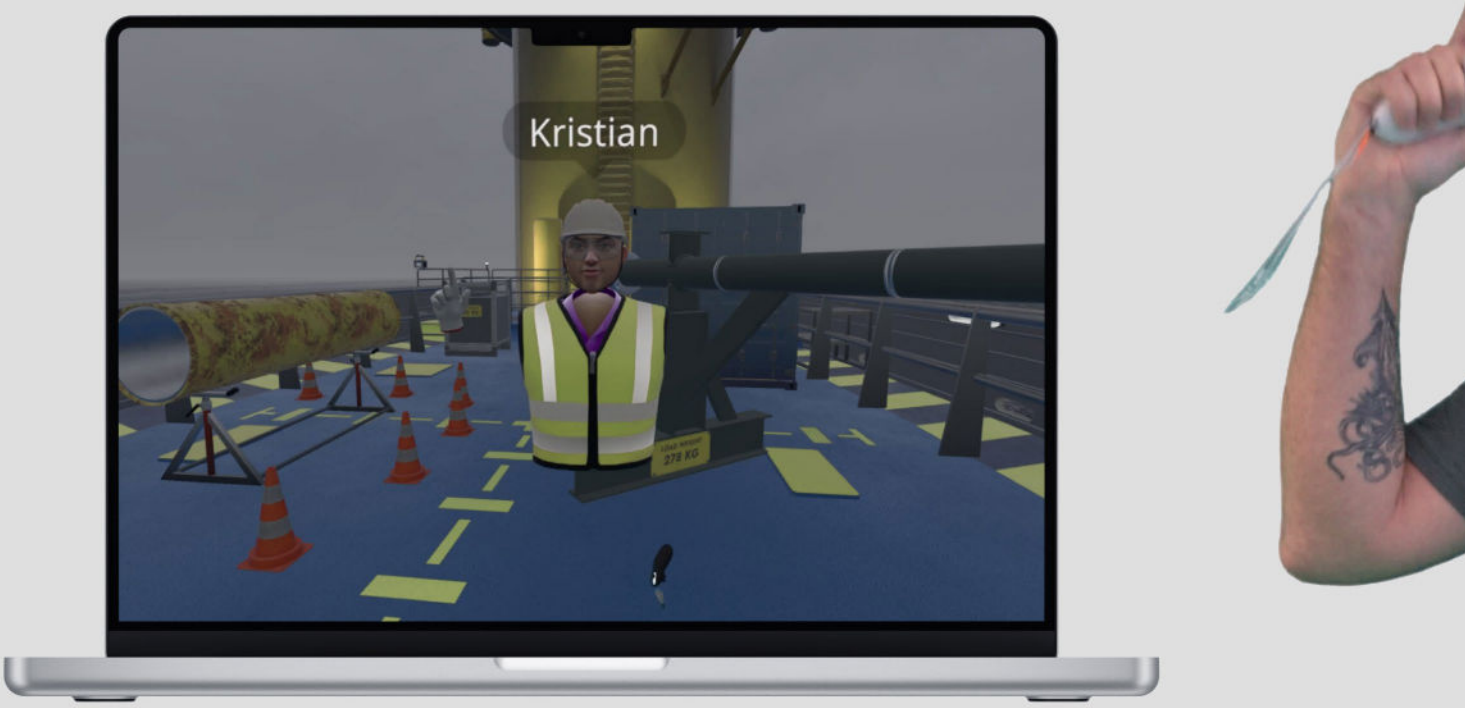


Pioneering the future: the digital evolution of training

Words: Lene Thirup, Chief Commercial Officer, Kanda

The wind energy sector faces significant workforce demands, with the Global Wind Organization (GWO) addressing safety and training needs. By leveraging digital technologies like virtual reality, companies like Kanda are transforming GWO training, offering scalable, flexible, and cost-effective solutions. This innovation enhances safety, operational efficiency, and workforce development in the industry.

As the demand for clean energy continues to surge in the renewable energy sector, so does the imperative to ensure the safety and competence of the wind industry's workforce. The ambitions for a green transition are high and spoken out loud. But let's face it, the challenges are enormous.

Just take a brief look at the latest IRENA report. It states that we need to employ an additional 26 million people in the renewable energy sector before 2030 to keep global warming to 1.5 degrees Celsius. That's 26 million people.

How will we effectively handle the need to train all these newcomers in the industry? Train them to install, maintain, and repair the industrial solutions we rely on in the renewable energy sector in a safe and scalable way?

In this context, the Global Wind Organization (GWO) emerges as a cornerstone in the wind industry. It offers a comprehensive training framework, with standards for entry-level service technicians led by the major players in the industry.

This article explores the digital future of GWO training in the wind industry, envisioning a landscape where innovation and safety converge seamlessly. It outlines strategies for scaling training, primarily leveraging digital technologies and VR to enhance accessibility, effectiveness, and engagement.

The imperative of GWO training

The Global Wind Organization is an international non-profit organization that provides standardized GWO training and certification for the wind industry. It was established by leading wind turbine manufacturers and operators to create a safer work environment for individuals in the wind energy sector.

The framework embodies a comprehensive approach to safety and equips workers with the knowledge and skills to navigate the complexities of wind energy environments safely.

By adhering to GWO standards, companies foster a culture of consistency and compliance across the industry. Whether onshore or offshore, this training sets a universal benchmark for safety practices, ensuring alignment with regulatory requirements and industry best practices.

Beyond safety, the training enhances operational efficiency by minimizing downtime due to accidents or injuries. GWO-certified professionals are better equipped to handle tasks efficiently, reducing the likelihood of costly delays and disruptions in wind farm operations.

The GWO standards and training framework are undoubtedly paramount for the wind industry to ensure a safe work environment for the current and next generations of skilled staff.

But as we can see, there is a vast gap between the actual GWO training delivered and the demand worldwide.

Thus, as the industry expands, scaling this training becomes imperative to meet the evolving demands. But how? Which strategies are feasible ways to deliver more GWO training worldwide without having to allocate huge investments for more physical training facilities?

Strategies for scaling

There is not a single initiative that will revolutionize the training landscape and help to scale GWO training.

Collaborative partnerships between industry stakeholders, wind turbine manufacturers, operators, training providers, and regulatory bodies will undoubtedly help to pool resources and expertise.

On the other hand, investments in workforce development to attract and retain wind industry talent are also crucial to incentivize individuals to pursue GWO training and build rewarding careers in the wind industry.

However, one of the most efficient strategies to scale this training is to embrace digital technologies and follow the trends in other complex industries. Earlier this year, the Global Wind Organization also expressed the will to embrace new digital technologies to strengthen the training framework and has asked for relevant case studies to support its ambition.

Emerging digital trends and innovations

In the field of digital technologies, there are several exciting trends and innovations, including augmented reality (AR), virtual reality (VR), mobile learning solutions, and cloud-based learning management systems (LMS). Some technologies have been around for years, while others have only recently matured.

Many show a vast potential to optimize training through enhanced accessibility, more robust data collection, and unlimited collaboration across geographies.

This article will focus on how virtual reality may contribute to scaling GWO training and

making it more accessible, cost-effective, and engaging for trainees.

In short, VR technology immerses trainees in realistic wind turbine environments, allowing them to practice essential tasks and safety procedures in a safe and controlled setting. From climbing towers to troubleshooting equipment, VR training simulations enhance hands-on learning without the associated risks.

Kanda's GWO ambitions in VR

The Danish software company Kanda had vast experience with advanced turbine training in VR and a yearlong collaboration with market-leading OEMs like Siemens Gamesa and GE Vernova when it decided to supplement its business strategy with the development of GWO courses in virtual reality.

The ambition was clear: to make GWO training in the wind industry easy to access, highly affordable, and with a very efficient learning method. To deliver a training solution with a strong business case and reduction in both cost and incidences.

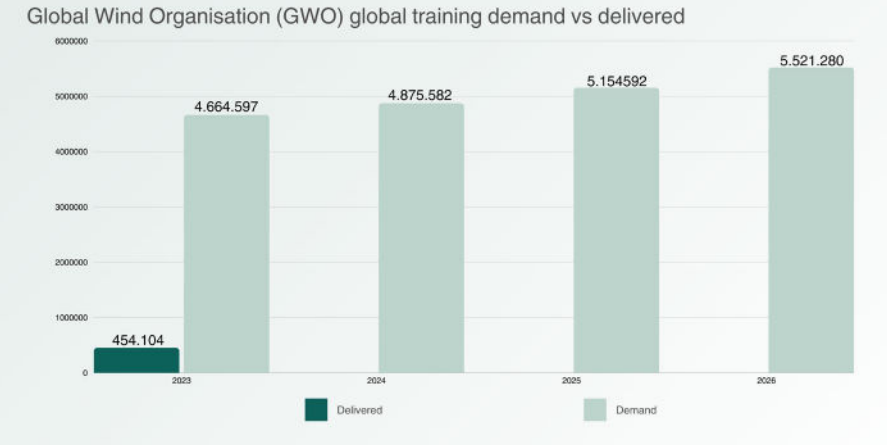
In 2023, Kanda became the first company to offer a digital GWO course certifiable to industrial standards. Today, Kanda offers the Lift User, Slinger Signaler, and Basic Technical Training through their Virtual Training Platform on a simple subscription model to Training Providers and end-users.

Digital GWO courses on demand and as blended learning

As with any other digital SaaS product, the GWO courses can be accessed and activated on demand. Some, such as the Lift User course, are certifiable completely in VR as remote training. In this case, the delegates and the qualified instructor just put on a headset and complete the entire course in VR. There is no need for traveling, no time spent on accommodation, and the associated CO_2 emissions are greatly reduced.

The digital courses may also be delivered as blended learning if the GWO standard requires training in a physical context with physical replicas. In these situations, the instructors may choose just to use digital simulations and interactive modules to transform the training into immersive learning experiences along with physical training and the standard classroom training.

Wind energy market



The GWO framework and training providers

Kanda now has a global reach and collaborates with GWO training providers worldwide. To deliver the digital courses, the instructors need to complete a comprehensive 'Train the Trainer' program with Kanda to ensure they are familiar with VR as a training tool.

In general, digital courses may help training providers scale their businesses. Digital training solutions offer significant cost savings compared to traditional classroom-based training. By reducing the need for travel, accommodation, and venue rentals, digital platforms like Kanda's reduce overhead costs while maximizing the scalability and reach of GWO training initiatives.

In addition, embracing digital technologies is also a way to democratize access to GWO training. Training providers can provide a flexible and cost-effective training solution for a broader audience, including remote and underserved regions. Whether in urban centers or remote regions, aspiring wind energy professionals can now access high-quality training materials and resources with ease.

Challenges and considerations

While Virtual Reality holds tremendous potential for enhancing training experiences, it's essential to recognize that it's not a panacea for all scalability challenges in GWO training.

Integrating VR into training programs also presents several challenges and considerations that must be addressed for successful implementation.

First of all, some training providers and end-users may prefer traditional training methods or face-to-face interactions, leading to resistance or reluctance to adopt VR-based training.

Introducing VR training requires a period of adaptation and learning for both trainers and trainees.

While VR can enhance certain aspects of training, it's essential to recognize that it's just one tool in the training toolkit. Combining VR with other training methods, such as classroom instruction, hands-on practice, and on-the-job training, can provide a more comprehensive and scalable training solution.

Finally, ensuring that VR-based training programs meet regulatory requirements and certification standards, such as those set by GWO or relevant national authorities, is essential for maintaining compliance and industry accreditation.

The future of digital GWO training

In summary, while VR offers significant benefits for GWO training, it's essential to approach its implementation with a clear understanding of its strengths, limitations, and potential challenges.

By proactively addressing these challenges, organizations can unlock VR's full potential to enhance the safety, effectiveness, and scalability of GWO training programs, ushering in a new era of innovation and excellence in the wind energy sector.

For training providers, digital training presents a wealth of opportunities to enhance their training offerings, reach a broader audience, and drive positive outcomes for trainees and the wind industry.

By leveraging the advantages of digital technology, training providers can deliver impactful and transformative training experiences that empower individuals to thrive in the dynamic and rapidly evolving field of wind energy.

With Kanda´s Virtual Training Platform trainees can access the GWO courses required in the wind industry, wherever they are. It's easy to access, highly affordable and comes with a flexible subscription model.

www.kanda.dk

About the author

Lene Thirup is Chief Commercial Officer at Kanda with 20 years of experience as a trusted advisor and business developer collaborating with market leaders in the wind industry.

She holds a masters in Anthropology and Media science and serves as a lecturer in digital strategy and business development at Business Academy Aarhus.

About Kanda

Kanda trains the people who keep the industrial world running.

It comprises 35 dedicated developers, designers, and 3D magicians based in Denmark and Indonesia.

For more than a decade, it has developed digital simulators that enable remote hands-on training for market leaders in the wind industry, the maritime and healthcare sector.

It aims to make training easily accessible and deliver digital training solutions with a strong business case and an efficient learning method.