Lessons Learned during the Transition to Online Learning

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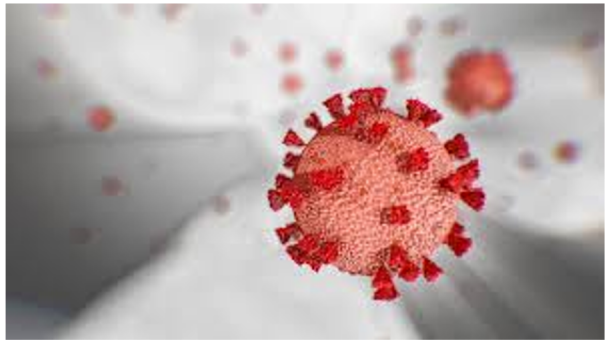
Background

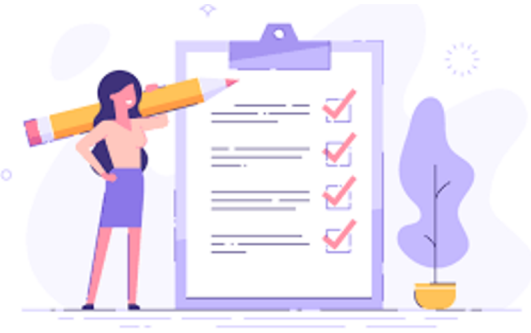


- The Coronavirus Pandemic led to abrupt switch to virtual learning in March 2020
- Only some faculty members in Human Nutrition, Foods, and Exercise (HNFE) at Virginia Tech had been training in teaching online
  - Those who had, were trained in asynchronous teaching only
- Faculty members were missing the pedagogy training and tools needed to teach exclusively online
- It was unknown to HNFE how we were doing as educators in this new remote environment

Background continued

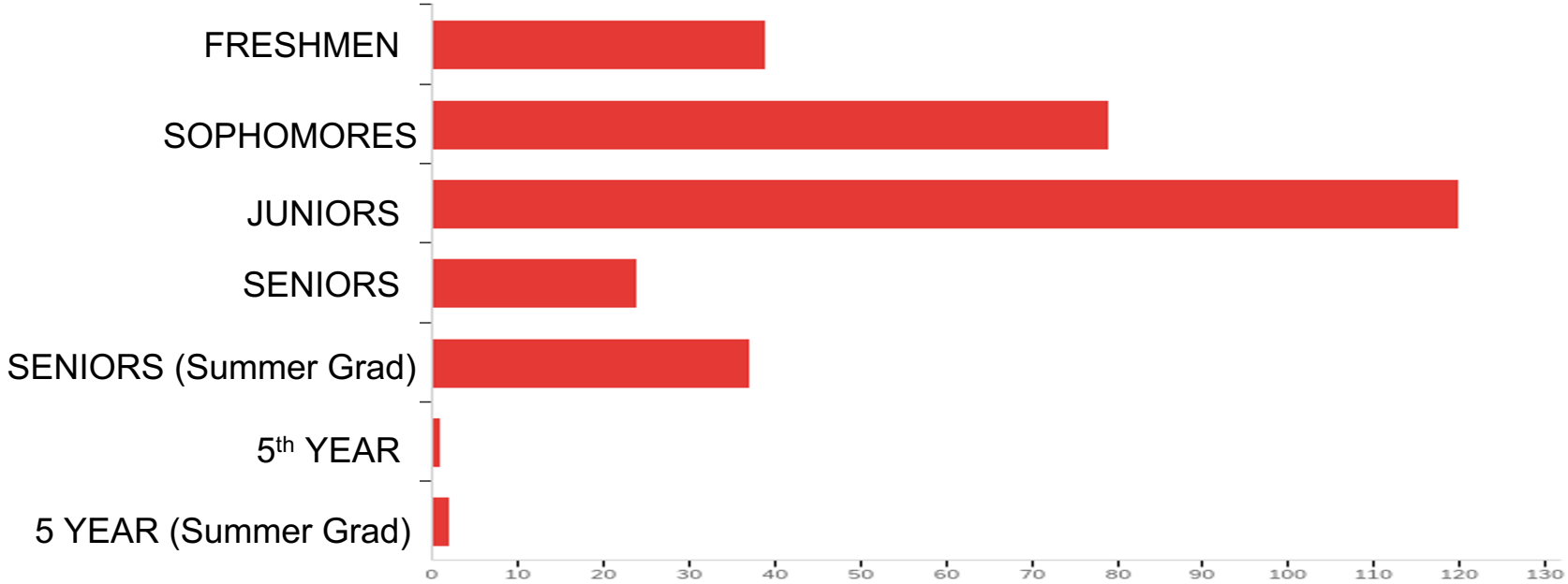
- The HNFE department desired to assess the student's perception on HNFE's transition using a survey, specifically to learn:
  - General demographics of the responders
  - Attitudes of virtual learning
  - How they interacted with the virtual learning
  - Positive & negative outcomes of to transition to virtual learning
  - Tools that were valuable to virtual learning & SSD accommodation adherence
  - Barriers to virtual learning- synchronous & asynchronous
  - Student motivation per HNFE class taken as measured by the MUSIC model (Jones, B 2009)

Methods



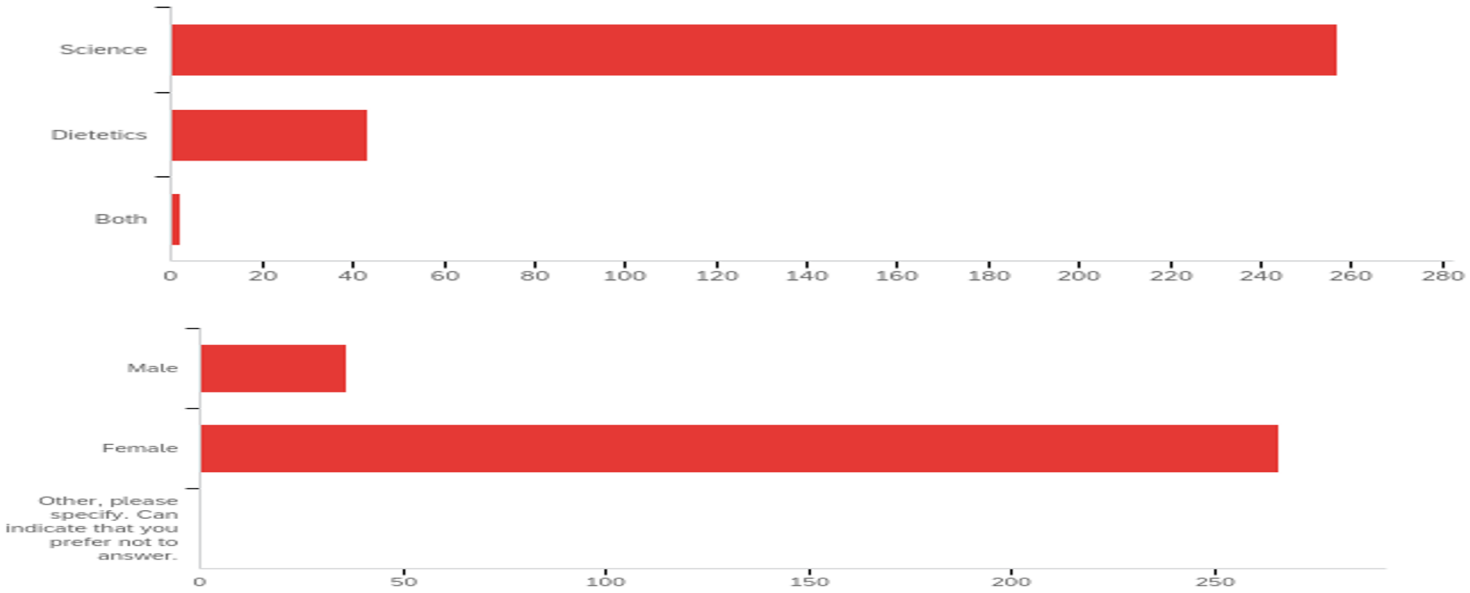
- 6 faculty members and 1 graduate student in HNFE, designed a survey using Qualtrics to assess the aims previously listed
- The survey was administered in the summer of 2020 and again in January 2021
  - The initial survey aimed at the transition in the Spring of 2020
  - The subsequent survey aimed at determining whether we as a department improved in our ability to deliver virtual learning
- 302 students completed the survey in the Summer of 2020
  - 20 students were randomly selected to receive a $25 to Amazon
- 229 students completed the survey in January 2021
  - 20 students were randomly selected to receive a $25 to Amazon

Results- Demographics Spring 2020



- Survey respondents were largely juniors and sophomores, followed by freshman and seniors

Results- Demographics Spring 2020

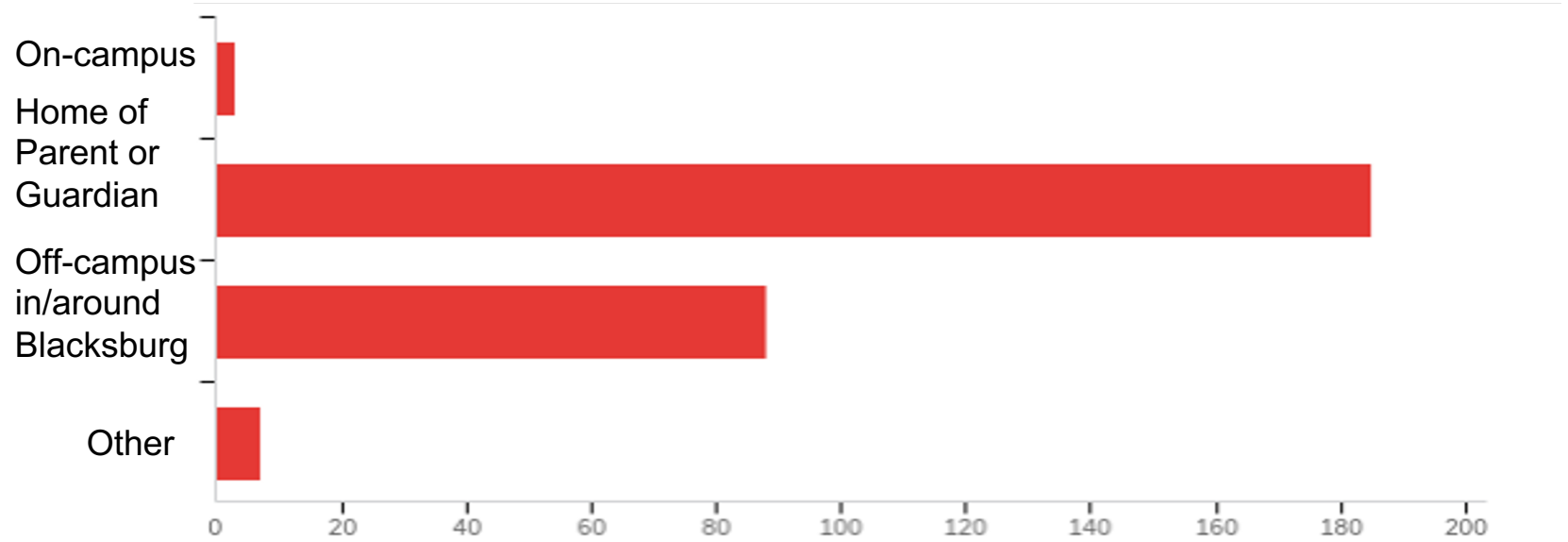


- Survey respondents were made up of:
  - 85% in the Science track
  - 15% in the Dietetics track
  - 88% female and 12% male

Results- Demographics Spring 2020

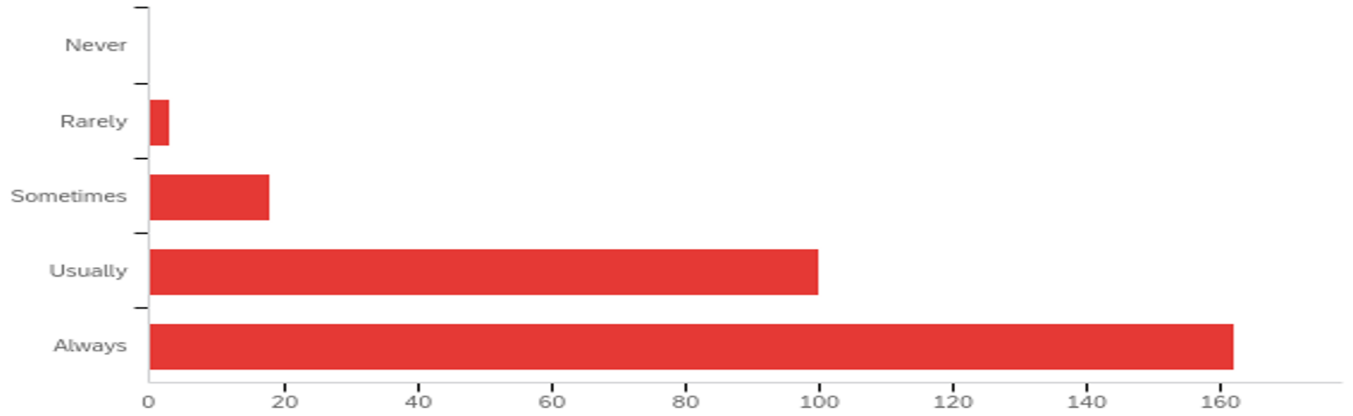
- Survey respondents were largely white (86.4%)
- 11% identified as First-generation
- 9.6% identified as a transfer student

Results- Location of Virtual Learning Spring 2020



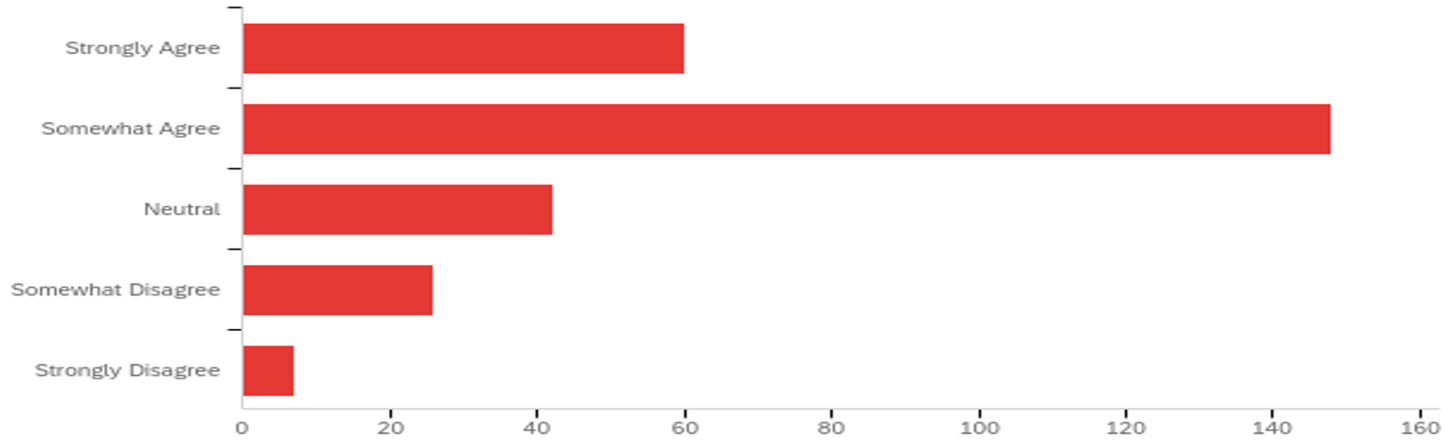
- 65.4% did their virtual learning at the home of a parent/guardian
- 31.1% Off campus- in and around Blacksburg
- 1.1% On campus
- 2.5% Other- mostly a combination of parents and off-campus in Blacksburg

Results- Internet Reliability Spring 2020



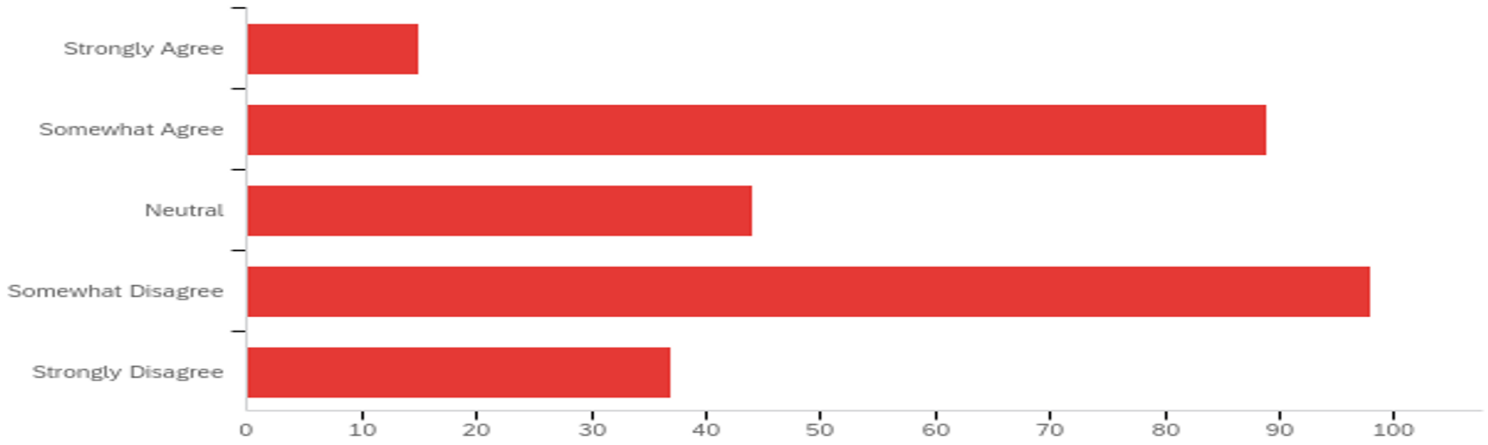
- 57.2% always had reliable access to the internet
- 35.3% usually did
- 6.4% sometimes did
- 1% rarely did

Results- Perception of Rigor Spring 2020



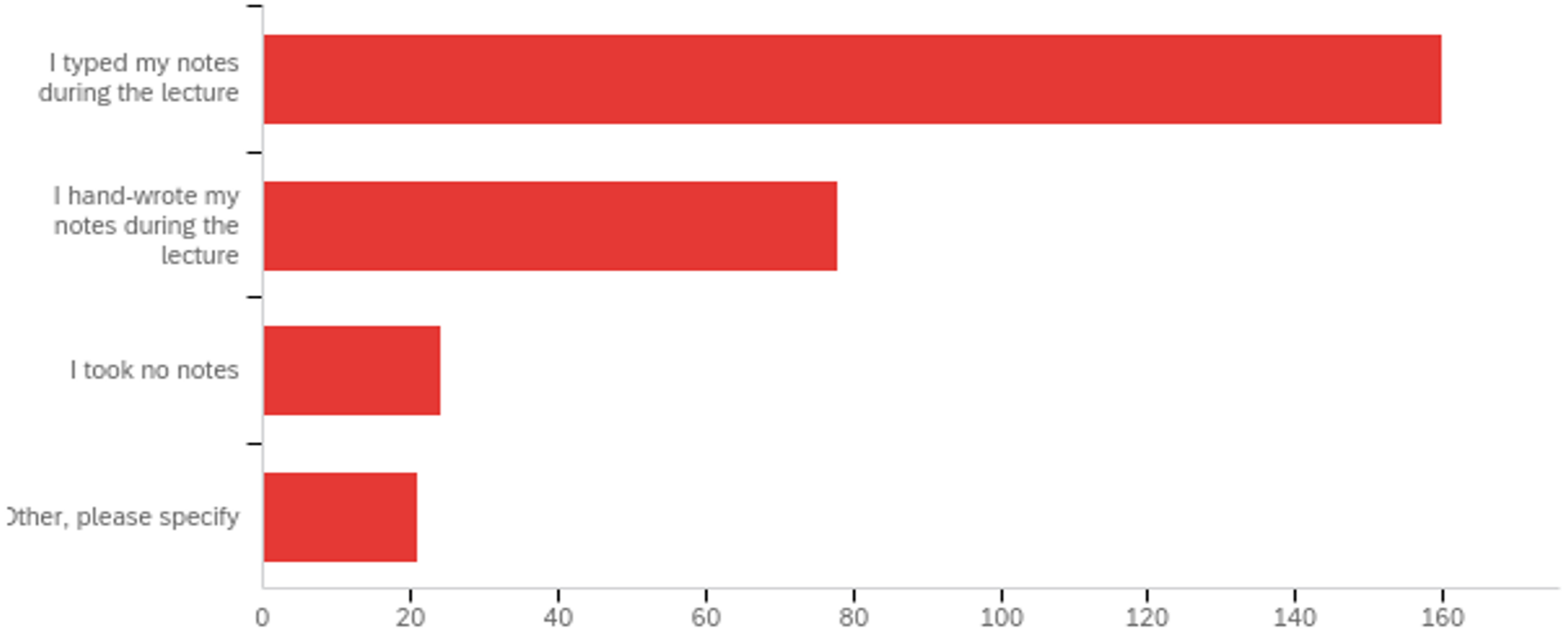
- 21.2% strongly agree that Spring 2020 should have had less work than they would have had in-person
- 53.3% Somewhat agree
- 14.8% were neutral
- 9.2% Somewhat disagreed
- 2.5% Strongly disagreed

Results- Perception of Rigor continued Spring 2020

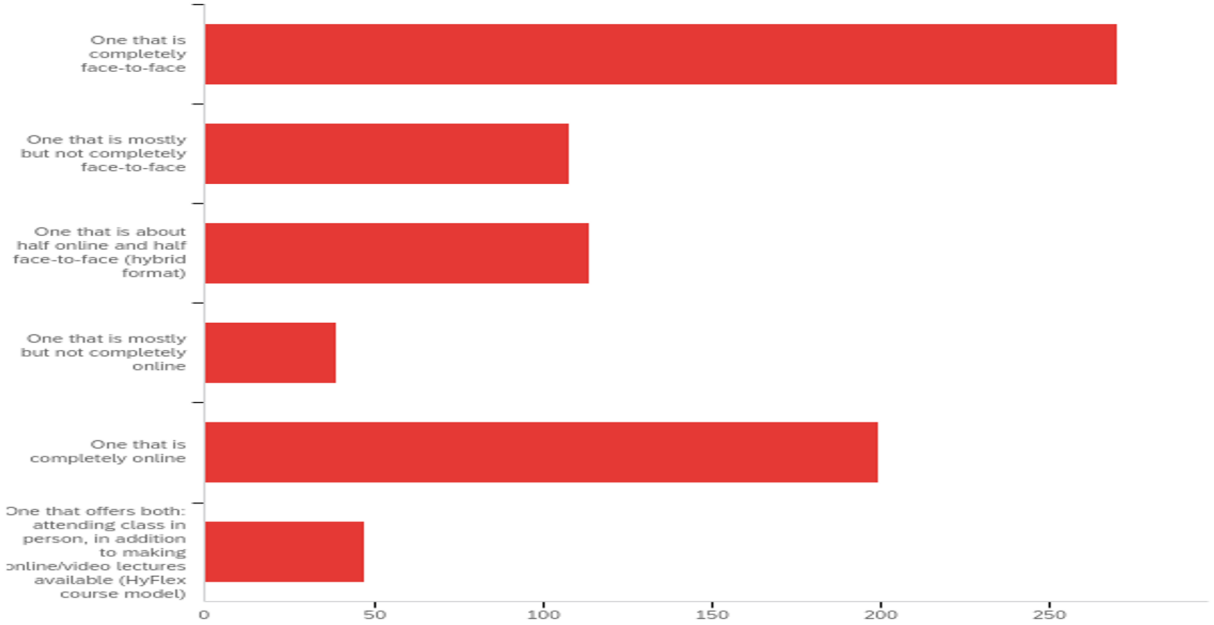


- 5.3% strongly agree that virtual learning should be easier than traditional face-to-face learning
- 31.5% Somewhat agree
- 15.5% were neutral
- 34.6% Somewhat disagreed
- 13.1% Strongly disagreed

Results- Lecture Interaction Spring 2020



Results- Experience with Virtual Learning Spring 2020



- 64.4% of students had never taken an online class, or one that only had minimal online content
- 30.6% of students had taken a class that was mostly online or all online
- 6% of students had taken a hybrid class- 50% online 50% in-person

Results- Attitudes on Virtual Learning Spring 2020

- Feedback when asked to reflect back on the transition compared to how they felt at the end of the Spring semester (Percentages are of those that left comments n= 152)
  - 52.6% mentioned that the shift in class format was stressful, until they got used to the new format
  - 16.4% mentioned that they needed to work on time management to adapt to the switch, which often time made them feel like the move gave them more autonomy
  - 4.6% mentioned that the switch led to a harder class or more class work
  - 13.8% mentioned that they preferred in person classes & 11.2% preferred the online classes
    - Of those that preferred online classes n=78
      - 28.2% felt they didn't learn very well- poor environment/focus
      - 26.9% adapted well and had a mostly positive experience
      - 15.4% had poor motivation once the classes moved online
      - 12.8% mentioned poor retention of course material
      - 10.2% mentioned that asking questions was difficult

Positive Outcomes from Spring 2020:

Positive grades	23
No	11
Positive Autonomy	76
Contain COVID	8
Yes	8
NA	4
Positive Family Time	11
Positive Teacher Interaction	6
Negative Outcomes	6

Results- Effective Tools Spring 2020

- Which tools were helpful? (out of 5- Very helpful (5), Somewhat helpful (4), Neutral (3), Somewhat not helpful (2), and Not helpful at all (1)):

Canvas	**4.51- helpful**
Voice-over Videos	**4.47- helpful**
Synchronous video streams	**3.94- somewhat helpful**
Zoom meetings	**3.93- somewhat helpful**
Break-out Rooms	**2.95- neutral**
Discussion Forums	**3.51- neutral/somewhat helpful**
Polling Apps	**3.48--neutral/somewhat helpful**
Other….	
· **Quizzes during class -5**	
· **More work- 1**	
· **Review sessions continued online from face to face- 5**	
· **Posted videos of labs- 4**	
· **Office hours offered synchronously -4**	
· **TopHat presentations – 5**	
· **TopHat- 4**	
· **Emailing- 2**	
· **Note guides- 5**	

Results- Preferred Mode of Delivery Spring 2020

- Face-to Face (67.4%; 209 responses)
  - Better learning environment, more focused/ keeps you awake, learned more in person, able to ask questions on material and on instructions for assignments
  - Class was slower paced than watching videos, more personal stories from Professor that related to the topic
  - Group activities/projects; Labs/ cooking; Oral presentations
  - Engaging Professor in person, build relationships with the professor; Work with the TAs
  - Meet guest speakers in person, see demonstrations in person
  - Firm schedule, accountability
  - Didn't have to worry about internet problems
- Hybrid (14.5%; 45 responses)
  - Liked some F2F contact to ask questions, helps to pay attention, interact with classmates, gain better understanding of the material; but liked having video lectures to watch/re-watch at own pace, work at own pace
- Online (18.1%; 56 responses)
  - Easier; Sleep-in, not so tired
  - Paid more attention b/c not distracted in big lecture class
  - Complete at own pace, manage my own time, complete it on own time-schedule, flexibility
  - Pause videos and re-watch; Participated more online
  - Could participate when not in town
  - Didn't have to race across campus to make it to class, not having to travel to campus

Results- Concerns for Synchronous learning Spring 2020

- Number of students mentioning each concern:
  - Distractions from friends, classmates, family, pets, etc. during class **100**
  - Lack of quiet or private place to attend class **77**
  - Reliable/stable internet connection on my end **53**
  - Unclear communications or expectations from instructors about attending class **32**
  - Issues related to taking tests (i.e., proctoring, time on tests) **31**
  - Confusion about how to use the video conference software or application for class **11**
  - A requirement to have my video on (not just my microphone) **9**
  - Attending class meetings as scheduled due to time zone differences **7**
  - Lack of live or closed captioning or ASL interpreters **4**
  - Attending class meetings as scheduled due to family or others needing to use shared technology **2**
  - Access to assistive technology hardware **1**/ Access to assistive technology software **1**

Results- Concerns for Asynchronous learning Spring 2020

- Number of students mentioning each concern:
  - Distractions from friends, classmates, family, pets, etc. during class- **92**
  - Lack of quiet or private place to attend class- **64**
  - Reliable/stable internet connection on my end- **44**
  - Attending class meetings as scheduled due to family or others needing to use shared technology- **36**
  - Issues related to taking tests (i.e., proctoring, time on tests)- **35**
  - Unclear communications or expectations from instructors about attending class- **28**
  - Confusion about how to use the video conference software or application for class- **13**
  - A requirement to have my video on (not just my microphone)- **11**
  - Lack of live or closed captioning or ASL interpreters- **10**
  - Attending class meetings as scheduled due to time zone differences- **7**
  - Access to assistive technology software- **6/** Access to assistive technology hardware- **3**

Results- The Music Model Spring 2020

- The MUSIC model of academic motivation (https://www.themusicmodel.com) is a validated survey (Jones, Byrnes, & Jones, 2019; Jones & Skaggs, 2016; Pace, Ham, Poole, & Wahaib, 2016; Anderson, 2020) which identifies five key components on classroom design that can guide instructors to identify areas to improve student motivation within the classroom (Jones, 2009)
- The five components are eMpowerment, Usefulness, Success, Interest, and Caring (MUSIC)
  - The questions in the **eMpowerment** section assess whether the student has choices, control, and opportunities
  - The questions in the **Usefulness** section assess how the material is related to the student's future careers, goals, and the real-world
  - The questions in the **Success** section assess whether assignments had clear instructions, were manageable, and whether students received authentic feedback
  - The questions in the **Interest** section assess whether the instructor was able to make the subject relevant, surprising, and engaging, and whether the student demonstrated enthusiasm in return
  - The **Caring** section assesses whether the instructor showed concern for the student, valued their opinions, made accommodations if possible, and whether they fostered an inclusive classroom experience for the students
- Questions asked are coded for one of the five components and the mean score for all questions within each component is reported, plus or minus the standard deviation. Each question was based on a 6-point weighted scale- Strongly Agree (6), Agree (5), Somewhat Agree (4), Somewhat Disagree (3), Disagree (2), and Strongly Disagree (1)

eMpowerment Spring 2020

	Empowerment						
Row Labels	**Count of**	**Count of**	**Count of**	**Count of**	**Count of**	**Count of**	***Average***
1004- Foods, Nutrition, and Exercise	8	10	8	8	10	14	*4.37*
2004- Professional Dietetics	11	10	11	11	13	15	*3.69*
2014- Nutrition Across the Life Span	23	24	23	22	27	39	*4.35*
2264- Exercise Leadership: Personal Training	4	3	5	5	5	6	*4.70*
2314- Active Transportation for Health	3	3	3	3	3	3	*4.07*
2334- Intro to Integrative Health	10	8	6	7	7	12	*3.08*
2664- Behavior Theory in Health Promotion	7	3	5	4	7	8	*4.33*
2804- Exercise & Health	27	27	25	25	24	34	*4.03*
2824- Athletic Injuries	12	13	12	13	13	16	*4.04*
3024- Science of Food Prep Lab	5	5	6	4	5	7	*4.61*
3034- Methods of Human Health Assessment	20	16	18	19	18	21	*3.53*
3224- Communicating with Food	1	2	1	1	1	2	*2.40*
3804- Exercise Physiology	24	23	21	22	21	32	*4.26*
4004- Seminar- Anderson	6	4	6	7	6	9	*4.11*
4004- Seminar- Craige	2	2	2	2	2	2	*4.30*
4004- Seminar- Hulver	1	1		1		2	*4.00*
4004- Seminar- McMillan	3	2	3	2	2	4	*4.13*
4026- Metabolic II	23	23	22	19	23	30	*3.86*
4126- Medical Nutrition Therapy II	3	3	3	3	3	3	*3.80*
4174- Nutrition & Physical Performance	7	5	5	5	7	9	*4.46*
4224- Alternative & Complementary Nutrition Therapies	1	1	1	1	1	1	*4.40*
4646- Applications in Nutrition Counseling		1	1		1	1	*4.67*
4664- Health Counseling	27	28	27	28	27	33	*4.08*
4754- Advanced Anatomy and Pathophysiology			1	2	2	6	*5.00*
4774- Advanced Kinesiology	3	4	3	4	3	6	*4.35*
4774- CURE			1		1	1	*5.00*
4774- Medical Weight Management		1			1	1	*4.50*
4844- Exercise & Neuromuscular Performance	1	1	2	1	1	2	*4.50*
(blank)							
Grand Total	**232**	**223**	**221**	**219**	**234**	**319**	***4.06***

- Listed are all the HNFE classes offered in the Spring
- The Count are the number of students that answered the 6 questions that make up the eMpowerment score
  - There are some classes that did not generate a number for a category because the n was 1 and they only answered 1 question
- The Likert score is listed last & averaged at the bottom
- An average of 4.06 indicates that overall they “somewhat agreed” that they were eMpowered

Usefulness Spring 2020

	Usefulness						
Row Labels	**Count of**	**Count of**	**Count of**	**Count of**	**Count of**	**Count of**	***Average***
1004- Foods, Nutrition, and Exercise	9	8	5	6	6	14	*4.52*
2004- Professional Dietetics	4	4	3	5	1	15	*4.40*
2014- Nutrition Across the Life Span	15	12	13	11	11	39	*4.33*
2264- Exercise Leadership: Personal Training	5	5	3	3	4	6	*4.84*
2314- Active Transportation for Health	3	3	2	2	2	3	*2.83*
2334- Intro to Integrative Health	12	11	12	12	11	12	*4.24*
2664- Behavior Theory in Health Promotion	6	7	7	7	7	8	*4.90*
2804- Exercise & Health	25	24	16	18	18	34	*4.49*
2824- Athletic Injuries	14	13	14	13	14	16	*4.58*
3024- Science of Food Prep Lab	6	4	3	4	4	7	*4.73*
3034- Methods of Human Health Assessment	15	13	13	15	14	21	*4.49*
3224- Communicating with Food						2	######
3804- Exercise Physiology	20	17	17	16	16	32	*4.69*
4004- Seminar- Anderson	3	3	4	3	4	9	*4.55*
4004- Seminar- Craige	2	2	2	2	2	2	*5.00*
4004- Seminar- Hulver	2	2	1	2	2	2	*4.50*
4004- Seminar- McMillan	2	2	2	2	2	4	*3.90*
4026- Metabolic II	22	20	21	19	19	30	*3.75*
4126- Medical Nutrition Therapy II						3	######
4174- Nutrition & Physical Performance	3	3	3	2	2	9	*4.89*
4224- Alternative & Complementary Nutrition Therapies			1		1	1	*2.00*
4646- Applications in Nutrition Counseling						1	######
4664- Health Counseling	23	23	24	23	22	33	*4.46*
4754- Advanced Anatomy and Pathophysiology	1	1	1			6	*5.00*
4774- Advanced Kinesiology	3	4	3	4	3	6	*4.45*
4774- CURE						1	######
4774- Medical Weight Management						1	######
4844- Exercise & Neuromuscular Performance	1	1	1	1	1	2	*5.00*
(blank)							
Grand Total	**196**	**182**	**171**	**170**	**166**	**319**	***4.41***

- Usefulness was the average of 6 questions
- Usefulness averaged a 4.41 or a mixture of “Somewhat agree” and “Agree”

Success Spring 2020

Row Labels	Count of	Count of	Count of	Count of	*Average*
1004- Foods, Nutrition, and Exercise	9	10	8	8	*4.60*
2004- Professional Dietetics	6	7	4	5	*4.61*
2014- Nutrition Across the Life Span	15	15	11	15	*4.67*
2264- Exercise Leadership: Personal Training	3	4	3	3	*4.94*
2314- Active Transportation for Health	3	3	3	3	*4.50*
2334- Intro to Integrative Health	8	9	7	8	*3.71*
2664- Behavior Theory in Health Promotion	4	5	4	4	*4.40*
2804- Exercise & Health	26	27	23	24	*4.31*
2824- Athletic Injuries	10	11	9	11	*4.34*
3024- Science of Food Prep Lab	4	5	3	4	*4.93*
3034- Methods of Human Health Assessment	18	17	15	18	*4.13*
3224- Communicating with Food	1	1	1	1	*4.25*
3804- Exercise Physiology	13	18	14	16	*4.72*
4004- Seminar- Anderson	4	4	3	4	*4.50*
4004- Seminar- Craige	2	2	2	2	*5.00*
4004- Seminar- Hulver	1	1	1	1	*2.50*
4004- Seminar- McMillan	1				*5.00*
4026- Metabolic II	25	22	18	21	*3.39*
4126- Medical Nutrition Therapy II	2	2	2	2	*5.00*
4174- Nutrition & Physical Performance	2	2	2	2	*5.00*
4224- Alternative & Complementary Nutrition Therapies	1	1	1	1	*4.50*
4646- Applications in Nutrition Counseling					*#######*
4664- Health Counseling	23	22	18	22	*4.73*
4754- Advanced Anatomy and Pathophysiology	1	4		1	*5.00*
4774- Advanced Kinesiology	3	2	2	3	*5.00*
4774- CURE	1	1	1	1	*5.00*
4774- Medical Weight Management					*#######*
4844- Exercise & Neuromuscular Performance	1	1	1	1	*3.25*
(blank)					
Grand Total	**187**	**196**	**156**	**181**	***4.37***

- Success was the average of 4 questions
- Success averaged a 4.37 or a mixture of “Somewhat agree” and “Agree”

Interest Spring 2020

Row Labels	Count of	Count of	Count of	Count of	Count of	*Average*
1004- Foods, Nutrition, and Exercise	7	8	8	8	8	*4.14*
2004- Professional Dietetics	6	9	10	8	8	*3.95*
2014- Nutrition Across the Life Span	20	19	21	21	18	*4.21*
2264- Exercise Leadership: Personal Training	4	5	5	5	5	*4.49*
2314- Active Transportation for Health			1			*2.00*
2334- Intro to Integrative Health	9	10	11	9	11	*3.05*
2664- Behavior Theory in Health Promotion	7	7	5	3	7	*4.18*
2804- Exercise & Health	23	22	23	22	25	*4.03*
2824- Athletic Injuries	15	11	13	12	13	*4.09*
3024- Science of Food Prep Lab	4	3	3	3	5	*4.56*
3034- Methods of Human Health Assessment	16	18	13	16	15	*4.16*
3224- Communicating with Food	1	1	1		2	*4.63*
3804- Exercise Physiology	23	20	20	21	21	*4.45*
4004- Seminar- Anderson	6	5	5	6	6	*4.42*
4004- Seminar- Craige	2	1	1	1	2	*5.00*
4004- Seminar- Hulver	2	1	2	1	2	*3.80*
4004- Seminar- McMillan	3	3	3	3	3	*3.28*
4026- Metabolic II	16	20	17	23	16	*3.19*
4126- Medical Nutrition Therapy II	1	1	2	1	2	*4.75*
4174- Nutrition & Physical Performance	4	3	3	3	3	*4.60*
4224- Alternative & Complementary Nutrition Therapies	1	1	1	1	1	*1.40*
4646- Applications in Nutrition Counseling						######
4664- Health Counseling	27	24	22	23	27	*3.89*
4754- Advanced Anatomy and Pathophysiology	2	2	2	2	1	*3.55*
4774- Advanced Kinesiology	3	3	3	3	2	*4.64*
4774- CURE						######
4774- Medical Weight Management						######
4844- Exercise & Neuromuscular Performance	1		1		1	*3.33*
(blank)						
Grand Total	**203**	**197**	**196**	**195**	**204**	***3.99***

- Interest was the average of 5 questions
- Interest averaged a 3.99 indicating “Somewhat agree”

Caring Spring 2020

Row Labels	Count of	Count of	Count of	Count of	Count of	Count of	Average of
1004- Foods, Nutrition, and Exercise	2	2	2	2	2	2	*3.20*
2004- Professional Dietetics	3	2	1				*4.00*
2014- Nutrition Across the Life Span	2	1	2	1			*4.00*
2264- Exercise Leadership: Personal Training							######
2314- Active Transportation for Health							######
2334- Intro to Integrative Health	7	6	5	3	3	2	*3.44*
2664- Behavior Theory in Health Promotion							######
2804- Exercise & Health	6	8	4	1		3	*3.73*
2824- Athletic Injuries	5	4	6	1		4	*3.87*
3024- Science of Food Prep Lab							######
3034- Methods of Human Health Assessment	11	9	11	4	4	8	*3.70*
3224- Communicating with Food							######
3804- Exercise Physiology	3	3	2	1		2	*3.78*
4004- Seminar- Anderson	1	1	1	1	1	1	*3.00*
4004- Seminar- Craige							######
4004- Seminar- Hulver	1	1	1	1	1	1	*4.00*
4004- Seminar- McMillan	1		1			1	*3.50*
4026- Metabolic II	14	14	14	10	9	13	*2.96*
4126- Medical Nutrition Therapy II							######
4174- Nutrition & Physical Performance	1					1	*4.00*
4224- Alternative & Complementary Nutrition Therapies	1	1			1	1	*2.50*
4646- Applications in Nutrition Counseling							######
4664- Health Counseling	5	2	4			1	*4.00*
4754- Advanced Anatomy and Pathophysiology							######
4774- Advanced Kinesiology			1				*4.00*
4774- CURE							######
4774- Medical Weight Management							######
4844- Exercise & Neuromuscular Performance			1		1	1	*4.00*
(blank)							
Grand Total	**63**	**54**	**56**	**25**	**22**	**41**	***3.54***

- Caring was the average of 6 questions
- Participation in these questions dropped by 75% compared to the other MUSIC Model questions answered
- Caring averaged a 3.54 indicating “Somewhat agree” and “Somewhat disagree”

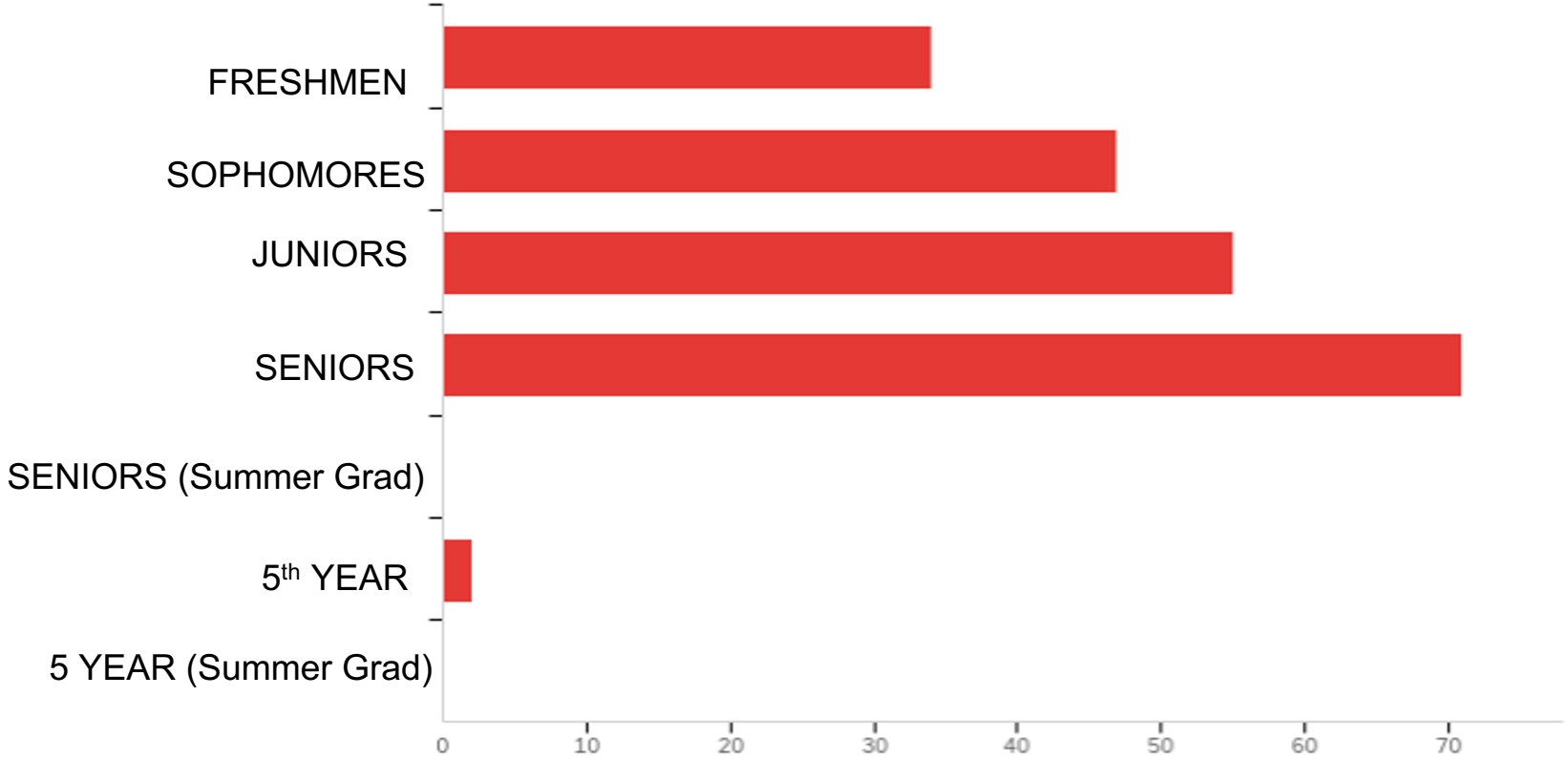
MUSIC Model Summary Spring 2020

- Overall for the department, we were highest in Usefulness and Success with a "somewhat agree” to “agree“ rating
- For eMpowerment and Interest, we were at a “somewhat agree”
- Concerning, was the Caring rating at a “somewhat agree” to “somewhat disagree”
  - Could also be because of survey fatigue, in that this is the section with the least amount of answers
  - But this gives a direction where we (HNFE) could spend energy on in the fall- making sure all students are feeling cared for

Intervention

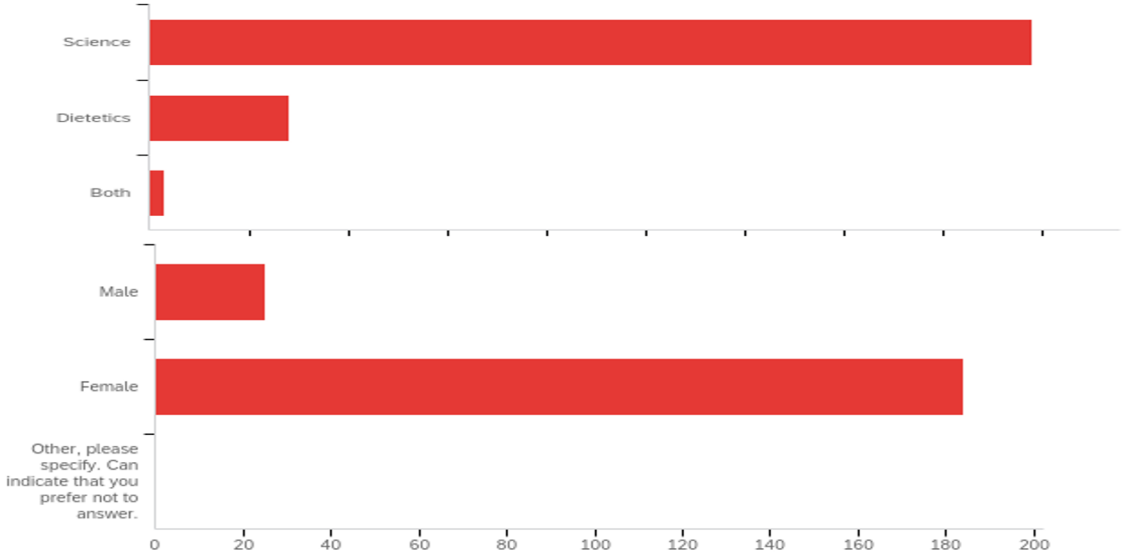
- Survey results were shared with all Faculty and talked through at the August Faculty Meeting
- The Caring category was highlighted as an area for improvement
- The survey was re-tooled to make it shorter and reduce survey fatigue
- Students received and re-took (or took for the 1st time) the survey in January 2021

Results- Demographics Fall 2020



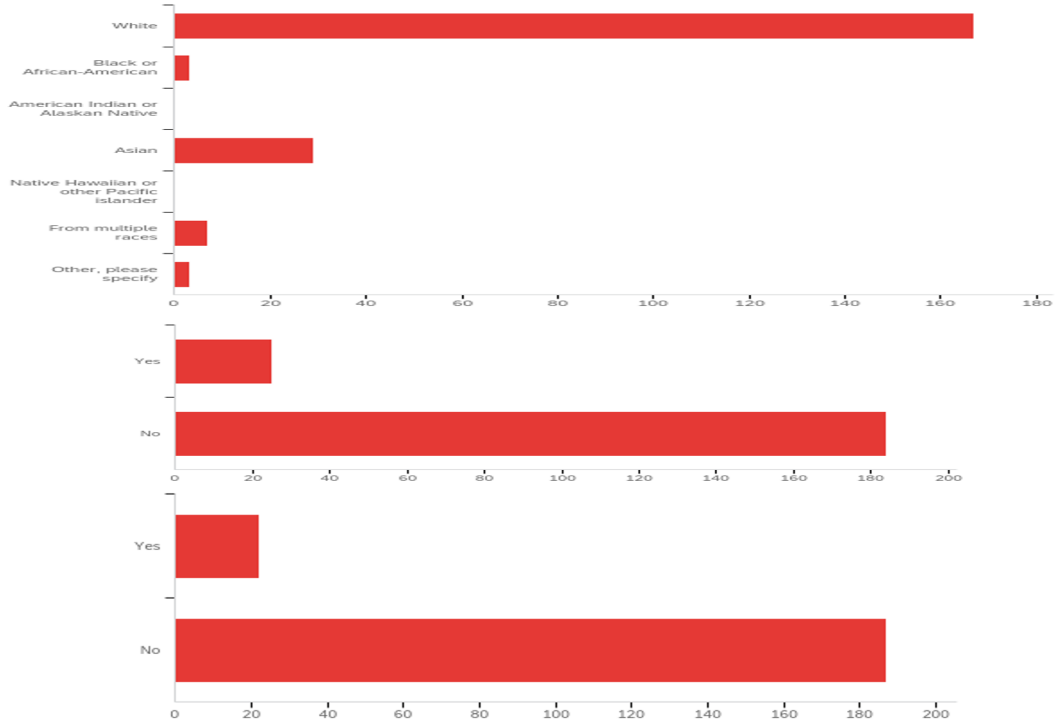
- Survey respondents were largely seniors, followed by juniors, then sophomores, then freshman
  - Freshman would not have completed the 1st survey
  - This data shows that a lot of the juniors that probably completed the first survey, also completed this one as seniors

Results- Demographics Fall 2020



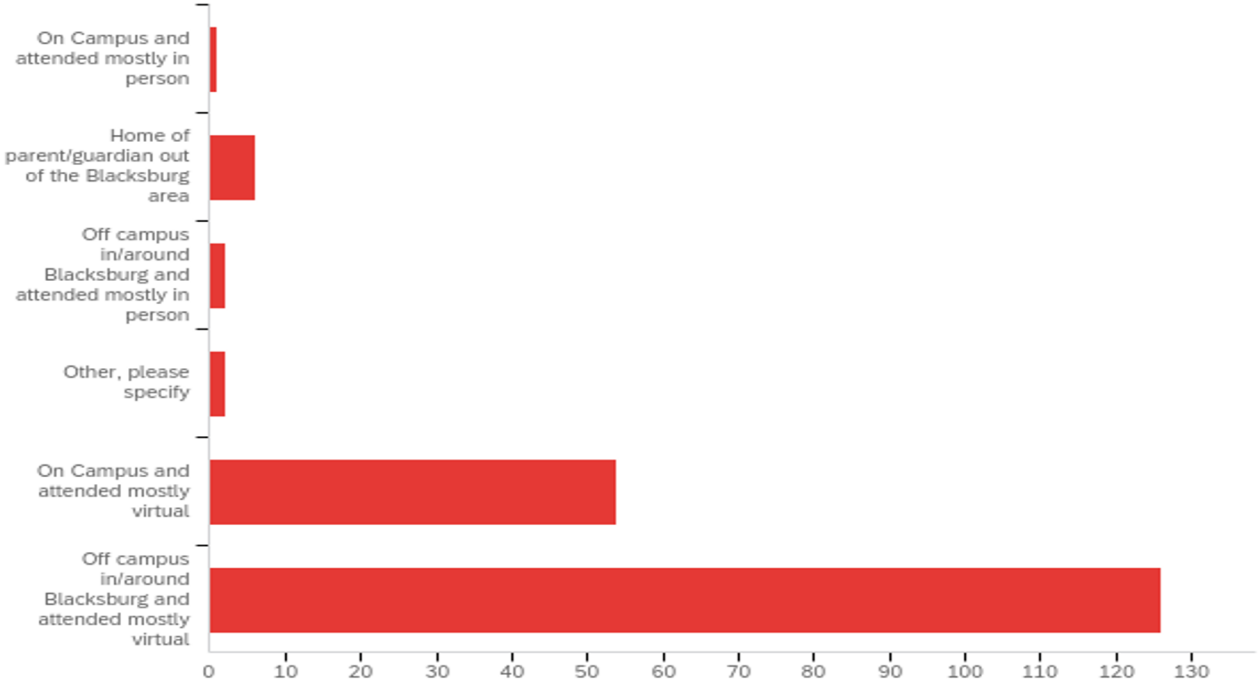
- Survey respondents were made up of:
  - 85.2% in the Science track
  - 13.4% in the Dietetics track
  - 1.4 % both tracks- new to 2nd survey
    - Data for tracks is very similar
  - 88% female and 12% male- same as the 1st survey

Results- Demographics Fall 2020



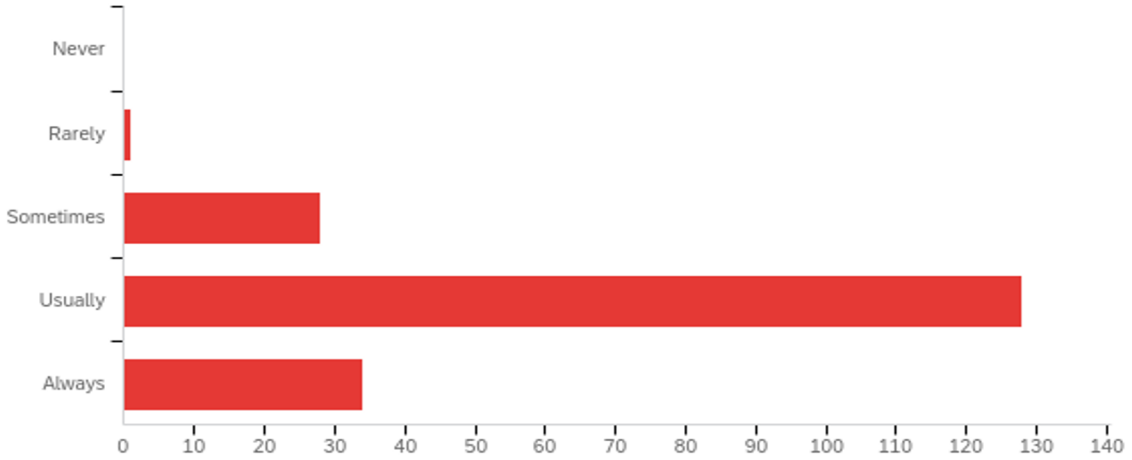
- Survey respondents were largely white (79.6%)
  - 5% less that identify as white than the 1st survey
  - Asian rose from 7% to 13.9%
- 12% identified as First-generation compared to 11% from the 1st survey
- 10.5% identified as a transfer student compared to 9.6% in the 1st survey

Results- Location & interaction with Virtual Learning Fall 2020



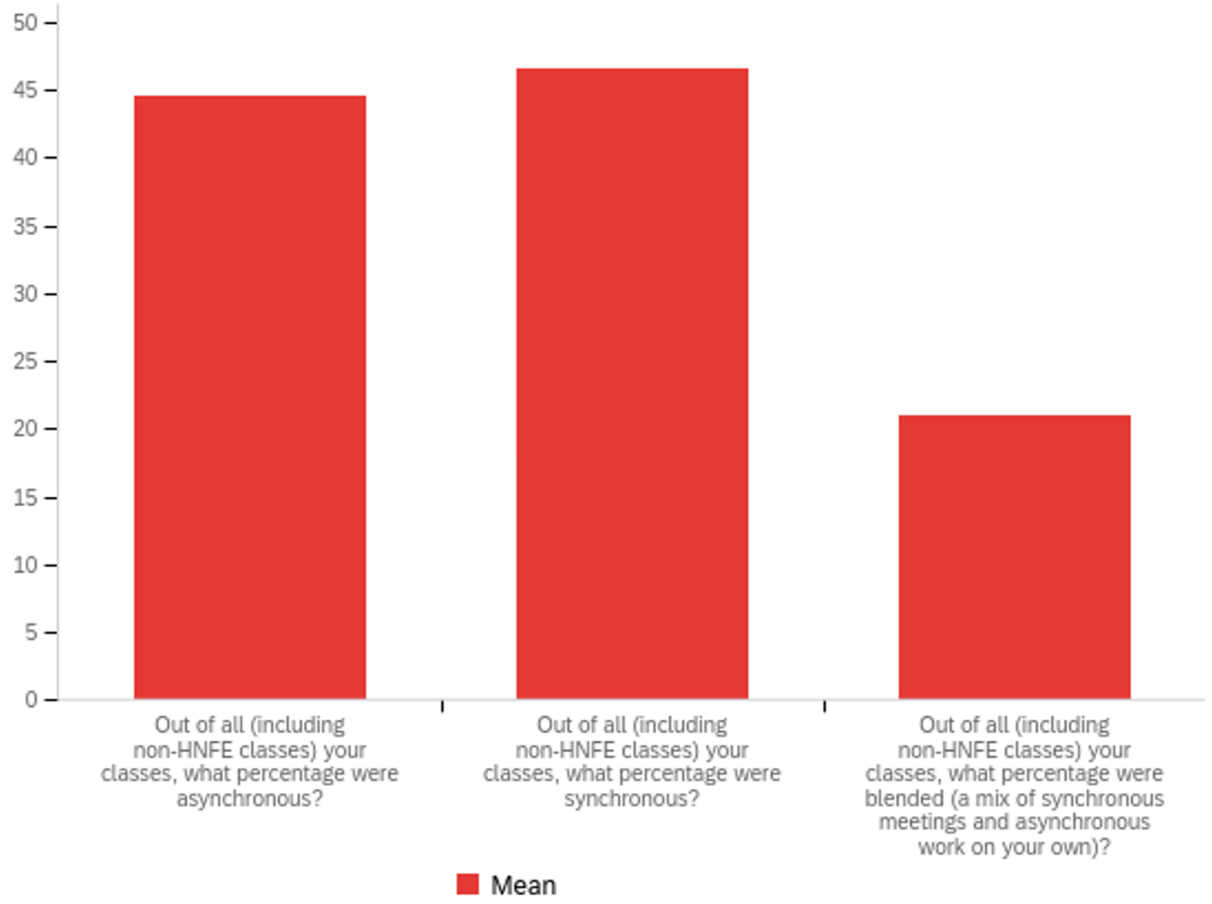
- Question was re-tooled to see the interaction between location & interaction with learning
  - 67% were off-campus in Blacksburg- 66% attending virtually and 1% attending in person; compared to 31.1% in the first survey
  - 29% were on-campus- 28.3% attending virtually & 0.5% attending in person; compared to 1.1% in the first survey
  - 3.1% did their virtual learning at the home of a parent/guardian; compared to 65.4% in the first survey
  - 1% Other- mostly a combination of parents and off-campus in Blacksburg; compared to 2.5% in the first survey

Results- Internet Reliability Fall 2020



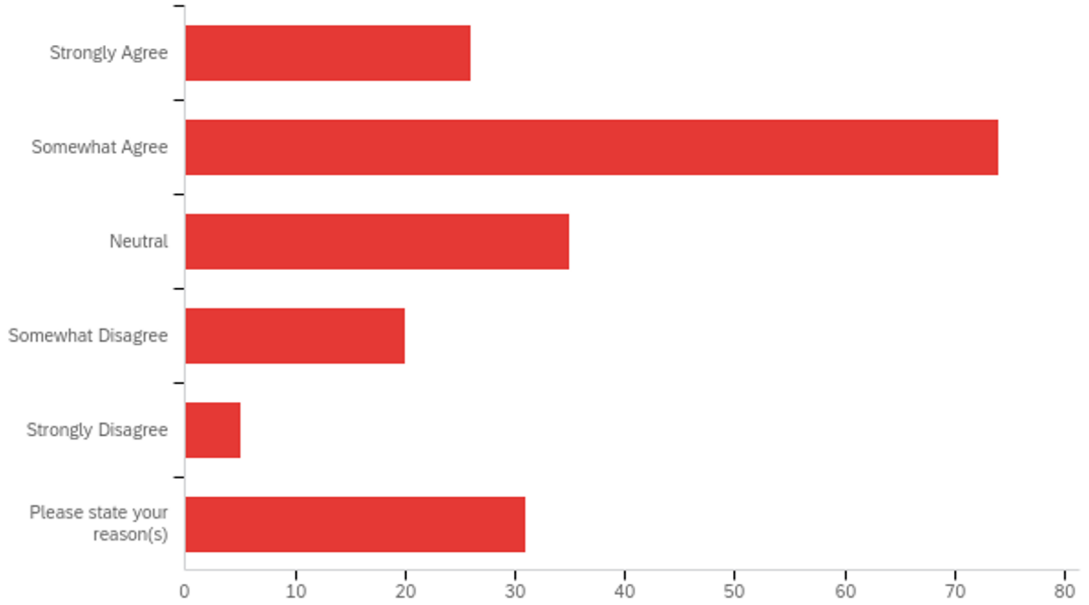
- 17.8% always had reliable access to the internet
  - Compared to 57.2% in the first survey- could be better internet at their parent's house
- 67% usually did; compared to 35.3% in the first survey
- 14.7% sometimes did; compared to 6.4% in the first survey
- 0.5% rarely did compared to 1%
- Internet reliability was more of a problem in the Fall 2020 semester than after the transition in the Spring 2020 semester

Results- Synchronous vs Asynchronous Fall 2020 (New Question)



- Average of all participant's perceptions of their Fall 2020 classes
  - 44.6% were Asynchronous
  - 46.6% were Synchronous
  - 20.9% were Blended

Results- Perception of Rigor Fall 2020

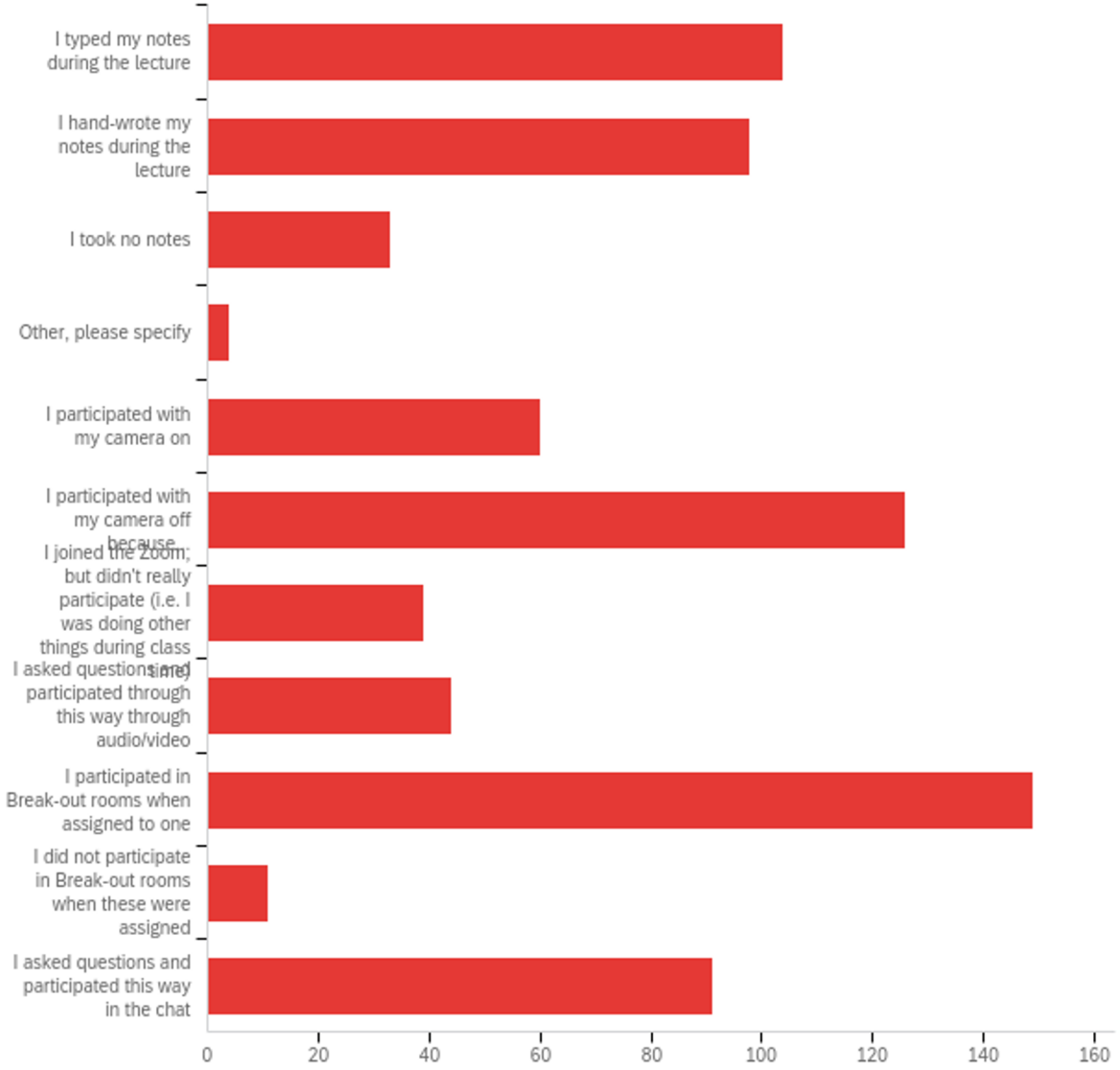


- 13.6% compared to 5.3% strongly agree that virtual learning should be easier than traditional face-to-face learning
- 38.74% compared to 31.5% Somewhat agree
- 18.32% compared to 15.5% were neutral
- 10.5% compared to 34.6% Somewhat disagreed
- 2.6% compared to 13.1% Strongly disagreed
    - There was a shift towards the belief that virtual learning should be less rigor than face-to-face

Feedback on Rigor- Fall 2020

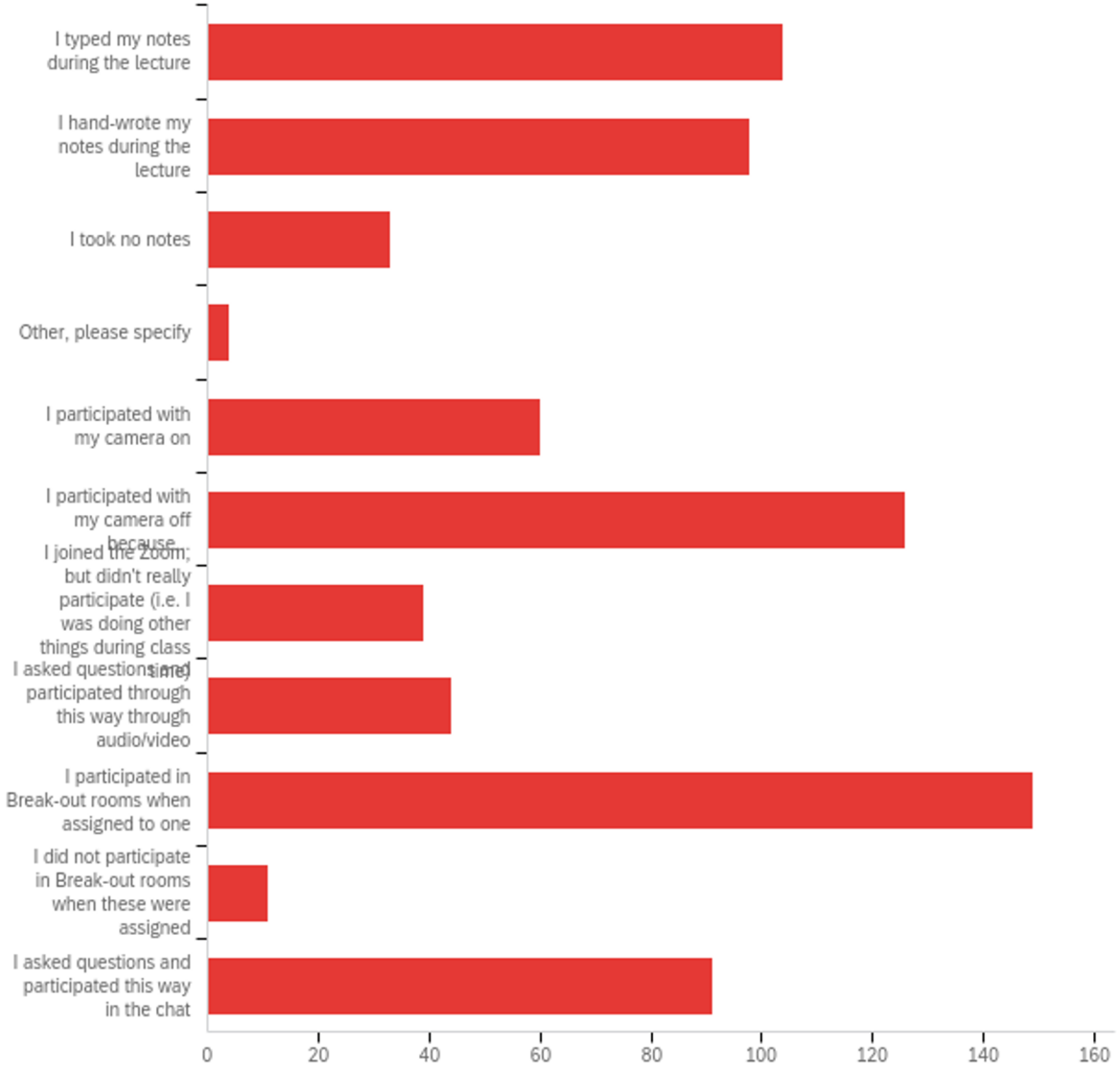
- 31 comments encompassing these themes:
  - Assignments should be better adapted for one type of learning or the other
  - Increased self-learning, so less rigor should be required
    - Harder to understand the material, harder to focus
    - Harder to get help
  - Perception that some professors added more work/thought students had more time
  - Internet reliability issues/mental health issues get in the way of learning

Results- Lecture Interaction Fall 2020



- Question was re-tooled to address the Zoom environment- camera, breakout rooms, chat
- 43.5% compared to 56.5% typed notes during lectures (synchronous or asynchronous)
- 41% compared to 27.6% hand-wrote notes
- 13.8% compared to 8.5% took no notes
- 1.7% compared to 7.4% other

Results- Lecture Interaction continued Fall 2020



- 32.2% participated in Zoom with their camera on, 67.8% with their camera off
- 39 students indicated that they joined via Zoom but did not participate
- 44 students indicated that they asked questions through audio while 91 indicated they asked questions through the chat
- When breakout rooms were assigned, 93.1% participated, while 6.9% left the Zoom

Reasons for not participating with the camera on while Zooming

- 97 comments encompassing these themes:
  - Professor didn’t require or requested them off
  - Felt uncomfortable/ self-conscious
  - Others did not have their cameras on
  - Multi-tasking while during class
  - Easier to focus
  - Still in bed/ environment was distracting (i.e. messy, roommates)/ not presentable for class
  - Internet worked better
  - Large lectures/ too many people watching

Results- Effective Tools Fall 2020

- Which tools were helpful? (out of 5- Very helpful (5), Somewhat helpful (4), Neutral (3), Somewhat not helpful (2), and Not helpful at all (1)):

Canvas	4.64- helpful- a bit higher than Spring (4.51)
Voice-over Videos	4.12- somewhat helpful- lower than Spring (4.47)
Synchronous video streams	3.98- somewhat helpful- same as Spring (3.94)
Zoom meetings	4.1- somewhat helpful- a bit higher than the Spring (3.93)
Break-out Rooms	2.57- neutral/somewhat not helpful- lower than the Spring (2.95)
Discussion Forums	3.00- neutral- lower than the Spring (3.51)
Polling Apps	3.52--neutral/somewhat helpful- same as the Spring (3.48)
Other….	
· Flexible office hours	
· Email (2)	
· Note Guides	
· Class recordings	
· Timed tests	
· Kahoots	
· Quizzes	
· Piazza	
· Textbook	
· We had small group reviews with Tas	

Results- Concerns for Synchronous learning Fall 2020

- Number of students mentioning each concern:
  - Distractions from friends, classmates, family, pets, etc. during class **124**
  - Lack of quiet or private place to attend class **92**
  - Reliable/stable internet connection on my end **87**
  - Issues related to taking tests (i.e., proctoring, time on tests) **77** ↑1 place
  - Unclear communications or expectations from instructors about attending class **63** ↓ 1 place
  - A requirement to have my video on (not just my microphone) **33** ↑1 place
  - Attending class meetings as scheduled due to family or others needing to use shared technology **21** ↑1 place
  - Confusion about how to use the video conference software or application for class **19** ↓ 2 places
  - Lack of live or closed captioning or ASL interpreters **10**
  - Access to assistive technology hardware **2**/ Access to assistive technology software **2** ↑1 place
  - Attending class meetings as scheduled due to time zone differences **1** ↓ 1 place

Results- Concerns for Asynchronous learning Fall 2020

- Number of students mentioning each concern:
  - Distractions from friends, classmates, family, pets, etc. during class- **82**
  - Unclear communications or expectations from instructors about attending class- **66** ↑3 places
  - Reliable/stable internet connection on my end- **56**
  - Issues related to taking tests (i.e., proctoring, time on tests)- **54** ↑1 place
  - Lack of quiet or private place to attend class- **51** ↓ 3 places
  - Confusion about how to use the video conference software or application for class- **21** ↑1 place
  - A requirement to have my video on (not just my microphone)- **14** ↑1 place
  - Attending class meetings as scheduled due to family or others needing to use shared technology- **11** ↓ 4 places
  - Lack of live or closed captioning or ASL interpreters- **11**
  - Attending class meetings as scheduled due to time zone differences- **4**
  - Access to assistive technology software- **3/** Access to assistive technology hardware- **0**

Overall comparison feelings from Fall 2020 to Spring 2020

- 182 responses
- Positives:
  - Improved perception of online learning: 68
  - Adapted: 32
  - Better teacher preparedness: 21
  - More Disciplined: 19
  - More Flexibility: 11
  - Being at VT helped: 10
- Student Challenges: 8
  - Burned out: 3
  - Struggled with self-teaching: 2
  - Struggled with setting learning schedule and deadlines: 2
  - Less autonomy: 1

Overall comparison feelings from Fall 2020 to Spring 2020 continued

- Negatives:
  - More difficult to succeed in classes: 39
  - More distracted: 10
  - More work: 9
  - Teacher’s don’t consider student’s challenges: 5
  - Poor teacher/course preparation: 4
  - Harder to learn: 4
  - Feel isolated from other students: 2
  - Poor Learning environment (poor wifi): 2
  - Unclear expectations from teachers: 1
  - Hard to ask questions: 1
  - Poor Motivation: 1

eMpowerment Fall 2020

	Empowerment				
Row Labels	Count of	Count of	Count of	Count of	Average of Q33_5_
1004-Foods, Nutrition, and Exercise	31	37	33	35	4.167
1114-Orientation to HNFE	26	24	25	26	4.500
2014-Nutrition Across the Life Span	20	24	21	17	4.421
2544-Functional Foods for Health	3	3	3	3	3.500
2664-Behavior Theory in Health Promotion	3	4	4	4	4.250
2804-Exercise & Health	10	11	11	11	3.600
2824-Athletic Injuries	8	8	10	10	4.000
3024-Science of Food Prep Lab	2	1	2	1	4.500
3034-Methods of Human Health Assessment	22	25	24	20	2.842
3114-Food Service and Meal Management	3	3	3	4	3.500
3634-Epidemiology of Health and Disease	5	5	5	5	3.200
3804-Exercise Physiology	10	11	11	9	3.700
3824-Kinesiology	16	13	14	14	4.467
4004-Seminar-Anderson	1	2	1	2	5.000
4004-Seminar-Good	4	4	3	4	4.750
4004-Seminar-Ju	1	1	1	1	1.000
4004-Seminar-Kraat	2	2	2	2	4.667
4004-Seminar-Liu	2	2	2	2	5.000
4004-Seminar-Williams	3	4	3	4	3.667
4024-Emerging Issues in Dietetics	1	2	1	1	5.000
4025-Metabolic I	27	26	27	24	4.393
4114-Food Nutritional Toxicology	1	1	1		4.000
4125-Medical Nutrition Therapy I	2	2	2	3	3.667
4174-Nutrition & Physical Performance	7	7	5	6	4.333
4624-Community Nutrition	1	1	1	1	4.000
4645-Applications in Nutrition Counseling			1	1	5.000
4664-Health Counseling	10	13	9	9	4.400
4754-Advanced Anatomy and Pathophysiology	4	4	5	5	4.800
4774-Medical Weight Management				1	
(blank)					
Grand Total	225	240	230	225	4.116

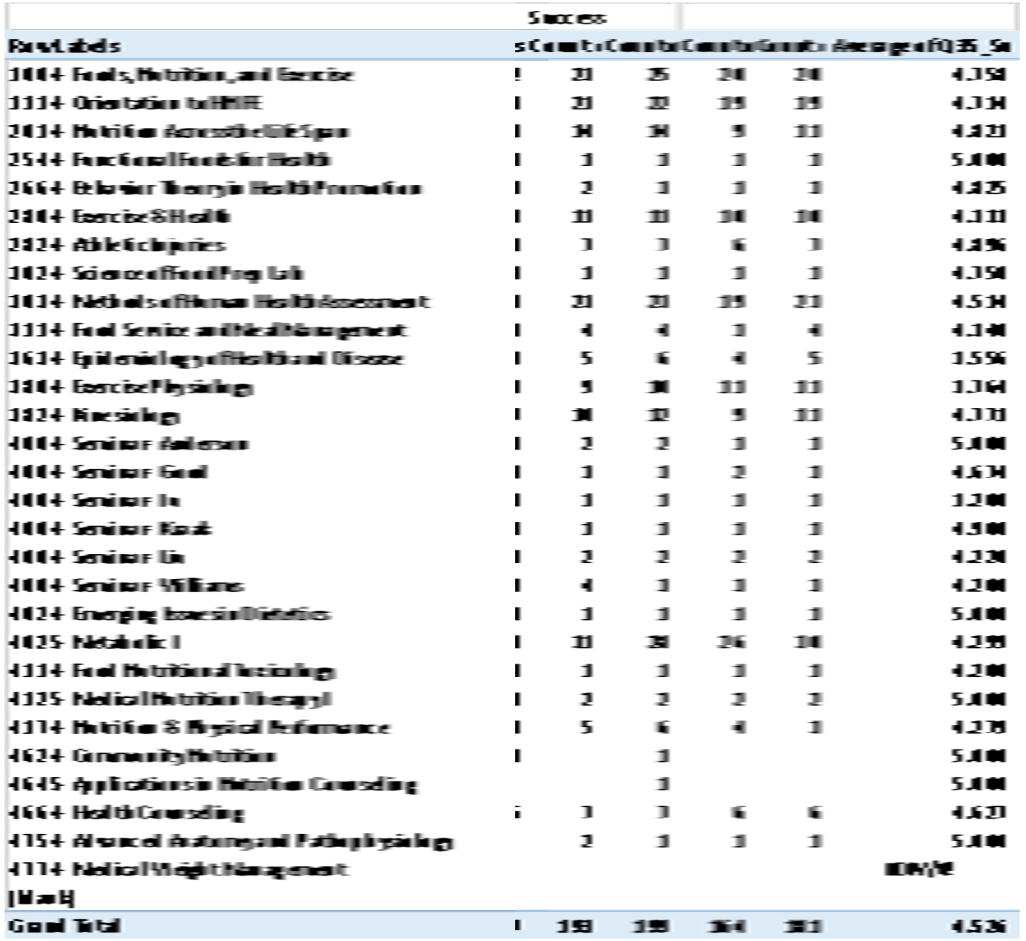
- Listed are all the HNFE classes offered in the Fall
- The Count are the number of students that answered the 6 questions that make up the eMpowerment score
  - There are some classes that did not generate a number for a category because the n was 1 and they only answered 1 question
- The Likert score is listed last & averaged at the bottom
- An average of 4.116 indicates that overall they “somewhat agreed” that they were eMpowered
  - Improved slightly from 4.06 in the Spring

Usefulness Fall 2020

	Usefulness					
Row Labels	i_ Count o	Count o	Count o	Count o	Count o	Average of Q34_Us C
1004-Foods, Nutrition, and Exercise	3	25	28	24	23	22	4.652
1134-Orientation to HHE	4	24	28	24	21	22	4.444
2434-Nutrition Across the Life Span	1	12	11	10	10	11	4.693
2544-Functional Foods for Health	4	2	2	1	1	1	5.000
2664-Behavior Theory in Health Promotion	4	3	3	3	4	3	4.150
2804-Exercise & Health	4	6	6	6	5	6	4.333
2824-Athletic Injuries	4	6	7	6	6	6	4.450
3024-Science of Food Prep Lab	4		1	1	2	2	3.250
3034-Methods of Human Health Assessment	3	25	28	22	19	21	4.621
3134-Food Service and Meal Management	4	4	4	4	4	4	5.000
3164-Epidemiology of Health and Disease	4	5	5	5	6	6	5.000
3304-Exercise Physiology	4	11	10	8	10	9	4.250
3324-Kinesiology	3	7	7	9	6	8	4.613
4004-Seminar-Anderson	4	1	1	1	1	1	5.000
4004-Seminar-Gould	4	3	3	2	3	2	4.511
4004-Seminar-Hu	4	1	1	1	1	1	5.000
4004-Seminar-Kwak	3	1	1	2	1	1	4.500
4004-Seminar-Liu	4	2	2	2	2	2	5.000
4004-Seminar-Williams	3	3	3	3	3	3	4.000
4024-Emerging Issues in Dietetics	4	1	1	1	1	1	5.000
4035-Metabolism	3	23	25	25	23	24	4.344
4134-Food Nutritional Toxicology	4	1	1	1	1	1	4.000
4135-Medical Nutrition Therapy I	3	2	2	2	2	2	5.000
4174-Nutrition & Physical Performance	3	5	5	6	6	5	4.633
4624-Community Nutrition	4	1		1		1	5.000
4645-Applications in Nutrition Counseling	4						#DIV/0!
4664-Health Counseling	4	6	6	5	5	5	4.335
4754-Advanced Anatomy and Pathophysiology	4						#DIV/0!
4774-Medical Weight Management							#DIV/0!
(blank)							
Grand Total	6	180	178	175	172	174	4.443

- Usefulness was the average of 6 questions
- Usefulness averaged a 4.44 or a mixture of “Somewhat agree” and “Agree”
  - Stayed the same from the 4.41 in the Spring

Success Fall 2020



	Success				
Row Labels	sCount	Count	Count	Count	Average of Q35_Su
1004 Foods, Nutrition, and Exercise	1	23	25	24	24	4.358
1114 Orientation to NHHE	1	23	22	23	23	4.304
2014 Nutrition Across the Lifespan	1	34	34	9	33	4.823
2544 Functional Foods for Health	1	1	1	1	1	5.000
2664 Behavior Theory in Health Promotion	1	2	1	1	1	4.825
2804 Exercise & Health	1	33	33	30	30	4.333
2824 Athletic Injuries	1	1	1	6	1	4.896
3024 Science of Food Prep Lab	1	1	1	1	1	4.358
3034 Methods of Human Health Assessment	1	23	23	23	23	4.534
3334 Food Service and Meal Management	1	4	4	3	4	4.240
3634 Epidemiology of Health and Disease	1	5	6	4	5	3.556
3804 Exercise Physiology	1	9	30	33	33	3.364
3824 Kinesiology	1	30	32	9	33	4.333
4004 Senior Anderson	1	2	2	1	1	5.000
4004 Senior Gaul	1	1	1	2	1	4.634
4004 Senior Ix	1	1	1	1	1	3.200
4004 Senior Kaut	1	1	1	1	1	4.500
4004 Senior Lin	1	2	2	2	2	4.250
4004 Senior Williams	1	4	1	1	1	4.200
4024 Emerging Issues in Dietetics	1	1	1	1	1	5.000
4025 Metabolic I	1	33	28	26	30	4.299
4334 Food Nutritional Toxicology	1	1	1	1	1	4.200
4335 Medical Nutrition Therapy II	1	2	2	2	2	5.000
4374 Nutrition & Physical Performance	1	5	6	4	1	4.250
4624 Community Nutrition	1		1			5.000
4645 Applications in Nutrition Counseling			1			5.000
4664 Health Counseling	1	1	1	6	6	4.621
4754 Advanced Anatomy and Pathophysiology		2	1	1	1	5.000
4774 Medical Weight Management						
(blank)						
Grand Total	1	193	199	364	383	4.536

- Success was the average of 4 questions
- Success averaged a 4.53 or a mixture of “Somewhat agree” and “Agree”
  - Improved slightly from 4.37 in the Spring

Interest Fall 2020

	Interest					
Row Labels	Count	Count	Count	Count	Count	Average of 033_Int C
1004-Foods, Nutrition, and Exercise	28	27	23	28	32	4.593
1134-Orientation to HHPE	27	24	26	29	25	4.358
2034-Nutrition Across the Life Span	14	19	21	26	15	4.593
2544-Functional Foods for Health	2	2	3	2	2	5.000
2664-Behavior Theory in Health Promotion	5	5	5	5	4	4.318
2884-Exercise & Health	6	5	6	3	9	4.056
2924-Athletic Injuries	8	9	8	10	11	4.483
3014-Science of Food Prep Lab	2	2	2	2	2	4.900
3034-Methods of Human Health Assessment	22	22	21	20	21	3.510
3134-Food Service and Meal Management	4	4	3	3	3	4.035
3164-Epidemiology of Health and Disease	5	4	4	4	6	3.533
3184-Exercise Physiology	10	11	10	9	10	3.654
3214-Kinesiology	11	11	13	10	10	4.335
4004-Seminar-Anderson	2	2	2	2	2	5.000
4004-Seminar-Gaul	3	3	3	3	3	4.063
4004-Seminar-Ha	1	1	1	1	1	1.000
4004-Seminar-Kozak	2	2	1	2	2	3.063
4004-Seminar-Liu	1		2	2	2	3.333
4004-Seminar-Williams	2	3	3	2	2	3.663
4024-Emerging Issues in Dietetics	2	2	1	1	1	5.000
4025-Metabolism I	24	24	22	20	26	4.161
4134-Food Nutritional Toxicology	1	1	1	1	1	1.200
4135-Medical Nutrition Therapy I	3	3	3	2	3	4.833
4134-Nutrition & Physical Performance	6	5	5	3	4	4.529
4624-Community Nutrition	1	1	1	1		5.000
4645-Applications in Nutrition Counseling						#DIV/0!
4664-Health Counseling	9	10	10	9	9	4.535
4754-Advanced Anatomy and Pathophysiology	1				1	5.000
4774-Medical Weight Management						#DIV/0!
(blank)						
Grand Total	203	202	204	201	203	4.188

- Interest was the average of 5 questions
- Interest averaged a 4.19 indicating “Somewhat agree”
  - Improved slightly from 3.99 in the Spring

Caring Fall 2020

	Caring						
Row Labels	Count	Count	Count	Count	Count	Count	Average of Q18_Ca
1004-Foods, Nutrition, and Exercise	3	3	5	3	1	3	3.571
1134-Orientation to HHPE	4	5	5	3	1	4	3.636
2034-Nutrition Across the Life Span	1						#DIV/0!
2544-Functional Foods for Health	1						#DIV/0!
2664-Behavior Theory in Health Promotion	1	1	1	1	1	1	4.000
2804-Exercise & Health	3	1	3		1		4.000
2824-Athletic Injuries	3	1	3	2	1	3	3.200
3024-Science of Food Prep Lab							#DIV/0!
3034-Methods of Human Health Assessment	13	13	14	11	11	15	3.250
3134-Food Service and Nutr Management	1	1					4.000
3634-Epidemiology of Health and Disease	3	4	4	3	3	4	3.643
3804-Exercise Physiology	1	1	4	1	3	4	3.250
3824-Kinesiology	2	2	1	1		2	3.333
4004-Seminar-Anderson							#DIV/0!
4004-Seminar-Goel							#DIV/0!
4004-Seminar-Ju	1	1	1	1	1	1	1.000
4004-Seminar-Kraft							#DIV/0!
4004-Seminar-Liu							#DIV/0!
4004-Seminar-Williams				1			4.000
4024-Emerging Issues in Dietetics							#DIV/0!
4025-Metabolism I	3	2	2			1	4.000
4134-Food Nutritional Toxicology	1	1	1				4.000
4135-Medical Nutrition Therapy I							#DIV/0!
4334-Nutrition & Physical Performance	1	1	1		1	1	3.333
4624-Community Nutrition							#DIV/0!
4645-Applications in Nutrition Counseling							#DIV/0!
4664-Health Counseling	1			1			4.000
4754-Advanced Anatomy and Pathophysiology							#DIV/0!
4774-Medical Weight Management							#DIV/0!
(blank)							
Grand Total	48	41	44	26	24	38	3.411

- Caring was the average of 6 questions
- Participation in these questions AGAIN dropped by 75% compared to the other MUSIC Model questions answered
- Caring averaged a 3.41 indicating “Somewhat agree” and “Somewhat disagree”
  - Decreased slightly from 3.54 in the Spring

MUSIC Model Summary Fall 2020

- Overall the results of the MUSIC model on student motivation were very similar from Spring 2020 to Fall 2020
- For the department, we were highest in Usefulness and Success with a "somewhat agree" to "agree" rating
- For eMpowerment and Interest, we were at a "somewhat agree"
- Concerning, was the Caring rating at a "somewhat agree" to "somewhat disagree"
  - Could also be because of survey fatigue, in that this is the section with the least amount of answers

Additional comments about Virtual Learning in the Fall of 2020

- 122 response:
  - Enjoyed the Autonomy: 32
  - Enjoyed when Video Lectures were posted after class: 21
  - Needed better assignment instructions: 12
  - Enjoyed Synchronous better (required mandatory meetings): 5
  - Enjoyed not commuting: 3
  - Canvas was well organized: 1
  - Positive Teacher interaction: 4
  - Bigger classes hard to connect with students: 1
  - Didn’t learn as much: 2
  - Had a good experience: 7
  - Teachers need to lessen load/be more understanding: 7
  - Teacher not prepared: 1
  - Breakout rooms received mixed reviews: 3 liked/ 1 disliked
  - Missed having student interactions: 2
  - Liked Kahoots: 5
  - Liked the Blended model between synchronous & asynchronous: 5

Discussion

- Overall themes
  - Internet reliability decreased for students living in Blacksburg versus living at home
  - Because of the challenges to virtual learning, students believe that overall classes should have less rigor than face-to-face classes
  - 2/3 of students joined synchronous zoom sessions with their camera off- all sorts of reasons, but mostly they felt self conscious
  - Canvas continued to be the most effective tool students relied on
  - Enjoyed the autonomy that virtual learning allows, but struggled with the discipline/motivation for virtual learning
  - Distractions from friends, classmates, family, pets, etc. during class is the biggest challenge for both synchronous & asynchronous learning
  - Student motivation as measured by the MUSIC model shows that Usefulness & Success categories were the highest for HNFE, followed by eMpowerment & Interest
    - Caring continues to be the lowest rated category
    - Data was very consistent from the Spring to the Fall

Limitations

- Although we tried to decrease the length of the survey, it was still too long resulting in survey fatigue
  - This was evident with the last set of questions on Caring in the MUSIC model, where answers dropped by 75%

References

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