

Students' Perception of Online Equine Courses and How It Affects Their Learning



Blaire L. Speck¹, Lisa K. Karr¹, Doug A. Golick², and Lena M. Luck¹

¹Department of Animal Science, University of Nebraska Lincoln

²Department of Entomology, University of Nebraska Lincoln

Correspondence regarding this article should be addressed to Lena Luck. Email: lena.luck@unl.edu.

Abstract

Courses that are typically hands-on, like equine science, may be more challenging online, but there is a higher demand for online offerings. With an increase in students taking online equine courses, a review of teaching methods was conducted to determine students' preferred teaching tools in online equine courses. The survey was sent out to students at approximately 10 universities that offer equine science courses online that had previously or were currently enrolled in an online equine-focused course and was completely voluntary. Of the 77 respondents, 71 (92%) were female, 6 (8%) males, and the majority (96%) white. The primary reasons students chose an online equine science course was because it fit their schedule better ($n = 8$; 24.5%) and the course was only offered online ($n = 36$; 23.2%). Students found videos ($n = 62$; 92.5%) and readings ($n = 57$; 85.1%) were extremely or somewhat beneficial teaching methods. Half ($n = 34$; 50.8%) of the students felt they learned as much in their online courses as in a traditionally taught course. Additionally, students indicated they received a quality education in equine science courses whether taught online ($n = 55$; 82.1%) or in a traditional in-person ($n = 49$; 73.1%) format.

Keywords: equine science, online learning, online course development

Online learning has become the new "normal" when it comes to post-secondary education. Over the last few years, significant changes in education and the world have resulted in more online courses. Online learning can be viewed as having several human/nonhuman entities interact together through computer-based instructional systems to achieve the goals of the course (Eom et al., 2006). Additionally, Allen and Seaman (2008) referred to traditional learning as courses with little to no online technology used and content is delivered in writing or orally. Approximately 28% of students seeking higher education participate in at least one online course in their program and 14% of higher education students are enrolled exclusively in distance or online programs (Allen & Seaman, 2016). Online education continues to gain momentum as a preferable method to access higher education and has started to be studied extensively in the last 20 years (Hurlbut, 2018). Since 2020, a sharp increase in online courses has occurred due to the impacts of COVID-19 pandemic. In the Fall of 2019, the Department of Education's Integrated Postsecondary

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Education Data System started collecting distance learning numbers. Only 37% of students took an online course in the Fall of 2019. However, 51.8% of students took at least one online course in the 2019-2020 academic year which was the beginning months of COVID-19 (Smalley, 2021). With increased use of online teaching, student learning in this environment needs to be assessed.

Most equine focused courses have traditionally been taught in an in-person format so that students can acquire the necessary hand-on skills (Tumlin et al., 2009). These courses often provided equine students with hands-on experiences in the classroom. Teachers and students believe that skill sets vital for future careers in the industry are learned through hands-on experiences (Merson et al., 2020). According to a panel of equine professionals and educators the top five most important skills to be successful in the equine industry included: practice basic barn safety; recognize bad hay/feed; identify unsafe environments; catch, halter, and lead a horse; and provide a physical exam including vital signs. The least important skills were related to training and riding (Gadd et al., 2018). Examples of traditional equine courses taught at many universities include equine management, equine first aid, equine nutrition, basic and advanced equitation, judging, and more. Equines are large animals and require handlers to have a good deal of knowledge and training about behavior and management techniques to ensure safety. With equine courses, often being more hands on, teaching online presents a challenge. The hands-on experiences in traditional equine science classes help teach critical skills such as horse handling and prepare students for future careers. Since online courses do not allow students to get hands-on experience, equine instructors must find interactive ways to provide students with quality education to gain the necessary skills. Information that was normally taught and demonstrated in-person now must be transferred to an online platform. During the peak of COVID-19, University of California Davis moved their equine riding class, normally taught in person, to online. At the end of the semester, students were asked to take a survey responding to questions about their perception of the equine riding course taught entirely online. Students at the undergraduate and high school level preferred their online equine riding course to be taught by the instructor live through Zoom over watching recordings of classes. Students at both the precollege and undergraduate level found it much easier to grasp equine concepts taught online compared to in-person classes and found the recorded sessions helpful. Even though teaching this equine riding course online is not ideal, students still found value through guest speakers, interacting with the professor through questions, and supplemental videos (Merson et al., 2020). Instructors found it helpful to record lectures to create short videos to supplement online learning. By including a camera in courses, it also allows students the possibility to watch live hands-on labs if they are not able to attend in-person.

Students' perception of online education varies with research supporting both online and traditional learning. In fields where information is constantly changing, online learning provides site bound professionals access to new information in their field (Bisciglia & Monk-Tyrner, 2002).

When teaching online, instructors have a greater opportunity to diversify their learning material and give students a variety of experiences (Anderson, 2004). It also allows students the opportunity to take courses according to their own schedule or that may not be offered at their university or college (Hurlbut, 2018). However, online learning does bring challenges to education. More specifically the interaction between student and teacher is a key component of learning. Being able to ask questions, share opinions, and participate in activities is an important part of student learning (Ni, 2013). When students take courses online, it takes away the peer-to-peer interaction which helps students create a sense of community. However, when courses allow students to develop strong working groups, students perceive the course in a brighter light, and it helps them see themselves as a community (Coomey & Stephenson, 2001). As more equine courses are offered online, course instructors will need to determine when to best utilize online or in-person learning based on course content, accessibility of resources, and learning outcomes. The hands-on aspect of equine courses is taken away when courses are online. Determining how best to provide students with valuable experience without knowing how they feel about online courses brings about a challenge.

The only way to learn about students' satisfaction with their online equine courses is to analyze them through a variety of questions. As research continues to ask vital questions, instructors will learn and discover what different teaching methods, activities, and support they can give to students to provide them with the best education they can. Through this research project, students' perceptions of online learning in equine science courses and their influence on student learning satisfaction was analyzed. The study utilized quantitative questions to analyze students' perception of online learning in equine science courses. Students evaluated course content, learning interactions, support, and overall satisfaction. This study provides teachers with ideas to improve their online equine courses and how students perceive online learning through an in-depth analysis of students' perception and learning satisfaction.

Methods

Student and Questionnaire

An online survey was provided to students who had or were currently enrolled in an online equine course to collect data on student satisfaction, student perception, and delivery methods to determine best practices for online equine courses. The survey was reviewed by Institutional Review Board (IRB) and was granted exemption approval (IRB ID: 20211020938EX).

The survey was sent out to approximately ten universities that offer equine science courses online through members of the National Association of Equine Affiliated Academics (NAEAA) and equine program directors to solicit student participation hereinafter known as recruiters. The questionnaire tool was designed to be completed remotely online and was made available to students via an

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anonymized web link by a recruiter. The survey was created in Qualtrics to be easily accessed by students via web link and automatically optimized for viewing on a variety of personal devices (computers, tablets, and mobile devices). Data was collected both Fall 2021 and Spring 2022 for this study. Participation was limited to college students that had previously or were currently enrolled in an online equine-focused course and considered an adult by age in their respective state. Survey participation was completely voluntary. However, to attempt to increase the response rate, twenty \$20 and one \$100 Amazon gift card were sent through email to recipients drawn from those that provided an email address.

Design of Survey

The assessment tool included multiple sections. The first section consisted of basic demographic information. The next section looked at the benefits of multiple teaching methods and activities that were either provided in their online course or they wish were provided. These questions were based on a negative to positive Likert-type scale. Students were able to express if they felt teaching methods like videos, readings, guest speakers, virtual office hours and more were beneficial (e.g., a response of -2, indicates "extremely detrimental", whereas a response of 2, indicates "extremely beneficial", and a response of 99, indicates "method was not used").

In the following section students were asked to respond to statements regarding the importance of assignments and activities in their online equine course in relation to their learning. Additional questions targeted the quality of education they felt they were receiving and reasons they enrolled in an online equine course. There was a mix of 5-point Likert scale response questions (e.g., a response of 1, indicates a response of "strongly disagree", whereas a response of 5, indicates "strongly agree"), text entry questions, and multiple responses.

In the last section, students were asked to respond to eleven perception-based questions. Questions for this portion came from a previously validated survey Student Satisfaction Survey by Strachota (2006). This evaluated learner-content interaction, learner-instructor interaction, learner-learner interaction, and overall satisfaction. Data was analyzed on a negative to positive Likert scale: 2= Strongly Agree, 1= Somewhat Agree, 0=Neither Agree nor Disagree, -1=Somewhat Disagree, -2= Strongly Disagree. All statements were looked at individually by running a Friedman's 2-Way Analysis of Variance by Ranks Test followed by an ANOVA frequency test to analyze the mean and standard deviation. The Student Satisfaction Survey resulted in a Cronbach's alpha of 0.89 meaning this survey instrument was highly reliable and valid (Strachota, 2006).

Procedure

Participants were informed of the goal to explore student's perceptions of online equine courses and their influence on student learning satisfaction. The survey was digital through Qualtrics with the link included in the email

provided for faculty and equine programs to send to their students. Four reminder emails were sent out to recruiters asking them to send the survey to their student lists and recruiters forwarded the message to students to remind them to complete the survey. Students provided consent before starting the survey. If a student began the survey and had not taken an online equine course, Qualtrics did not proceed with the remainder of the questions on the survey. It took around 10-15 minutes to complete with all completed surveys analyzed anonymously. Populations were not grouped dependent on their university; all the data was compiled into one group to be analyzed.

Statistical analysis

Once all the surveys were completed, the answers were grouped into themes and analyzed. Statistical tests analyzed in this study included: Independent T-test, Friedman's Two-Way Analysis of Variance by Ranks, Wilcoxon's Signed Rank Test, and Frequencies. Beneficial teaching methods utilized in courses as well as activities and assessments were analyzed with a Friedman's Two-Way Analysis of Variance by Ranks test followed by an ANOVA test to compare distributions. An Independent T-Test was then run between two variables until there was a distributional difference found. The Independent T-test compared two-sample means to see if there was a statistical difference. A Wilcoxon's Signed Rank Test was used to analyze participants' responses to the quality of education they received in their online and traditional equine courses.

Student's perception of course lessons and lecture notes, assignments and/or projects, and preparation for quizzes/exams were gathered from three separate questions, and a Friedman's Two-Way Analysis of Variance by Ranks test was completed on them individually and then an ANOVA frequency test was utilized to compare distributions. Students were also asked to report how much they agree or disagree with a variety of learner-instructor interaction statements. Each statement was analyzed individually with a descriptive frequency test and then organized by highest to lowest means in the table. Descriptive frequency tests were run on each individual learner-learner interaction question in order to look at distributions.

Students were then asked a variety of overall satisfaction questions and asked to rate how much they agreed with the statements. Each statement was looked at individually and student's overall satisfaction ratings were analyzed with descriptive frequencies. This survey utilized validated questions directly correlated to content, learning outcomes, interactions, and overall satisfaction.

Results and Discussion

Eighty-nine students completed some or all of the survey. The majority of students enrolled in online equine courses were female at 93% (n = 83) with the remaining 7% (n = 6) being male (Figure 1) and were white at 96% (n = 85; Figure 2). The respondents age ranges of 27 years or older (41% of respondents; n = 36) and 19–21-year-old (40%; n = 36) were the largest (Figure 3). Ages 22-26 made up 18%

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(n = 16), and the remaining 1% (n = 1) declined to answer. When comparing class level, the split was fairly even across freshman (n = 26), senior (n = 22), and juniors (n = 20) with fewer sophomores (n = 14), and master students (n = 7) completing the survey (Figure 4). Similar gender results were noted when looking at undergraduate equine interested students with 87% (n = 109) female and only 13% (n = 17) male at Massey University (Gronqvist et al., 2017). However, that study found that most students were under 20 years old (79%; n = 100) followed by 21-25 making up 18% of the results (n = 23; Gronqvist et al., 2017). In a faculty perception survey study related to equine students at the Ohio State University, demographics showed that the typical student enrolled in an equine course was a white, female freshman, and 18-20 years old (Southworth, 2014). With a large percentage of the participants 27 years old or older in the current study, there may be a higher number of non-traditional students who are taking online equine courses. Online education allows the flexibility for these students to either further their career or begin one. The average age of online students is now 29 compared to an average age of 26 among all undergraduates (Doyle, 2009). Also, online students are more likely (63%) to be female (Doyle, 2009).

Figure 1.

Gender of student participants currently or previously enrolled in an online equine science course at the time of the survey (n= 89).

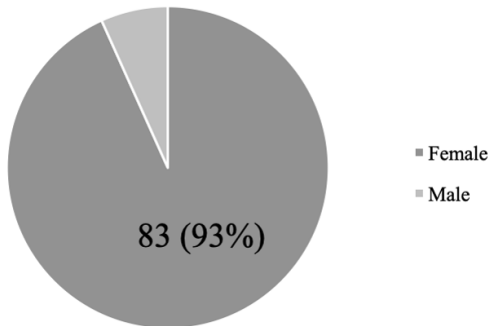


Figure 2.

Race of students currently or previously enrolled in an online equine science course at the time of the survey (n=89).

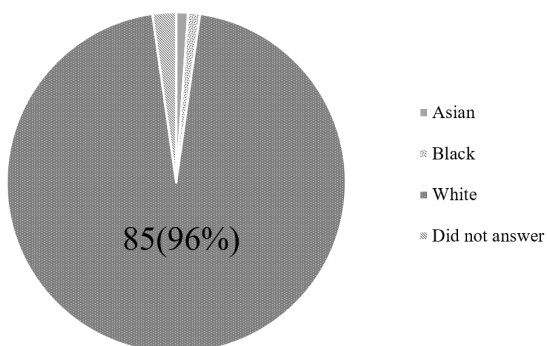


Figure 3.

Age of students currently or previously enrolled in an online equine science course at the time of the survey (n= 89).

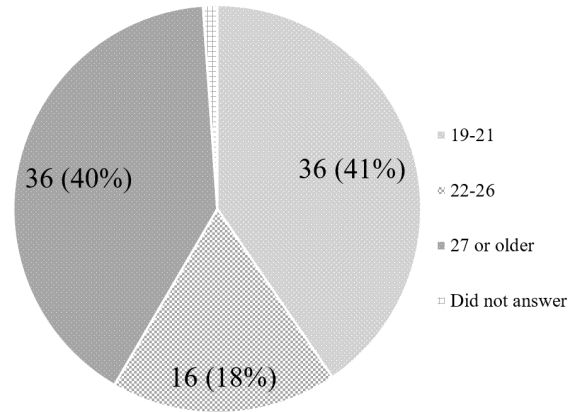


Figure 4.

Age of students currently or previously enrolled in an online equine science course at the time of the survey (n= 89).

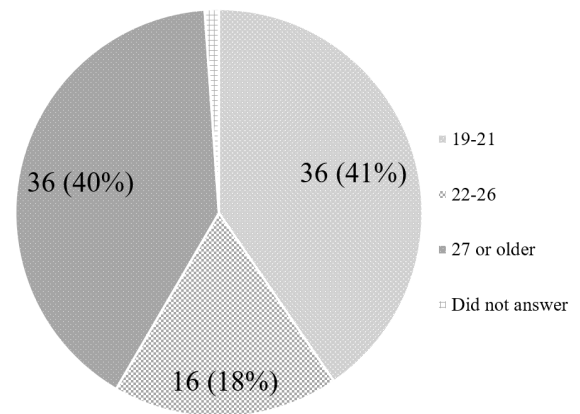
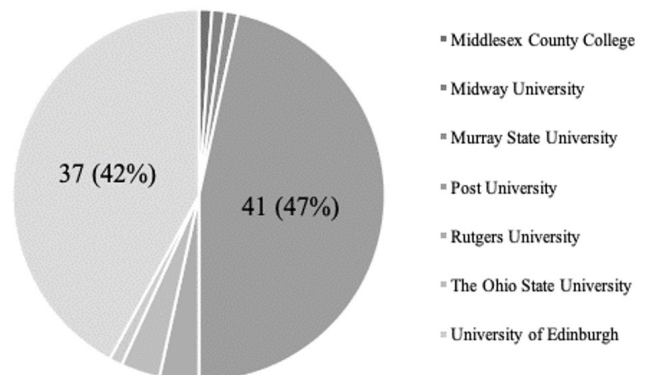


Figure 5.

Universities and/or colleges of students currently or previously enrolled in an online equine science course at the time of the survey (n=87).



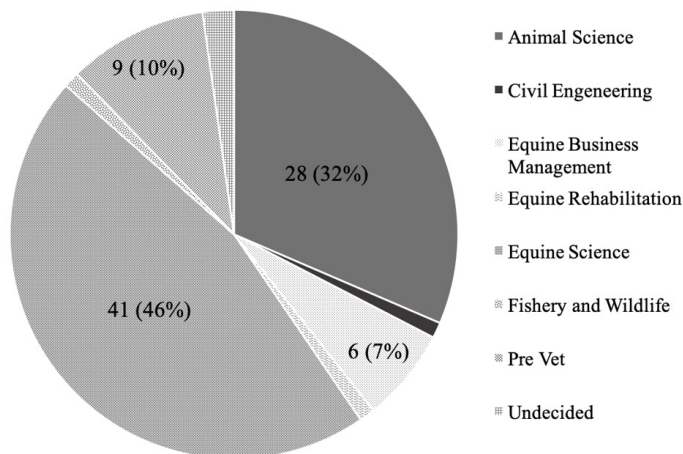
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Figure 5 shows the universities that participated in the equine online course survey. As seen on the chart, Post University had the largest number of responses at 47.1% (n = 41). This was to be expected due to the Post University equine courses only being offered online. The University of Nebraska-Lincoln had the second largest number of responses at 41.2% (n = 37) due to the survey originating from this university.

As expected, most participants were in animal or equine science related majors with Equine Science at 47.1% (n = 41) followed by Animal Science at 24.1% (n = 21; Figure 6). Students had to be enrolled in an online equine science course in-order to participate in the survey study. Similar to an undergraduate success survey in a horse management course, 46% of participants were equine science majors (Lavoie, 2019). In The Ohio State University's survey, students in the equine course had declared an agriculture major with an equine minor or equine concentration (Southworth, 2014). It would be expected that most students enrolled in these courses would be taking them as part of an animal related undergraduate or graduate program.

Figure 6.

Self-reported majors of students currently or previously enrolled in an online equine science course at the time of the survey (n= 89).



Participants were asked what teaching methods utilized in their online equine course were most beneficial (Table 1). Questions were scaled on a negative to positive Likert scale with extremely beneficial being 2, extremely detrimental being -2, and neutral being 0. Students found videos (x = 1.66; p < 0.001) most favorable of the teaching methods used. Other teaching methods that students found valuable were supplemental reading (x = 1.31; p = 0.05), interactive web-based platforms (x = 1.15), streaming video platforms (x = 1.14), guest speakers (x = 1.13), virtual office hours (x = 1.04), instructor telephone availability (x = 0.90), live chats (x = 0.85), and web conferencing tools (x = 0.75). In similar studies, students found value through guest speakers, interacting with the professor through questions, and supplemental videos greatly beneficial (Merson et al., 2020). Students in equine classes may find additional value in videos where instructors can demonstrate hands-on skills and students may re-watch the videos to reinforce information.

Table 1.

Teaching methods students currently or previously enrolled in an online equine science course at the time the survey found to be the most beneficial in online equine courses in relation to their learning (n=77-55).

Item	N	Mean ^a	Median	SD
Videos	77	1.66 ^b	2	0.60
Readings	77	1.31	1	0.78
Interactive Web-based Platforms	71	1.15	1	0.92
Streaming Video Platforms	70	1.14	1	0.87
Guest Speakers	55	1.13	1	0.86
Virtual Office Hours	73	1.04	1	0.99
Instructor Telephone Availability	69	0.90	1	1.02
Live Chats, Individually or Course Wide	68	0.85	1	1.01
Web Conferencing Tools	65	0.75	1	0.99

Note. ^aLikert scale: 2= Extremely beneficial, 1= Somewhat beneficial, 0=Neutral, -1=Somewhat detrimental, -2= Extremely detrimental

^bVideos were rated higher than all other teaching methods by students (P<0.001)

Students rated the importance of activities and/or assessments used in online equine courses in relation to participants learning (Table 2). Data was analyzed on the same negative to positive Likert scale. Students found online quizzes to be the most effective assessment tool (x = 1.36). Students' ratings of online case studies (x = 1.32), individual student projects (x = 1.34), and small written assignments (x = 1.26) were equally beneficial in online equine courses to improve participant learning. Students viewed peer discussions (x = 1.09), research papers (x = 1.10), discussion board posts (x = 1.10), students' presentations (x = 1.05), and traditional online exams (x = 0.95) as less beneficial, but still positive. Lastly, students found group projects (x = 0.58) and traditional in-person exams (x = 0.57) to be the least beneficial (P > 0.05) in their online equine courses. Similar research showed that by engaging students in case studies and individual problem-based projects, it helped students think on a higher level and retain information longer (Weiss, 2003). In similar studies, written assignments, online peer discussion, research papers, and tests/quizzes/exams were seen to be effective activities and assessments to evaluate student success (Kearns, 2012; Suen, 2014). Research in higher education also found that students did not feel as though group projects enhanced their learning or engagement in their online courses (Jones & Blankenship, 2017).

Students were asked two separate questions about the quality of education they felt they received in their traditional or online equine science courses (Figure 7; n = 77). No statistical difference was noted between online and traditional equine courses (P < 0.05). Students felt

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Table 2.

Students perceived importance of activities and/or assessments used in online equine courses in relation to participants learning (n=76-46).

Item	N	Mean ^a	Median	SD
Online Quizzes	76	1.36 ^b	1	0.67
Case Studies	75	1.32 ^b	2	0.84
Individual Student Projects	71	1.34 ^b	2	0.79
Small Written Assignments	70	1.26 ^b	2	0.86
Peer Discussions	76	1.09	1	1.02
Research Papers	70	1.10	1	0.90
Discussion Board Posts	73	1.10	1	1.06
Student Presentation	65	1.05	1	0.89
Traditional Online Exams	75	0.95	1	0.88
Group Projects	62	0.58	1	1.08
Traditional In-Person Exams	46	0.57	0	0.94

Note. ^aLikert scale: 2= Extremely beneficial, 1= Somewhat beneficial, 0=Neutral, -1=Somewhat detrimental, -2= Extremely detrimental

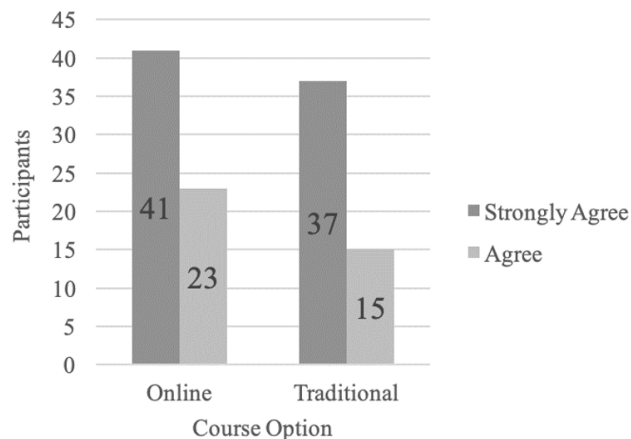
^bTools rated as more beneficial (P>0.05)

they received quality education in both their online and traditional equine courses. Navarro and Shoemaker (2000) found that students' learning outcomes and overall quality of education for online learning were just as good if not better than traditional learning. In 2009, the U.S. Department of Education compiled data from 51 independent courses between 1996 and 2008 and found no significant difference between online or traditional course effectiveness when it came to performance. Since there was not an effect on students' learning in the online section versus the traditional section, being able to offer a course online can allow for more flexibility (Means et al., 2009). Hurlburt (2018) found students can receive quantitatively the same outcome when taking a course online or in person. Navarro and Shoemaker (2000) found that students' learning outcomes for online learning were just as good if not better than traditional learning. Determining whether to teach equine courses online or in person should be decided based on course learning objectives and if they require a more hands-on format. For example, equine equitation (horse handling and riding) courses would be difficult to provide the same quality online compared to other equine courses such as nutrition or reproduction.

To determine the best learner-content interaction in equine courses, students were asked how well they felt their online equine course content (lessons, lecture notes, assignments, projects, and preparation for quizzes and exams) facilitated their learning (n = 74). Students felt that course lessons and lecture notes (x = 1.43), assignments and/or projects (x = 1.42) and preparing for quizzes and

Figure 7.

Students currently or previously enrolled in an online equine science course at the time the survey was asked in two separate questions the quality of education they felt they received in their traditional and online equine science courses (n=77).



exams (x = 1.22) helped with their learning similarly (Table 3). Students at a large southeastern university similarly perceived online courses supported their learning through course format and material such as lessons, notes, and supplemental assignments, they were more likely to be satisfied with their online course (Lee et al., 2011). Careful consideration of alignment of content is critical to successful learning both online and in traditional courses. The course objectives should have a direct correlation and alignment with the delivery of content for students to get the most out of each learning outcome. When students receive valuable feedback from their instructor about course content, the online course design becomes less critical (Eom et al., 2006). Learning is greatly affected by the behavior and support of the instructor and by other external factors like course content. Students thrive from approval, support, and learning in a step-by-step process (Hoic-Bozic et al., 2008).

Table 3.

Students' perception of learner-content interaction in online equine courses (n=74).

Item	N	Mean ^a	Median	SD
Course Lessons and Lecture notes	74	1.43	2	0.89
Assignments and/or projects	74	1.42	2	0.86
Preparation for quizzes/exams	74	1.22	2	1.04

Note. ^aLikert scale: 2= Strongly Agree, 1= Somewhat Agree, 0=Neither Agree nor Disagree, -1=Somewhat Disagree, -2= Strongly Disagree

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Students (n = 74) currently or previously enrolled in an online equine science course were also asked questions focused on learner – instructor interaction (Table 4). Students were generally positive about learner-instructor feedback rating many items at or above a 1.0 (agree/strongly agree). Students agreed they were able to get individualized attention from the teacher when needed (x = 1.05; SD = 1.31), the teacher was an active member of the discussion groups offering direction and encouraging communication (x = 1.03; SD = 1.34), they received timely feedback (within 24-48 hours) from the teacher (x = 0.96; SD = 1.37), and although they could not see the teacher in my online classes, they felt his/her presence (x = 0.95; SD = 1.13). When asked if they felt frustrated by the lack of feedback from the teacher, students were neutral (x = 0.47; SD = 1.48). The large standard deviation indicates some concerns with instructor feedback. Students that are used to more traditionally delivered courses seem to expect more traditional feedback which may leave them frustrated. Variation between instructors' levels of feedback can lead to differences in student satisfaction. Overall, there was a positive response when looking at learner-instructor interaction data. Support for student learning is an imperative element when it comes to optimizing student learning in any environment. The support that students receive is closely related to student motivation and learning (Lee et al., 2011). Meaningful feedback from other students or teachers may have a greater impact on students' perception of learning outcomes compared to the usability of the course online (Eom et al., 2006).

When considering learner-learner interactions, most students neither agreed nor disagreed (n = 10) or strongly agreed (n = 48) that the course encouraged students to discuss ideas and concepts covered with other students (n = 73). The remaining students selected somewhat agree (n = 9) or somewhat disagree (n = 5) with the final student saying they strongly disagree (n = 1) when asked if they felt their equine science course encouraged students to discuss ideas and concepts with other students (Figure 8). When students were asked if they felt their online equine course created a sense of community among students (Figure 9), many students strongly agreed (n = 33/73). Students strongly agreed (n = 41/73) that they were able to ask for clarification from a fellow student when needed (Figure 10).

Table 4.

Students' perception of learner-instructor interactions in online equine science courses (n= 74).

Item	N	Mean ^a	Median	SD
I was able to get individualized attention from my teacher when needed	74	1.05	2	1.31
The teacher was an active member of the discussion groups offering direction and encouraging communication	74	1.03	2	1.34
I received timely feedback (within 24-48 hours) from my teacher	74	0.96	2	1.37
Although I could not see the teacher in my online classes, I felt his/her presence	74	0.95	1	1.13
I felt frustrated by the lack of feedback from my teacher	74	0.47	1	1.48

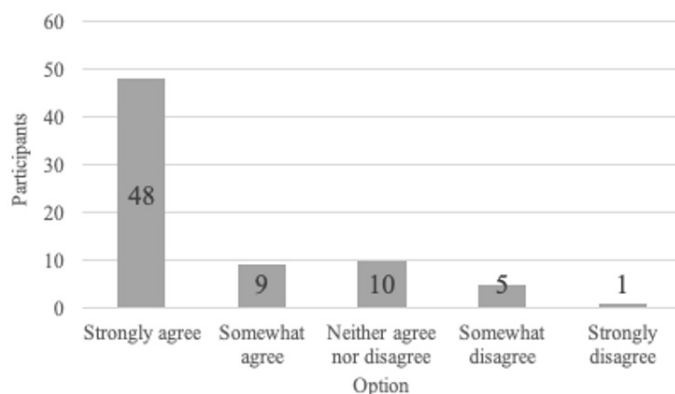
Note. ^aLikert scale: 2= Strongly Agree, 1= Somewhat Agree, 0=Neither Agree nor Disagree, -1=Somewhat Disagree, -2= Strongly Disagree

As students continue to receive distance learning, students seem more prepared to receive non-traditional support and feedback. When courses allow students to develop strong working groups, they then perceive the course in a better light and see themselves as a community (Coomey & Stephenson, 2001). By supporting each other in an online academic environment, it helps the students create a sense of community that they can lean on. Since online learning environments are different than traditional environments, peer support becomes even more important since there is a lack of social interaction between them (Mullenburg & Berge, 2005)

Students' satisfaction with online equine courses is presented in Table 5 (n = 73). Students indicated they were very satisfied with online equine courses (x = 1.21; SD = 1.18). Students were likely to take another online equine course (x = 0.93) and recommended taking an online equine course (x = 0.89). However, students were neutral (x = 0.37) on whether online courses were as effective as traditional courses. Students also felt that they did not learn as much in their online course as they did in their traditional course (x = 0.32). However, students rated that they felt their online course did not meet their needs as negative (x = -0.73) which indicates that students felt their online equine course somewhat met their learning needs. While the effectiveness

Figure 8.

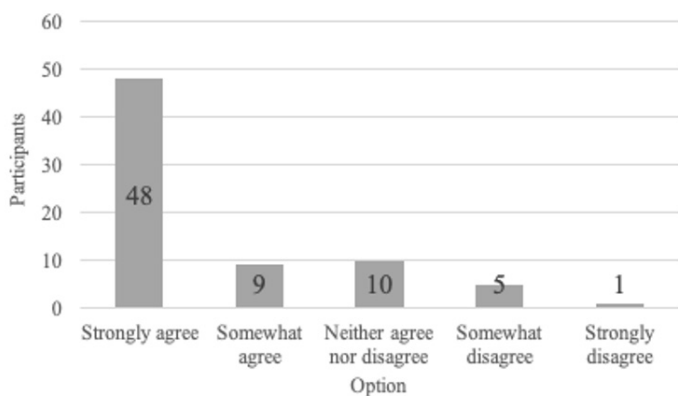
Students currently or previously enrolled in an online equine science course at the time the survey was taken were asked if their online equine science courses encouraged students to discuss ideas and concepts covered with other students (n= 73).



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Figure 9.

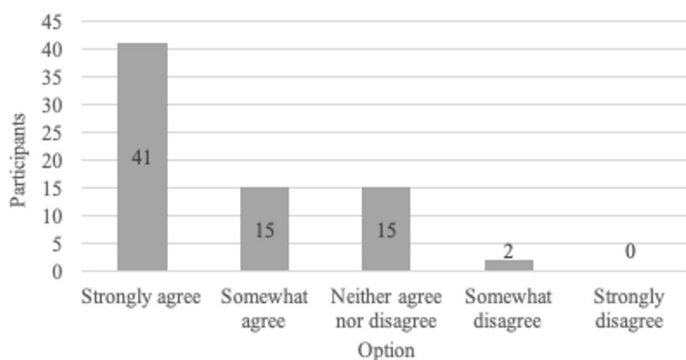
Students currently or previously enrolled in an online equine science course at the time the survey was taken asked if their online equine courses created a sense of community among students (n= 73).



of online teaching in equine courses had mixed ratings from students, it appears that students will continue to take and demand online courses in this area. To have overall satisfaction within the course, there needs to be authentic learning environments, faculty-student interaction in online learning, engagement of students, and valuable feedback (Rothman et al., 2001). Equine instructors should focus on improving the overall learning environment in online courses to improve student learning.

Figure 10.

Students currently or previously enrolled in an online equine science course at the time the survey was taken asked if they were able to ask for clarification from a fellow student when needed (n= 73).



Summary and Implications

Equine instructors have a significant impact on the academic and future success of equine students. However, it presents a challenge for equine instructors to teach online. When looking at beneficial teaching methods in online equine courses, videos were found to be the most favorable. Other teaching methods that students also found valuable were supplemental reading, interactive web-based platforms, streaming video platforms, guest speakers, virtual office hours, instructor telephone availability, live chats, and web conferencing tools. Due to these findings, equine instructors should incorporate supplemental videos and readings in their online courses in order to engage

students learning. The activities and assessments students found most beneficial to their learning were online quizzes, case studies, individual student projects, and small written assignments equally beneficial in online equine courses in relation to participants learning. Equine professors can utilize frequent smaller assessments such as case studies, individual student projects, and small written assignments in their online courses to help students retain information and stay engaged in their online courses. Giving group projects as assignments in online courses may not be beneficial to students learning and satisfaction. Developing a sense of community can ease some issues with group projects in online courses.

As instructors think about learner-content interaction of their students, the study shows evidence that course lessons, lecture notes, assignments, projects, and preparation for quizzes and exams facilitate students learning. Instructors must focus on the quality of learner-instructor interactions to improve student engagement in the course. Students felt that it was important to get individualized attention when needed, for the teacher to be an active member in discussion groups, and to receive timely feedback from instructors to support their learning and success in their online equine courses. Instructors should foster a sense of community that allows frequent and open student-student and facilitator-student dialogue.

Finally, most students felt they were satisfied with their online equine courses. They also had positive agreement scores indicating they would take another online equine course and would recommend online equine courses to others. However, when students were asked if they felt their online equine course was as effective as their traditional courses their responses were neutral. While students feel satisfied with their online equine courses, they did not feel as though the online courses were as effective or that they learned as much when compared to traditional courses. Students were neutral that the course was meeting their learning needs. These results could warrant follow-up questions in order to further explore this answer. Some possible causes for students' answers could be from a combination of COVID 19 pushing courses online, that students didn't fully understand the question, or that they enrolled in the online course out of necessity such as the traditional format limited their ability to be at class due to other commitments (Hannay & Newvine, 2006). Additionally, because the students had not taken the same course in both an online and in person format, they are unable to make direct comparisons to each methods effectiveness. Online learning has conflicting findings in the range from positive, negative, or even no significant difference in students' performance and satisfaction between online and traditional classes (Elfaki et al., 2019) (Sharpe et al., 2006).

Overall, if instructors are having a challenging time meeting students learning needs, they should utilize beneficial teaching methods and activities found in this study to increase student satisfaction. Overall satisfaction is continuing to increase in online learning as a better understanding of learning concepts is developed (Swan, 2001).

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