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Aquatic animal disease case simulation tool

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Abstract:

The use of computer-based case simulations has become popular in educational settings and, in particular, in the health professions. Simulations create a rich, real-life environment where students can apply their skills and experience feedback. While case simulations do not replace real-life case experience, they have tremendous potential to efficiently train students in critical thinking and solving difficult problems.

Computer-based case simulations are usually constructed with sophisticated decision channels, which replicate real-life choices, with attached probabilities of success. The student pursues a particular path and draws upon higher order thinking skills (analysis, synthesis, evaluation) as he or she progresses through the diagnostic process. Along the way, the student is given opportunities to backtrack or abandon a particular line of thinking in favor of another, and receive information about related pathogens, conditions, or diseases. The student ultimately evaluates the clinical presentation, determines a diagnosis, and selects the most appropriate treatment option.

In addition to the content-related learning this model fosters, it also enables students to examine and analyze their own decision-making processes. Students may view a schematic of the decision-making tree they construct and discover the points where their line of questioning may have been flawed, as well as identify the places where their critical thinking led them to ask questions that revealed pertinent information to make a correct diagnosis.

We propose to develop a computer-based veterinary medical case simulation model to train students and professionals on fish diseases, diagnostic decision analyses, and therapeutic treatments used for aquatic animals. This technology will initially serve to train veterinary students at the College of Veterinary Medicine and Life Sciences using a context-rich, case-based learning environment. The prototype tool created in this project will serve as a prototype to enable us to build a library of fish disease case simulations in the future, which can be used to provide continuing education for veterinarians in Hong Kong and abroad. It will also contribute to City U's veterinary school mission to use a case-based learning approach to effectively deliver the curriculum and incorporate fish health in the veterinary teachings.