

# VR Vet Academy Summary

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## Overview

VR Vet Academy is a virtual reality training platform that helps veterinary students and professionals study and practice large-animal anatomy, physiology, and clinical procedures in a low-stakes, immersive environment. It provides realistic, repeatable simulations, particularly for species learners may rarely encounter, and enhances understanding, engagement, and hands-on skill development while reducing reliance on live animals or cadavers. Success is measured by adoption from students and institutions and by improvements in comprehension, retention, and procedural performance.

Traditional training often relies on textbooks, lectures, and limited cadaver access, which restrict meaningful practice, especially with rare or protected species. VR Vet Academy addresses these limitations by offering scalable, ethical, and practical virtual experiences that supplement existing instruction.

The system features life-sized 3D animal models, interactive dissections, diagnostic scenarios, and procedural simulations in a controlled environment. Learners can train independently or in instructor-led sessions. The platform includes automated progress tracking, achievement features, and frequent content updates that align with current veterinary standards. It integrates with learning management systems such as Canvas and Blackboard so educators can manage content, track performance, and incorporate VR training into their coursework.

## Demographics

VR Vet Academy serves veterinary learners and educators, from beginners to experienced professionals. It is designed for users aged 13 and older, with graphic content moderated to remain realistic and appropriate for educational use.

## Use Cases

Major use cases include verified user profile creation, student module selection and completion, educator assignment of modules and deadlines, performance tracking and feedback, and collaborative development and deployment of new animal simulation modules.

## Functional Requirements

The system must support account creation, authentication, password recovery, and logout. Students must be able to select and complete modules, and educators must be able to assign modules, request new ones, and track learner progress. The system must record and report student performance data.

## Data Requirements

The database includes five main tables:

- AnimalModel for species data and file paths to 3D models
- Module for module descriptions and required tools
- User for user profiles information
- ProgressRecord for module progress and performance metrics
- Tools for information on tools or instruments used in the module

## **Requirements**

The system must maintain input latency below 13 milliseconds, a minimum frame rate of 120 FPS, and tracking accuracy within 1 centimeter. It must provide accurate time tracking, realistic hand collision detection, and storage capacity for at least 40 animal species.

The system must recover properly from a crash, maintain continuous uptime except during scheduled maintenance, include fault-tolerance measures, and provide standard VR safety warnings.

The interface must be intuitive and accessible, with clear documentation, a white and teal design, consistent professional styling, and a prominently displayed logo. The experience must be immersive to enhance learning.

The system should function in quiet indoor environments and support both sitting and standing use. It must be compatible with at least two generations of VR hardware and available on the three most popular VR storefronts. Updates should be released every six to eight months and thoroughly tested.

## **System Design**

VR Vet Academy will use an offline-first client–server architecture that maintains the benefits of a traditional client–server model while allowing the application to function without internet access. This design is essential because users may be in urban or rural areas where connectivity is unreliable, ensuring uninterrupted learning and reducing frustration. At the same time, the server component securely stores assessment data and integrates with school grading systems, preventing tampering while still enabling instructors to provide accurate feedback and evaluations.