Creation and Implementation of a Virtual Microbiology Procedure Manual

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Complex protocols within the clinical microbiology laboratory can overwhelm students, resulting in both confusion and frustration. Many students find it extremely challenging to fully comprehend new microbiology techniques by solely reading and navigating through written procedures. Development of a comprehensive microbiology procedure manual, incorporating authentic bacterial images and video demonstrations for each procedure, has shown to be an invaluable student resource. The videos in the virtual procedure manual were implemented into a 2-week accelerated microbiology lecture/laboratory course of 71 students. Videos were captured using iPad technology and a web-link to each video was distributed to students for easy access. Implementation of online videos in the student laboratory saved time by eliminating many live demonstrations and decreased the number of clarification questions asked by students. Student survey results indicated that 94% of respondents found demonstration videos helpful in preparing them to perform a new procedure, and 83.3% of respondents indicated willingness to watch a video demonstration procedure before a laboratory session. Data supports that implementation of a comprehensive virtual procedure manual can positively impact a wide range of pupils, including visual and auditory learners, and serve as an additional tool in accelerated educational environments. Comprehensive virtual procedure manuals may be applied to other procedure-heavy laboratory courses, such as immunohematology, and could enhance the experience of online learners who are unable to physically take a laboratory course.

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