



Paramedic virtual simulation lab

Promising Practice

Implemented by:

Abu Dhabi Centre for Technical and Vocational Education and Training (ACTVET),
Fatima College of Health Sciences

Where:

United Arab Emirates

Status:

Launched in 2021

Summary:

The virtual simulation lab is a clinical education solution that creates highly realistic and immersive pre-hospital simulation scenarios to improve students' clinical skills.

Overview

ACTVET, the Abu Dhabi Centre for Technical and Vocational Education and Training, plays a crucial role in shaping the Emirate of Abu Dhabi's TVET landscape. With a mission to cultivate a skilled workforce driving innovation and economic growth, ACTVET aspires to position TVET as the preferred choice for Emirati citizens.

Overseeing entities like the Abu Dhabi Vocational Education and Training Institute (ADVETI) and the Institute of Applied Technology (IAT), including Fatima College of Health Sciences (FCHS), Abu Dhabi Polytechnic (ADPoly), and Applied Technology Schools (ATS), ACTVET ensures accredited educational and vocational training programmes aligned with international standards.

Fatima College of Health Sciences (FCHS) is one of the entities founded in 2006 in the UAE and is part of the Abu Dhabi Centre for Technical and Vocational Education and Training (ACTVET). It initially offered a Bachelor of Science (BSc) in Nursing. In response to growing demand, it later added Pharmacy, Physiotherapy, Radiography, Medical Imaging, Emergency Health (Paramedics), Psychology, and Midwifery programmes.

Description

The virtual simulation labs

The initiative to establish paramedic virtual simulation labs at FCHS Abu Dhabi Campus, with plans for expansion to Al Ain and Ajman campuses in 2023-24, is a joint effort aligning with the educational objectives of both FCHS and ACTVET. The institutions aim to improve and expand healthcare education by introducing labs which provide a consistent and standardized learning experience for paramedic students across various campuses, demonstrating a commitment to innovative educational excellence.

Collaboration

The collaborative and shared commitment of FCHS and ACTVET to achieve their innovation strategy goals in vocational and healthcare education is evident in integrating advanced and innovative technology, specifically through virtual simulation labs.

Well-skilled paramedics

Students are well-equipped with practical skills, preparing them for the dynamic healthcare landscape. The expansion plan demonstrates adaptability to regional healthcare needs, while ongoing assessment and improvement efforts emphasize the commitment to providing the highest quality education. This commitment aims to produce well-prepared paramedics ready to tackle real-world emergencies.

Objectives

The virtual simulation lab was designed to improve paramedic students' clinical skills and decision-making abilities, practice for various emergency scenarios, and create a safe and consistent learning environment. The trainers provide the proper feedback and student skills assessment. The target group comprises paramedic students, educators and instructors of paramedic training, and stakeholders, including experts, administrators and other healthcare professionals.

Advanced technology healthcare and well-prepared paramedics in UAE

- **Planning and needs assessment**
The initiative began with a thorough needs assessment to determine paramedic training requirements. This involved identifying students' skills and scenarios to practice and master.
- **Technology acquisition and setup**
The campus acquired the necessary virtual simulation technology and equipment, including various monitors, mannequins and computer systems, to create a realistic virtual training environment.
- **Scenario development**
Educators and simulation experts collaborated to develop a range of highly realistic pre-hospital simulation scenarios.
- **Integration of monitors**
Various monitor types were integrated into the simulation lab, allowing students to practice with different monitoring equipment commonly used by paramedics.

- **Stakeholder involvement**
The initiative likely involved various stakeholders, including faculty members, simulation experts, IT specialists, industry partners and students. Collaboration among these groups was essential to ensure the success of the virtual simulation lab.
- **Training and implementation**
Educators received training on effectively using the simulation lab, while students were introduced to the technology as part of their paramedic curriculum.
- **Assessment and continuous improvement**
Ongoing assessment and evaluation of the virtual simulation lab's effectiveness is crucial to the initiative. Feedback from students and faculty is used to refine and improve the simulation scenarios and technology.

Establishing the virtual simulation lab aimed to enhance the clinical skills of paramedic students, providing them with a safe and immersive learning experience.

Outcomes and impact

- As a result of practical training, paramedic students enhance their skills and become more confident in their abilities.
- In real-life emergencies, the virtual training allows paramedics to provide highly professional in-patient care.
- The medical training is consistent and standardized, ensuring that all students receive the same quality of education.
- Patient safety is a top priority, and mistakes can be corrected in a virtual environment without causing harm to the patient. Students remain up-to-date with the latest medical practices, and efficient assessment tools are utilized to identify areas needing improvement.
- Training is cost-effective through the use of reusable equipment.

Challenges and Insights

Collaboration is key

The upfront cost of establishing a virtual simulation lab can be significant. Therefore, collaboration with industry is important for the sourcing of resources and technology to support the lab. There should also be close collaboration with educators, technology experts and simulation specialists. Effective teamwork is essential for the successful implementation of virtual simulation labs.

Sustainability

Planning for sustainability and funding is vital to maintaining the lab in the long run.

Funding

Explore various funding sources and partnerships to support ongoing maintenance and upgrades.

Next steps

The plan is to continue with a student-centred approach while training paramedics, as well as organizing workshops and conferences to spread the idea of virtual labs and promote healthcare skills nationally and globally. The organization also plans to learn from national and international best practices to improve its virtual simulation lab.

Learn more

Naeema AlMenhali, Director of Strategic Planning and Performance Management Dept from Abu Dhabi Centre for Technical and Vocational Education and Training (ACTVET), helped to compile this document.

For more information, please contact:
naeema.almenhali@actvet.gov.ae

To learn more about Abu Dhabi Centre for Technical and Vocational Education and Training (ACTVET), visit:
www.actvet.gov.ae

Discover other practices

The **UNESCO-UNEVOC Innovative and Promising Practices database** presents successful projects tackling key themes in TVET, such as entrepreneurship, youth employment, the green transition, digitalization, private sector engagement and more.

Learn more on our website at:
<http://www.unevoc.unesco.org/promisingpractices>

Questions or comments? Contact our team at:
unevoc-pp@unesco.org

The designations employed and the presentation of material throughout this document do not imply the expression of any opinion whatsoever on the part of UNESCO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The ideas and opinions expressed in this document are those of the authors; they are not necessarily those of UNESCO and do not commit the Organization.

© UNESCO, 2024

This document is available in Open Access under the Attribution-ShareAlike 3.0 IGO (CC-BY-SA 3.0 IGO) license (<http://creativecommons.org/licenses/by-sa/3.0/igo/>). By using the content of this publication, the users accept to be bound by the terms of use of the UNESCO Open Access Repository (<https://en.unesco.org/open-access/terms-use-ccbysa-en>).

Cover photo: © FCHS
Design: UNESCO-UNEVOC