

Instruction in The Age of Coronavirus

Environmental Engineering Program Leaders Annual Meeting – 2020

By: Sarira Motaref, Ph.D., P.E., Assistant Director of Faculty Development,
Department of Civil & Environmental Engineering, University of Connecticut

The Effects of a Pandemic on Traditional Teaching



Delivering Contents



Assessments



Engagement/Interaction



Inclusive Teaching



Laboratory Courses



Support Faculty and students

Delivering Course Materials



Face-to-Face Teaching



Alternative forms to deliver course contents:

- Pre-recorded videos using Kaltura/Mediasite/...(length of 10-15 minutes)
- Available Youtube Videos relevant to your lecture topic
- Live session via Webex/Zoom/Google/Collaborate...
- Textbooks
- Lecture notes

Assessments



Diagnostic

- Check prerequisite material
- Uncover student misconceptions
- Assess pre/post learning gains

Formative

- Let students Try, Fail, and Get Feedback
- Provide feedback to instructor on class components and student

Summative

- Give exams to determine the final grade

Have more Diagnostic and Formative assessments in the Online class

Assessments



- Online Assignment Submission and feedback
- Online quizzes (4 choices)
- Polls on key concepts
- Minute papers (Student reflection)
- Take home exams
- Final Projects
- Mini Assessments rather than 1 big final exam
- Mid semester surveys (reflection on class)
- Proctored Exams (Respondous Monitor, ProctorU, Proctorio,....)



Face Detection



Live Video Streaming



Live Chat with Remote Candidate

Interactions in the Online Environment

Student-Contents S-C

- Student watches a video
- Student reads the textbook

Student-Teacher S-T

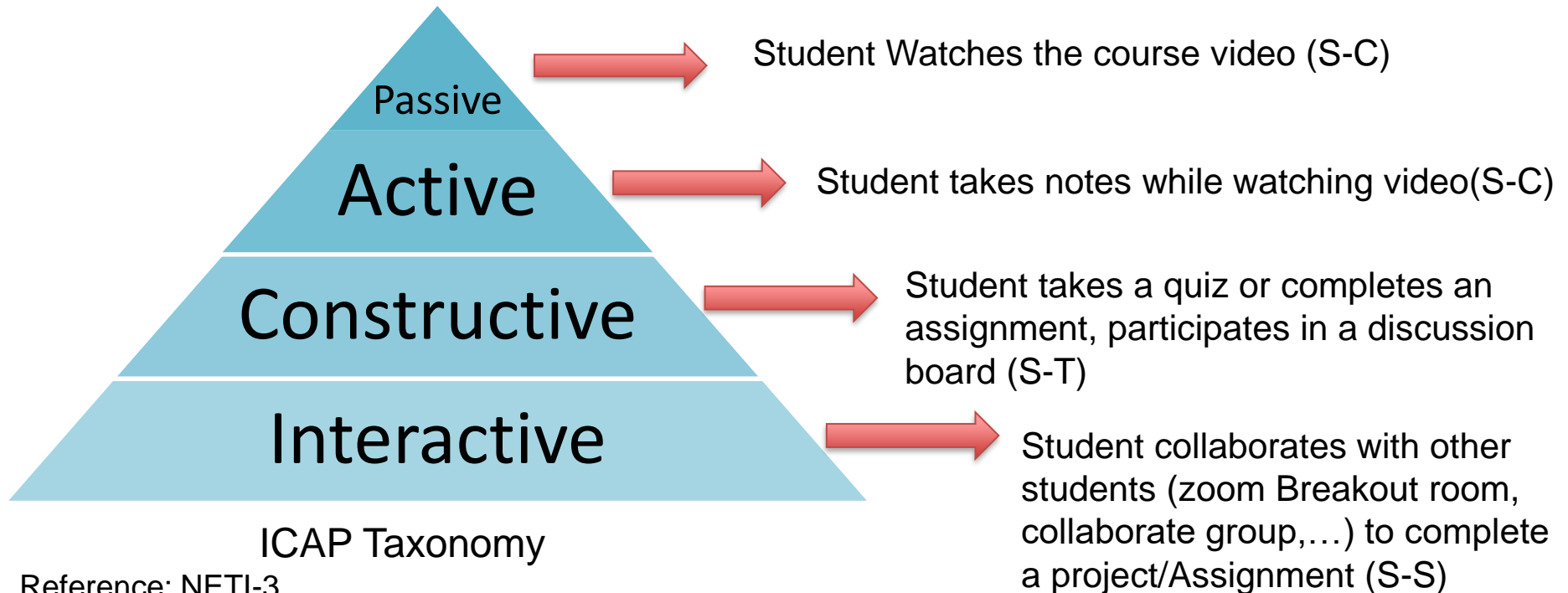
- Instructor gives feedback on an assignment or quiz
- Instructor gives comments on discussion board
- Office hours

Student-Student S-S

- Teamwork assignments
- Discussion boards
- Group projects
- Peer review

Make sure to accommodate S-T and S-S in online modality

Active Student Engagement in Online Modality



Inclusive Teaching in an Online Environment

- Record your live sessions and post them
- Provide the pdf file of your lecture
- Provide captions to your videos (if possible)
- Communicate upcoming deadlines with your students
- Accommodate students with different learning styles and learning paces
- Share a survey to hear students' concerns or challenges with follow-up feedback.
- Offer teamwork activities via google tools, discussion sections,....
- Use Smartbook to accommodate audio learners.
- Consider different time zones.



Offering a Laboratory Course



- Film the lab demonstration and post the video
- Design an experiment that can be simulated with accessible house tools
- Search and use available lab demo videos on Youtube
- Send Lab kits to students (Liability?)
- Ask students to analyze collected data
- Ask students to prepare and submit electronic reports



Offering a Laboratory Course



Virtual 3D Lab simulations

- 3D simulations for the experiment
- students can access a realistic virtual lab from their devices



Online Course Organization

Use a Learning Management System to organize Course

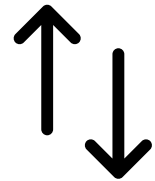
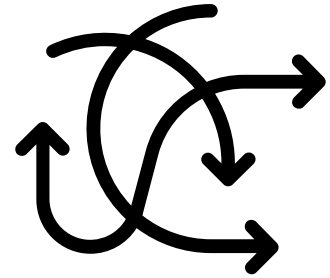


canvas



Organization, Accessibility and Navigation

- Accessible texts, files, and images
 - Orientations
 - Introductions
 - Calendars
 - Syllabus
 - Easy navigation
-
- Facilitate peer interactions
 - Allow students to practice with the technology



Guideline for Online Courses

HE

Specific Review Standards from the QM
Higher Education Rubric, Sixth Edition



General Standards	Specific Review Standards	Points
Course Overview and Introduction	1.1 Instructions make clear how to get started and where to find various course components.	3
	1.2 Learners are introduced to the purpose and structure of the course.	3
	1.3 Communication expectations for online discussions, email, and other forms of interaction are clearly stated.	2
	1.4 Course and institutional policies with which the learner is expected to comply are clearly stated within the course, or a link to current policies is provided.	2
	1.5 Minimum technology requirements for the course are clearly stated, and information on how to obtain the technologies is provided.	2
	1.6 Computer skills and digital information literacy skills expected of the learner are clearly stated.	1
	1.7 Expectations for prerequisite knowledge in the discipline and/or any required competencies are clearly stated.	1
	1.8 The self-introduction by the instructor is professional and is available online.	1
	1.9 Learners are asked to introduce themselves to the class.	1
Learning Objectives (Competencies)	2.1 The course learning objectives, or course/program competencies, describe outcomes that are measurable.	3
	2.2 The module/unit-level learning objectives or competencies describe outcomes that are measurable and consistent with the course-level objectives or competencies.	3
	2.3 Learning objectives or competencies are stated clearly, are written from the learner's perspective, and are prominently located in the course.	3
	2.4 The relationship between learning objectives or competencies and learning activities is clearly stated.	3
	2.5 The learning objectives or competencies are suited to the level of the course.	3
Assessment and Measurement	3.1 The assessments measure the achievement of the stated learning objectives or competencies.	3
	3.2 The course grading policy is stated clearly at the beginning of the course.	3
	3.3 Specific and descriptive criteria are provided for the evaluation of learners' work, and their connection to the course grading policy is clearly explained.	3
	3.4 The assessments used are sequenced, varied, and suited to the level of the course.	2
	3.5 The course provides learners with multiple opportunities to track their learning progress with timely feedback.	2
Instructional Materials	4.1 The instructional materials contribute to the achievement of the stated learning objectives or competencies.	3
	4.2 The relationship between the use of instructional materials in the course and completing learning activities is clearly explained.	3
	4.3 The course models the academic integrity expected of learners by providing both source references and permissions for use of instructional materials.	2
	4.4 The instructional materials represent up-to-date theory and practice in the discipline.	2
	4.5 A variety of instructional materials is used in the course.	2

Learning Activities and Learner Interaction

- 5.1 The learning activities promote the achievement of the stated learning objectives or competencies.
- 5.2 Learning activities provide opportunities for interaction that support active learning.
- 5.3 The instructor's plan for interacting with learners during the course is clearly stated.
- 5.4 The requirements for learner interaction are clearly stated.

3
3
3
2

Course Technology

- 6.1 The tools used in the course support the learning objectives or competencies.
- 6.2 Course tools promote learner engagement and active learning.
- 6.3 A variety of technology is used in the course.
- 6.4 The course provides learners with information on protecting their data and privacy.

3
3
1
1

Learner Support

- 7.1 The course instructions articulate or link to a clear description of the technical support offered and how to obtain it.
- 7.2 The course instructions articulate or link to the institution's accessibility policies and services.
- 7.3 Course instructions articulate or link to the institution's academic support services and resources that can help learners succeed in the course.
- 7.4 Course instructions articulate or link to the institution's student services and resources that can help learners succeed.

3
3
3
1

Accessibility* and Usability

- 8.1 Course navigation facilitates ease of use.
- 8.2 The course design facilitates readability.
- 8.3 The course provides accessible text and images in files, documents, LMS pages, and web pages to meet the needs of diverse learners.
- 8.4 The course provides alternative means of access to multimedia content in formats that meet the needs of diverse learners.
- 8.5 Course multimedia facilitate ease of use.
- 8.6 Vendor accessibility statements are provided for all technologies required in the course.

3
3
3
2
2
2

Quality Matters STANDARD

- Course Overview and Introduction
- Learning Objectives
- Assessment and Measurement
- Instructional Materials
- Learning Activities and Learner Interactions
- Course Technology
- Learner Support
- Accessibility and Usability



Do we have the right tools?

Instructors



- A 2in1 laptop with a stylus pen
- iPad and Stylus
- Headset
- Reliable Internet Connection



Students

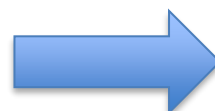


- A functional desktop or laptop
- Having a Camera and a microphone
- Chromebooks are not compatible with many software
- Reliable Internet Connection



How to support our Faculty

- Provide training via the University Teaching center, national workshops
- Provide proper laptop, headset,...
- Provide a central station to record lectures
- Form a community of practice
- Share successful/unsuccessful practices used in Online delivery mode
- Share resources



How to support our students

- Facilitate Student-Teacher and Student-Student Interactions
- Offer more Constructive and Interactive activities
- Design frequent diagnostic and formative assessments
- Consider Inclusivity and diversity
- Respond to students' work and questions in a timely manner
- Receive frequent feedbacks about class
- Share resources



Thank You!

