

AVICO



**CODING TRAINING WITH
AVIATION TECHNOLOGIES**

**Transnational Report –
Executive Summary**



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Introduction

The AVICO project is a transnational initiative aimed at assessing and improving UAV (Unmanned Aerial Vehicle) technology and coding education in vocational training. With the rapid expansion of UAV applications across industries such as logistics, agriculture, surveillance, and engineering, equipping students with relevant skills has become a priority. However, vocational education systems must adapt quickly to technological advancements, industry needs, and accessibility challenges.

The AVICO project brings together findings from six participating countries to provide a comprehensive overview of current educational practices, student experiences, and expert insights. By analyzing data from expert interviews and student surveys conducted across these countries, the project sought to ensure robust and representative results. This report identifies both the barriers and opportunities in UAV and coding education, offering a roadmap for future improvements.

To demonstrate project reach and data reliability, the project set ambitious targets for data collection: at least 20 expert interviews and 70 student surveys per country. While these targets were not fully met in every country due to varying institutional capacities and logistical constraints, the overall participation was strong. Across the consortium, an average of 68 student surveys and 18 expert interviews were completed per country, closely approaching the intended KPIs. This high level of engagement ensures that the insights and recommendations in this report are well-founded and reflective of the diverse experiences within the project.

Key Findings from Research

Curriculum and Educational Gaps

- UAV and coding technologies are evolving at a rapid pace, making it challenging for curricula to stay current.
- Many educational institutions lack the necessary expertise to integrate the latest UAV developments effectively.
- There is a growing need for interdisciplinary approaches combining UAV operation, coding, engineering, and AI.

Hands-On Learning and Simulation-Based Training

- Both students and experts highlighted the necessity of practical learning experiences to develop relevant technical skills.
- Limited access to physical UAVs is a barrier for some institutions, making simulation-based learning (VR/AR) a critical solution.
- Hands-on training with real-world applications improves engagement and knowledge retention.



Industry Collaboration and Workforce Readiness

- Stronger ties between vocational institutions and UAV-related industries are needed to bridge the gap between education and employment.
- Employers emphasize the importance of work placements, internships, and industry-driven curriculum updates.
- There is a significant demand for problem-solving skills alongside technical knowledge in UAV and coding education.

Student Demographics and Learning Preferences

- The majority of students in UAV vocational programs are around 18 years old (depending on the country, the most populous group was either 16/17 or >18), with a preference for text-based programming and video-based instruction.
- Simulation tools are widely appreciated as an effective alternative to physical UAV training.
- Students recognize the value of UAV education but often face challenges in access to learning materials and proper infrastructure.

Diversity and Inclusion Challenges

- Women and minority groups remain underrepresented in UAV technology and coding education.
- Limited targeted outreach programs mean that many potential students are unaware of opportunities in the field.
- More inclusive teaching strategies are needed to accommodate students from diverse backgrounds and varying levels of prior knowledge.

Recommendations for Improvement

Curriculum and Training Program Enhancements

- Regular updates to curricula are necessary to incorporate new technological advancements.
- A multidisciplinary approach should be adopted, integrating UAV operation, coding, engineering, and data science.
- Problem-solving and critical thinking should be emphasized alongside technical skills.

Enhancing Hands-On Learning Opportunities

- Increased investment in UAV training resources, including access to physical UAVs for students.
- Greater use of simulation tools (VR and AR) to supplement practical learning, especially in resource-limited institutions.



- More project-based learning opportunities to mirror real-world UAV applications.

Strengthening Industry Collaboration

- Establishing stronger partnerships between educational institutions and UAV-related companies.
- Encouraging employer input in curriculum development to ensure alignment with industry needs.
- Creating more internship and work placement opportunities for students to gain real-world experience.

Improving Resource Accessibility and Infrastructure

- Expansion of online learning platforms and interactive digital tools to improve accessibility.
- Investment in better infrastructure, including computers, coding software, and reliable internet connectivity.
- Ensuring equitable access to learning materials for students from diverse socioeconomic backgrounds.

Promoting Diversity and Inclusion

- Developing targeted outreach programs to encourage women and underrepresented groups to pursue UAV and coding careers.
- Providing scholarships and mentorship opportunities to support diverse students.
- Implementing inclusive teaching practices that accommodate various learning styles and prior experience levels.

Encouraging Lifelong Learning

- Supporting continuous professional development for educators through workshops and online training.
- Encouraging students to engage in lifelong learning through certification programs and online courses.
- Promoting a culture of innovation and adaptability in UAV education to keep pace with industry developments.

Conclusion and Next Steps

The AVICO project has highlighted both the immense potential and the challenges facing UAV technology and coding education in vocational training. While there is strong interest and recognition of the importance of UAV education, significant gaps exist in curriculum design, hands-on training opportunities, industry collaboration, and diversity initiatives.

Moving forward, policymakers, educators, and industry stakeholders must work together to create a more dynamic and accessible learning environment. The recommendations outlined



in this report provide a clear path toward developing a future-ready UAV education system that equips students with the skills needed to thrive in an evolving technological landscape.

Continued investment in curriculum updates, practical training, and collaboration with industry partners will be crucial in ensuring that vocational UAV programs remain relevant and effective. By fostering inclusivity and supporting lifelong learning, the UAV education sector can expand opportunities for a broader range of students, helping to build a more diverse and skilled workforce in the UAV and coding industries.