE for instant compiler feedback or using a digital board for collaborative

grading - while maintaining tangible worksheets or brainstorming dialogues for raw cognitive processing.

The methodologies witnessed can absolutely fit into the Italian school system, particularly with the recent investments in digital laboratories, STEM orientations, and innovative learning spaces.

While some architectural limitations exist - such as fixed desks that prevent seamless group rotations or a lack of retractable ceiling power grids - the *pedagogical principles* require no structural overhaul. Italian teachers can readily adopt:

- Kinesthetic and physical props to demystify complex, abstract computer programming functions (like variables, memory allocation, or loops) before diving into syntax.
- The "active break" concept, allowing short, structured kinesthetic intervals during two-hour blocks to reset attention span.
- Formative peer-reviews and collaborative test corrections using random picker software to alleviate evaluation anxiety.

I would highly recommend this specific job shadowing experience to any colleague. It serves as an excellent mirror for self-reflection. It demonstrates how to establish strong, relaxed classroom management through humor and rapport rather than rigid enforcement, and proves that allowing students to "fail forward" through iterative, hands-on trials drastically boosts their intrinsic motivation and ownership over the subject matter.

To effectively share the wealth of insights gained during this mobility, I intend to deploy a multi-tiered dissemination strategy:

1. Departmental briefing: hosting a focused session with fellow computer science teachers to showcase the specialized network simulation software, CAD-to-3D-printing workflows, and IDE feedback cycles used by the host school.
2. Staff meeting presentation: presenting a concise summary focusing on transferable soft skills, classroom management techniques, and the deployment of "active breaks" to optimize attention across all subjects.
3. Digital resource kit: compiling an open-access digital folder containing examples of the hybrid document-camera setups, sample gamified strategies, and lesson frameworks to give colleagues immediate, practical tools they can test in their classrooms.

This job shadowing experience will heavily influence my approach to teaching Informatics. Moving forward, I will explicitly restructure my laboratory sessions away from traditional front-led lectures toward challenge-based, scaffolded learning.

I plan to introduce physical simulation techniques for data structures before students program them on computers, incorporate digital-board-supported collaborative grading sessions to turn assessments into learning opportunities, and carefully manage the classroom's cognitive load by scheduling active, kinesthetic intervals during complex coding modules.