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# Development of a Mobile Teaching and Learning Module for VM893 (Field Services) with

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THE UNIVERSITY of TENNESSEE  
College of Veterinary Medicine

**Department of Large Animal Clinical Sciences**

**COVER PAGE**

**Project Title:** Development of a Mobile Teaching and Learning Module for VM893 (Field Services) with Interactive Comprehension Assessments.

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## **ABSTRACT**

The goal of this project is to develop a teaching and learning module with interactive comprehension assessments that can be used in a mobile (truck) or stationary (classroom) environment. A considerable portion of the Field Services clinical rotation is spent with students driving from the UT Veterinary Medical Center and from farm to farm in a large four-door truck. During these trips a consistent set of relevant topics will be delivered to students by discussing clinical cases. The format will be interactive and students will be equipped with technology allowing an assessment of their comprehension. Students will have day-to-day access to data collected during their assessments. Easy access to evaluations during the course could improve comprehension of the material. Moreover, the quality of teaching may improve as faculty can more easily determine if the materials they are delivering are understood, allowing adjustments to be made when necessary.

## **NARRATIVE**

VM893 (Field Services) is a required course of the clinical (4<sup>th</sup> year) curriculum for professional students enrolled in the College of Veterinary Medicine. The required course is a three-week rotation that is offered year-round through the Department of Large Animal Clinical Sciences and taught by faculty in the Field Services section.

During this clinical rotation, students, faculty and staff visit farms and other animal agriculture sites throughout the state and region for veterinary medical emergencies, as well as production issues and preventative medicine. A considerable portion of the rotation is spent with students driving from the UT Veterinary Medical Center to and between farms in a large four-door truck. During the trips relevant topics are discussed and questions are asked. However, delivery of consistent information and objective assessment of participation and comprehension are difficult and inefficient.

The goal of this project is to develop a teaching and learning module for use in a mobile (in truck) and stable (classroom) environment. Throughout the rotation a consistent set of relevant topics [e.g. introduction to beef and dairy farms, herd vaccination and preventative medicine, dystocia and other related events, field surgeries, farm animal welfare, judicious use of antibiotics in farm animals, and on-the-farm diagnostics] delivered in case-based format will be presented. Topics may be delivered by various modalities and will be presented to 2-6 students at a time while in the vehicle. The module and the required hardware must also be accessible in a conference or class room setting (when there are fewer trips into the field). The materials will be interactive and students will be equipped with technology(s) that allow objective assessment of comprehension (e.g. clickers, touch screen, etc...). The data collected during the assessments will be used for high momentum (more rapid turnaround) evaluations and more objective evaluation and feedback to students regarding their performance during the course, along with potentially improving comprehension of the material. Moreover, the quality of teaching/learning will improve as faculty can more easily and quickly determine if the material being delivered is understood and make timely adjustments / changes when necessary.

To help ensure safety and prevent distractions to the driver during the mobile learning module, the driver will not be responsible for any portion of the module that would require him/her to look away from the road or use his/her hands for anything other than driving. During each lesson, a passenger (faculty, staff, or student) will be responsible for initiating and/or advancing any audio and/or visual materials. Moreover, any screens in the front of the

truck will be fitted with screen shields that prevent viewing by anyone other than the lesson facilitator.

At the start of each rotation each student will be assigned a clicker (the clickers remain with the Field Service section). Questions about the cases and topics in each lesson will require student participation thus allowing the instructor to determine if learning objectives are being met. When the group returns to the Veterinary Medical Center the data from the comprehensive assessments will be synched to a website accessible to students. This will help students and faculty members keep up with grades, participation, and performance throughout the rotation.

### **EQUIPMENT**

- 1) Laptop computer
- 2) Consistent power source (e.g. AC/DC adapter for the truck with a plug in the cab)
- 3) Docking station for the computer
- 4) Computer audio output hardwired or wireless to the truck speakers or to external speakers mounted in the cab
- 5) Computer video output hardwired or wireless to monitors mounted in the rear of the cab
- 6) Clickers and a wireless receiver
- 7) Software to synchronize data from the truck computer to a computer and site/files accessible to students, faculty, and staff
- 8) Conference room, classroom, or small-group room equipped with hardware and software that will allow delivery of lessons, comprehension assessment, and data synchronization

### **PROJECT SCHEDULE**

February to September 2011 – Develop seven clinical cases over the next 7 months that includes questions to assess student comprehension of specific learning objectives for relevant topics. Once the mobile/stationary teaching and learning module hardware and software are in place, lessons will be delivered as they are completed.

March 2011 – Procure hardware for the mobile module and insure there is access to the necessary equipment in a classroom or conference room.

March 2011 – Install hardware in the truck.

April 2011 – Develop a website where student comprehension and participation data can be stored or synchronized.

May 2011 – Begin delivering the completed lessons and assessing student comprehension. This would be an ideal time to begin the project, since a new class starts their clinical curriculum.

September 2011 – Completion of the 7 lessons

October 2011 – Full implementation of the mobile teaching and learning module with consistent delivery of lessons, assessment of comprehension, and synchronization of data

November 2011 – Final report submitted to Innovative Technology Consulting

December 2011 – Begin planning a study comparing comprehension assessment in the mobile module with a traditional classroom setting. The goal would be to determine if the physical setting affects student comprehension of material. The results will be published in a peer reviewed journal (e.g. Journal of Veterinary Medical Education).