



MilleaLab - The all-in-one VR platform for education

Innovation and Learning Practice

Bridging Innovation and Learning in TVET (BILT) Project

Submitted by SHINTA VR, Indonesia

This example was first premiered at the
BIBB International Roadshow DIGITAL MEDIA IN TVET in 2021

Overview

MilleaLab is an all-in-one software platform to create 3D and virtual reality-based educational contents. The cloud-based platform offers educators hundreds of templates and 3D models to create customized virtual learning offers without coding skills.

MilleaLab strives to make teaching and learning activities happier, innovative and imaginative. The platform was launched in 2019 and has enabled access to virtual learning offers for 1500 schools and more than 16000 active users in Indonesia. MilleaLab also trained and certified 5200 teachers and supports teachers to become VR ambassadors to drive learning innovation through the development of VR-based learning media.



Basic information

- **Purpose of immersive technology use in TVET:**
 - Using authoring tools
 - Understanding nature and physics
 - Interaction with machines
- **Type of training:** K-12 education (incl. TVET) in Indonesia
- **Start date:** 2019
- **Founders:** Akira Sou, Andes Rizky, and Andrew S. Puika
- **Partners:**
 - **Government:** [BRIN](#), [SEAMOLEC](#), [MoEC](#)
 - **Training:**
 - Online learning [Rumah Belajar](#) & [Sekolah.Mu](#);
 - Teacher training [Guru Binar](#) & [High Tech Teacher ID](#);
 - Indonesian Teacher Associations [PGRI](#) & [IGI](#)
 - **Community:** [TinC](#)
 - **Distribution:** [Stela Indonesia](#)
- **Funding programmes:**
 - Telkomsel Innovation Centre (TinC) Batch 5
 - Start Up Inovasi Indonesia 2019 and 2021 by Indonesian National Research and Innovation Agency (BRIN)

Educational concept

Learning contents and outcomes

MilleaLab is all-in-one platform that enables educators to **create 3D- and VR-based learning content**. The MilleaLab Creator provides educators with hundreds of templates and 3D models to create customized virtual learning offers without coding skills.

MilleaLab also focuses on improving the technology competencies of teachers and encourages them to become drivers of change towards innovative education in Indonesia. So far 5,200 teachers and 130 VR Ambassadors have been trained and certified.

The use of MilleaLab in education and training helps to achieve the following **learning goals**:

- Increase motivation and engagement of learners
- Enhance student's learning achievements and support higher-order thinking skills
- Improve competencies of teaching staff to realize technology-enhanced learning (TEL), especially in VR

Educational setting

Millealab can be used for classroom-based, hybrid and online teaching and learning.

- Learning contents created in MilleaLab can be applied in **all curricula and lesson plans**, e.g. in STEM subjects or to support practical training.
- The platform allows educators to apply **various learning methods** such as inquiry-based learning, problem-based learning, project-based learning, flipped classroom, station rotation learning, blended learning and game-based learning.
- Depending on the chosen learning approach, MilleaLab users can be **individuals, small or big groups**, who can access the learning content via the MilleaLab Viewer
- **Teachers and trainers** are responsible to plan the implementation of 3D- and VR-based learning in teaching and training, guide and provide demand-based learning support for learners.

Technical setup

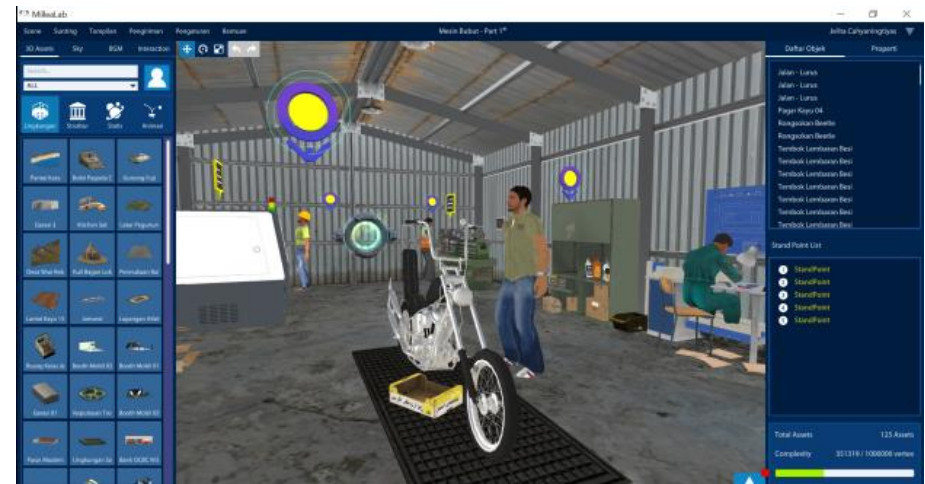
MilleaLab Creator is based on the development environment Unity 3D and offers educators a wide range of design options to create virtual learning scenarios.

The software offers ready-made templates and 3D design elements and supports the import of external objects, e.g. audio, images, videos and 360° videos.

In **MilleaLab Viewer**, users can choose between a **VR and non-VR mode**.

- In VR mode, learners can access the learning application by using a standalone VR headset and bluetooth controllers.
- In non-VR mode, users can access the learning content via laptop or smartphone (Android).

MilleaLab Viewer also features a **classroom system** that schools can use to provide learners user-based access to virtual learning offers.



Desktop view of MilleaLab Creator

Benefits of use in TVET

Authoring tools facilitate preparation of VR learning media

MilleaLab can help teachers to create their own VR content for curricula and syllabuses easily and quickly. By following a no-code approach, the platform democratizes access to virtual reality and technology-enhanced learning. In addition, the use of MilleaLab enables students to learn anywhere and anytime.

Technology solutions like MilleaLab make TEL affordable

Digital learning media can help to reduce costs for physical equipment. In addition, the use of authoring tools also save costs, e.g. for programming.

VR-based learning increases learning efficiency

User surveys conducted by MilleaLab show that VR-based learning offers increase learners' motivation and positive attitude towards learning. In addition, integrating VR-based learning in education and training can support the development of higher-order thinking skills, such as critical thinking, remembering, understanding, analyzing and creating.

Lessons learned

Support teachers to become catalysts of change

Teachers have a crucial role as drivers towards modern digital education. MilleaLab offers three different training levels (basic – intermediate – expert) for teachers to learn how to create VR-based learning media, apply suitable pedagogical methods and integrate them into lesson plans.

Teacher demographics pose particular challenges

Extra training and mentoring is necessary to provide support to educators who are not familiar with virtual reality. In particular, older teachers tend to find it more difficult to apply technology for teaching and learning.

Schools must be prepared before implementing TEL

Schools need to consider various factors to ensure the success of technology-enhanced learning. Besides providing easy-to-use technology solutions, educators also need clear guidelines and criteria to assess the readiness of their institution for implementing VR technology in education and training.

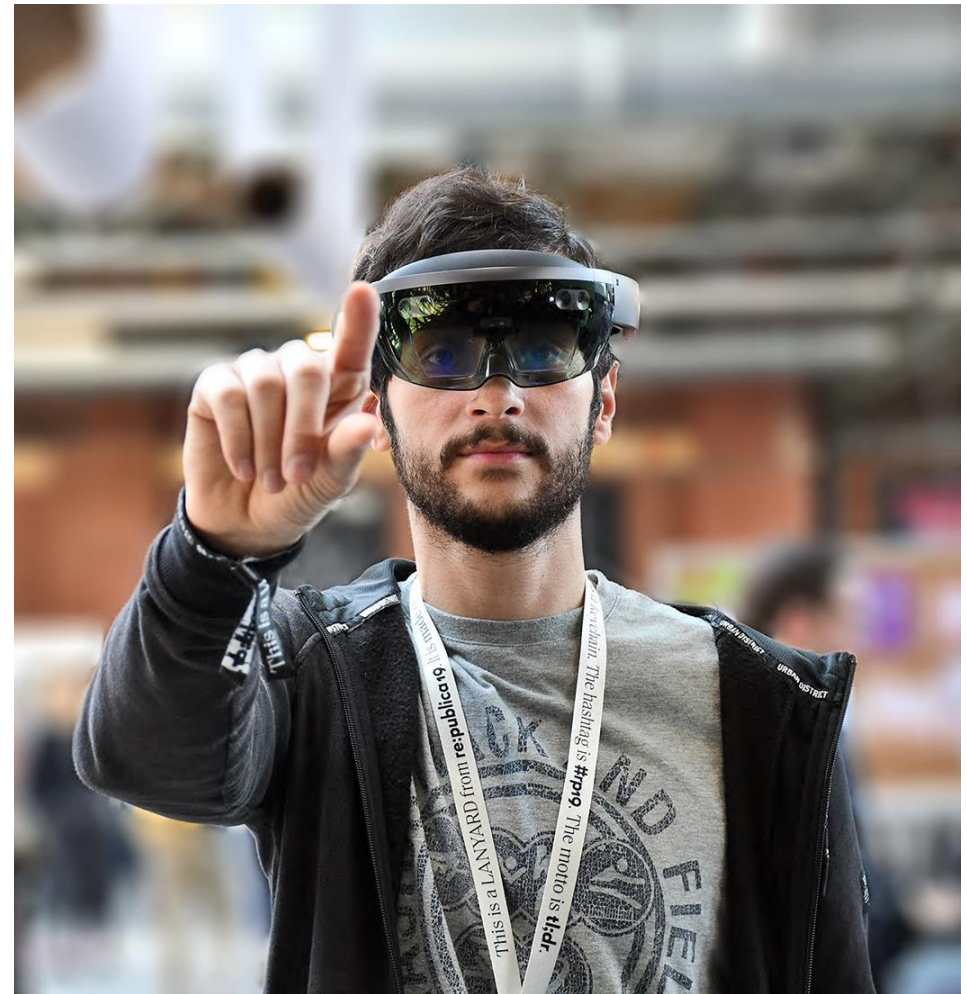
BIBB International Roadshow Digital Media in TVET

Initiated by the Federal Institute for Vocational Education and Training in Germany (BIBB), the Roadshow aims to show the potential of digital applications and technologies for teaching and learning in Technical and Vocational Education and Training (TVET) to make learning more flexible and enhance the quality and attractiveness of TVET.

The format builds on the German Roadshow 'Digital Media in TVET', which has been successfully implemented and conducted by the Federal Ministry of Education and Research in Germany (BMBF) in cooperation with BIBB since 2016.

More information:

<https://www.bibb.de/en/147504.php>



About SHINTA VR

SHINTA VR was established in 2016, and started as a B2B service company for developing customized VR content and software.

SHINTA VR has clients from various sectors, for example telecommunication, oil and gas industries, market research, architecture and government. The company has completed more than 100 projects in 10 countries within 5 years.

SHINTA VR pursues the mission to raise the impact of VR technologies and to democratize the access to VR, enabling more people to benefit from these new technological opportunities.

Contact and further references

Contact

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Further references

- Demo video: [How MilleaLab works](#)
- Websites Shinta VR: <https://shintavr.com/>
- Website MilleaLab: <https://millealab.com/>



MilleaLab Partners

Government partners



Distribution partners



Training partners



Community partners



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The Bridging Innovation and Learning in TVET (BILT) project provides TVET stakeholders with a platform for exchange and supports them to address current challenges in TVET systems, which arise due to technological, social, environmental, and workplace changes. Within BILT, the overarching theme is New Qualifications and Competencies in TVET, which is supported by four focus themes in the context of TVET:

- Digitalization
- Greening
- Entrepreneurship
- Migration

Through regular knowledge exchange, thematic project activities, and expert working groups BILT leverages the existing mechanism of the UNEVOC Network to offer opportunities for collaboration and peer learning in

Europe, Africa, and Asia and the Pacific. The project complements national developments to explore and support innovative, market-oriented and attractive modes of learning and cooperation in TVET.

The results of ongoing activities are accessible on BILT's web page.

The BILT project is implemented by UNESCO-UNEVOC with support of the German Federal Institute for Vocational Education and Training (BIBB), and sponsored by the German Federal Ministry of Education and Research (BMBWF).

For more information, please visit www.unevoc.unesco.org/bilt

or contact us at unevoc.bilt@unesco.org