Teaching Tips/Notes NACTA Journal

Survival Teaching Tips for Remote Teaching Laboratories during COVID-19!

Introduction

Due to the threat of COVID-19, colleges and universities are facing decisions about how to continue teaching and learning while keeping faculty, staff, and students safe (Hodges, Moore, Lockee, Trust, & Bond, 2020). As a result, most institutions have opted to cancel all face-to-face classes, including labs and other learning experiences, and have mandated that faculty move courses online to help prevent the spread of COVID-19 (Hodges et al.). In the vast shift to online teaching caused by the new coronavirus, common questions are raised which include: “How will lab classes continue?” and “Is it even possible to move a lab course quickly online and still meet your learning objectives?” (Ptaszynski, 2020).

Until a return to the normal classroom/laboratory environment occurs, remote teaching and learning is taking place with efforts of faculty and students. This does not resemble what we think of as traditional online education (Kim, 2020). Remote teaching allows instructors to deliver their lessons online, while students complete assignments, projects, and assessments just like they would in face-to-face classes. Instructors can continue to provide greater access to general education laboratory courses, supplement in-class laboratory experiences, allow development of hybrid lab courses to provide better on-campus space utilization and provide continuity of instruction when access to campus is not accessible or for circumstantial reasons (Ptaszynski, 2020). During the COVID-19 era, instructors across all fields and disciplines will be expected to find ways to make remote learning work and still meet the learning objectives (Flaherty, 2020). For teachers of agriculture, they must possess skills necessary to integrate technology into their classrooms (Williams, Warner, Flowers, & Croom, 2014). In this article, the researchers provide survival tips for Food Science and Animal Science instructors using remote learning to move their face to face laboratories to a virtual environment.

Procedure

Survival is key. Even with instructors spending much time and effort moving various teaching activities such as lectures to remote teaching, there is concern if hands-on activities such as labs can occur effectively. During remote teaching, instructors are faced with offering activities that continue promoting active and engaged students while practicing higher-order thinking.
To develop online lab courses, instructors must modify learning objectives and find the right resources i.e. simulations to deliver (Taft, 2020).

<u>Tips for Shifting a Lab to Remote Teaching</u>

Taft (2020) provides the following tips for shifting various types of labs such as for Food Science and Animal Science to remote delivery with three options:

1-Instructor-created labs. Instructors may modify a previously planned face-to-face lab so that students can perform labs at home. Prior planning is required to decide appropriate resources available for students or what students will need to purchase to conduct the lab sessions.

2-Lab kits. The use of assembled lab kits for students and host predesigned labs on instructor's online platforms are suggested. Students must be given ample time and information in order to be prepared prior to lab sessions.

3-Virtual labs and simulations. Instructors have different ways to offer virtual labs. Some open-access resources can support introductory labs in Food Science related to testing and adjusting pH and learning basic biochemistry with cheese making.
Timing and planning ahead allows for offering more detailed labs such as simulations. Taft (2020) recommends simulations because students may become confused while performing labs remotely when their questions may not be answered instantaneously. For example, they may cut open a sheep heart at the wrong location or miss a critical step in an experiment-leading to frustration, confusion, and low grades on the lab session.
Safety is vital. At home, students must use self-discipline. Labs that require risk should not be assigned. Instructors are encouraged to cover safety precautions before all lab sessions. Online safety videos i.e. YouTube can prep students before performing lab sessions.
Instructors must be available before, during and/or after labs to answer questions. Flexibility is needed since students may reside in various time zones within and outside the North America
Provide clear and simple lab instructions. Encourage student-student interaction, such as discussion boards or blogs which allows students to post questions for peers to respond.

Additional Survival Tips for Remote teaching labs:

- Provide best AUDIO as possible which is more important than video.
- Keep camera in focus. Avoid auto-focus.
- Review footage before moving forward.
- Find someone to edit learning material.
- Use a wide shot with key audio.
- Use a wide shot but NO talking.
- Direct student attention to what's important (Ptaszynski, 2020).

Assessment

Formative assessment at a distance is challenging but possible (Miller, 2020), instructors will still need to check for student understanding and provide meaningful and frequent feedback. Remote teaching allows for immediate and multiple assessments at a *click* of a button. Both synchronous and asynchronous assessment is recommended. Polling and chat sessions allow for synchronous assessment while students can post work and to receive feedback over a longer timeframe following asynchronous assessment.

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