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Case Study: Efficient Scaling and Innovative Education at Zuyd University of Applied Sciences with the IKA HABITAT Bioreactor

Organization Overview

The Academy Applied Science of Zuyd University of Applied Sciences strongly focuses on combining education and practical research. Encouraging innovation and hands-on learning is central to their mission. In collaboration with their partner CHILL, which offers state-of-the-art facilities and experienced professionals, Zuyd provides students with the opportunity to develop their skills through technology and practical experience in modern laboratory environments. By working closely with companies and institutions, they tackle real-world problems, ensuring that education remains closely connected to industry needs.

Challenges

Before the implementation of the IKA HABITAT Research bioreactor, Zuyd faced several challenges:

› There was a need for a scalable solution that students could operate easily and intuitively.
› Education needed to be expanded with modern technologies, including Virtual Reality (VR), to better prepare students for future innovations and scale the capacity of their education.
› Existing systems present at Zuyd/CHILL were limited in functionality and scalability, making them less effective for educational purposes.

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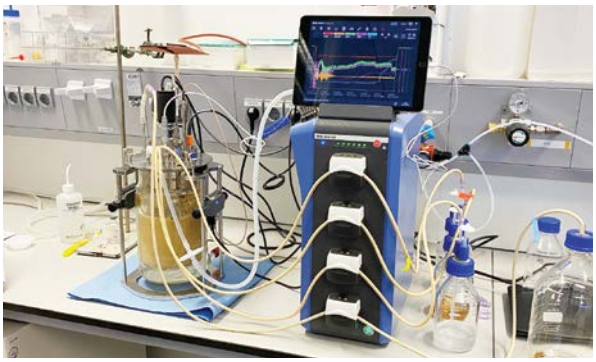
The Solution Provided by IKA

/// Configuration of choice

The organization chose the IKA HABITAT with 2 liter double wall vessel for its flexibility and its user-friendly operation, especially when combined with VR functionalities of the realworld one training tool. This package offered the perfect mix of practical applicability and technological innovation.



Implementation

The bioreactor was successfully integrated into the educational environment. Thanks to the intuitive software and compatibility with VR technology from realworld one, students could get started right away. Stan, a student conducting research and an internship, used the bioreactor intensively and highlighted its practical ease of use, particularly after a short learning curve. The system was delivered through Analis, IKA's official distribution partner in the Benelux, who coordinated local support and logistics.

Stan: *"After figuring it out initially, it's easy to use."*

Rinaldo: *"After doing it together once, Stan now handles it alone."*

Problem Solving

The IKA HABITAT Research bioreactor solved many of the previous limitations:

› The bioreactor is easily expandable and ideal for scaling purposes.
› The total system performs excellently and delivers above-average results, while the intuitive software ensures a smooth user experience.
› The combination with VR makes the system perfect for educational applications, particularly due to its scalability and the ability to explain and practice complex research easily.

realworld one

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Personnel overview

Stan Coolen
Applied Science Molecular Health research student and intern.

Stan is an ambitious student conducting practical research and using the bioreactor extensively in his internship projects. He emphasizes the importance of user-friendly and scalable technology in education.

Rinaldo Van Meel
Researcher at Chemelot Innovation and Learning Labs (CHILL).

Rinaldo is a motivated and creative researcher with extensive experience in biomedical research. He specializes in biochemical, molecular, and microbiological techniques and is an enthusiastic team player who guides students in research projects ,with a strong focus on applying scientific knowledge to real-world challenges.

Olaf Brouwers
Teacher/Researcher/Coach at Zuyd University of Applied Sciences, Academy Applied Science.

Olaf is an experienced teacher and researcher focused on biotechnology and biofabrication. He coordinates internships and guides students in groundbreaking research projects. Olaf's passion lies in integrating education and research to inspire and develop new talent, driving innovation in the Brightlands region.

Olaf Brouwers expressed his satisfaction with this Case Study:

"The realworld one VR application training tool opens up the possibility for students to learn the basics of a bioreactor set-up in save, fast, and engaging manner"

Case Study Summary

Zuyd University and CHILL modernized science education by adopting the IKA HABITAT bioreactor with VR training. This implementation was made possible through the close cooperation between Zuyd University, IKA, and Analis, IKA's Benelux distributor. This scalable, user-friendly solution improved student engagement and lab efficiency, making complex bioreactor training more accessible and impactful.

This initiative highlights how advanced lab tools and immersive technology can transform science education and better prepare students for real-world challenges.

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