

TABLE 1

In-person class activities (face to face), interventions used to replace them under Crisis Distance Education, and the objective of the replacement activities for a large, introductory-level biology course.

F2F activity	CDE replacement	Objective
Synchronous lectures	Synchronous video conference recorded for asynchronous viewing, professional videos, lecture recordings	Provide opportunities for content delivery, information sharing, question-and-answer opportunities, connecting with students, and schedule flexibility
"Clicker" case studies	Video case studies on EdPuzzle, TedED, and HHMI BioInteractive	Provide low-stakes, graded, and ungraded case study experiences to engage students with course content

F2F = Face to face

CDE = Crisis distance education

TABLE 2

The number of e-resources (N) and examples of e-resources in five categories of e-resources used in the transition of a large, introductory biology course to crisis distance education.

E-resource category	N	Examples
EdPuzzle Assignments	8	Plant Diversity, Plant Life Cycles, (Bozeman Science), Seven Million Years of Human Evolution (AMNH)
TedEd assignments	5	A Plant's Eye View of the World, How We See Color, Human Skin Color
HHMI BioInteractive	2	Fungicides and Bees, Search For The Mutated Gene
YouTube videos	8	Bioluminescence, Skin Color, Genes as Medicine

TABLE 3

Background information provided by study participants (N = 99).

Year in school N (%)		Major		Completed online course previously		Completed college-level, introductory biology course		Completed online college-level introductory biology course	
First-year	41.4%	Biology	74.8%	Yes	41.9%	Yes	86.8%	Yes	9.3%
Sophomore	40.4%	Microbiology	6.1%	No	58.1%	No	13.2%	No	90.7%
Junior	9.1%	Plant Biology	1.0%						
Senior	9.1%	Other	18.1%						

TABLE 4

Student satisfaction (N = 99) with transition, instructor/graduate teaching assistants access, and instructor/graduate teaching assistants communication during implementation of Crisis Distance Education.

Satisfaction category	N	Extremely dissatisfied	Slightly dissatisfied	Neither satisfied nor dissatisfied	Slightly satisfied	Extremely satisfied
Student satisfaction with transition	99	3%	11%	5%	37%	44%
Student satisfaction with instructor/GTA access	99	4%	7%	6%	32%	51%
Student satisfaction with instructor/GTA communication	99	3%	10%	5%	27%	55%

GTA = Graduate teaching assistants

CDE = Crisis Distance Education

TABLE 5

Mean percent (standard deviation) of students ($N = 99$) reporting different levels of completion for 27 e-resources in five categories.

Resource categories	Number of resources	Did not attempt % (SD)	Partially completed % (SD)	Mostly completed % (SD)	Completed % (SD)
EdPuzzle Assignments	8	1.38 ^a (0.43)	0.30 ^a (0.05)	1.23 ^a (0.93)	97.07 ^a (1.46)
TedEd assignments	5	5.67 ^a (2.24)	2.46 ^a (0.55)	0.24 ^a (0.55)	93.83 ^a (2.46)
HHMI BioInteractive	2	67.9 ^b (5.23)	4.32 ^b (0.87)	4.93 ^b (1.74)	22.84 ^b (2.60)
YouTube videos	8	54.78 ^b (6.82)	9.26 ^c (1.14)	8.95 ^c (1.58)	27.00 ^b (7.36)
Mean (SD)		26.67 (28.13)	3.75 (4.33)	4.03 (4.03)	65.54 (35.6)

Within columns, values followed by the same letter are not significantly different ($p < 0.05$).

TABLE 6

Mean percent (standard deviation) of students ($N = 99$) reporting amount learned for 17 e-resources in two categories that had at least 50% completion. Within columns, values followed by the same letter are not significantly different ($p < 0.05$).

Resource categories	Number of resources	Did not attempt	Far below average learned	Slightly below average learned	Average amount learned	Slightly above average learned	Far above average learned
EdPuzzle	8	1.51 (0.88)	3.55 (1.90)	11.75 (4.99)	35.68 (6.78)	32.75 (3.82)	14.82 (4.30)
TedEd	5	5.67 (2.24)	2.98 (1.07)	7.18 (5.55)	24.94 (3.65)	36.78 (2.38)	22.46 (4.78)
Mean (SD)		3.59 (2.94)	3.26 (0.40)	9.47 (3.23)	30.31 (7.59)	34.77 (2.85)	18.64 (6.50)