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Preferred Learning Mode, Instructor Competence and Tuition Reimbursement: What our Faculty and Students are Telling Us

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Preferred Learning Mode, Instructor Competence and Tuition Reimbursement: What our Faculty and Students are Telling Us

Embry-Riddle Aeronautical University (ERAU) offers five learning modes; traditional classroom, EagleVision (EV) Classroom, EV Home, Online, and Blended. The first three modes are synchronous and the online mode is asynchronous. The fifth learning mode is a blending of a synchronous mode with asynchronous tools such as discussion boards found in the online mode. Traditional classroom courses are held at approximately 150 campus locations around the world and require faculty and students to meet face-to-face one time a week for nine weeks. Online courses also have nine week terms where all work is done asynchronously.

EV Classroom is supported by a webcam showing the instructor and remote classroom locations and Polycom (speakerphone) for microphone and sound. Up to four images (the instructor and up to three "remote" classrooms) can be seen at the bottom of the screen. EV Classroom is considered in-resident just like a traditional classroom setting by government agencies, such as the Veteran's Administration, and that designation has reimbursement implications for students (Veterans Affairs [VA], 2013). EV Home is supported by a web cam and headset. The EV Home instructor teaches and students attend classes through use of a computer and internet connection from their homes. Term lengths are 9 weeks long (Embry-Riddle Aeronautical University [ERAU], 2014).

This study builds from a previous study, *Perceptions of Instructors and Students with Respect to Synchronous Video Learning,* which examined 667 faculty and 1,751 student survey responses (Griffith & Schultz, 2014). In that study, most faculty and students disagreed that learning modes were equivalent. Both groups preferred classroom instruction with online as the second most preferred mode. Interestingly, students who had experience with EagleVision still chose traditional classroom as the number one learning mode, but EagleVision Home was the second most preferred (online was third). Significantly more faculty and students agreed that instructors were competent with EagleVision equipment. Students also indicated that Veterans' Affairs (VA) tuition reimbursement policies significantly impacted their choice of learning modes leading to a preference for classroom or EagleVision Classroom. Open response areas on the surveys were not critically analyzed in the initial study. A recommendation was to delve into the faculty and student data further regarding perceptions on these issues (Griffith & Schultz, 2014).

This research examined 228 faculty and 659 student comments from the open response areas not previously analyzed in the surveys. Comments centered on learning mode preferences, instructor competence with EagleVision technology and tuition reimbursement. Other themes emerged as well. The researchers used *NVivo 10* software to qualitatively categorize and analyze the data. The purpose of this research was to give voice to faculty and students providing new insight regarding learning mode preferences.

Problem Statement

The problem of this research is to determine if students and instructors perceive that all learning environments are equally effective and if each group had similar views. Two sub-problems were also explored. The first sub-problem was to determine if instructors were competent with EV technology and if that perception was viewed similarly by faculty and students. The second sub-problem was if VA reimbursement policy impacted student choice

between learning modes. The purpose of the study was to provide the depth of scholarship to the topic that can only be afforded by using qualitative tools to assess the open response areas of the surveys.

Significance

Researchers applied systematic qualitative analysis tools to examine an unusually large number of undergraduate, graduate and faculty survey comments (n=887). Another unique feature of this research, as compared to previous research, was that perceptions from faculty, as well as graduate students, were analyzed. The distinction of surveying graduate students as well as faculty was recommended by Dunn in her research of ERAU undergraduate student perceptions (2013). This qualitative analysis yielded connections and themes not identified by the previous quantitative analysis of this survey data by Griffith and Schultz (2014). The researchers wanted to understand why faculty and students held their perceptions allowing for identification of improvement areas and possible forecasting of future behaviors.

Literature Review

Traditional classroom instruction is the standard by which new learning modes are measured. Online learning modes are asynchronous and tend to require more discipline and self-regulation from students, but also offer more flexibility. Instructor directed synchronous video learning provides a consistent meeting time and location, real time communication with the instructor and other students, and both verbal and non-verbal feedback (Lou, Bernard & Abrami, 2006). Social presence is a key component to synchronous video learning environments and their ability to duplicate traditional classroom in-person conversation and interaction (Locatis, Hammack, Smith, Maisiak, & Ackerman 2010; Skyler, 2009). The ability to see and hear the instructor and other students in real time allow for immediacy of communication and interpretation of nonverbal cues such as smiling and head nodding (Short, Williams, & Christie 1976; Yamada, 2009). In a National Taiwan University case study, Ko (2012) found that communication is more effective when the synchronous video learning environment has face-to-face video which fosters social presence. Ko also found that student participants preferred synchronous video learning to audio communications alone (2012).

Key Aspects of a Synchronous Video Learning Environment

Key factors of effective synchronous video learning environments include up to date equipment and effective e-learning software in direct support of faculty and students. Administration is typically at the forefront of new instructional technologies along with a small number of dedicated faculty. This was the situation with ERAU Worldwide campus who, in 2007, announced their collaboration with Saba Centra to offer EagleVision (EV) as their synchronous video learning system (Business Wire, 2007). This relationship of learning environment, faculty and students, is shown in the following figure.
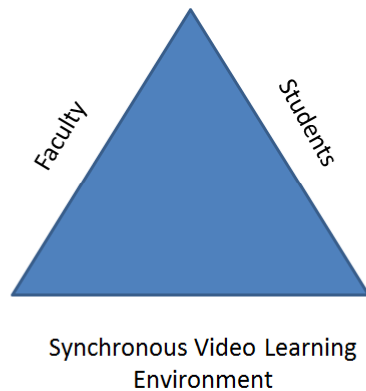
Figure 1. Key Components of Synchronous Video Learning.

E-Learning Platform and Synchronous Video Learning Environment

EagleVision was initially used in the EV classroom setting to support small campus locations. Currently, EagleVision has expanded to EV Home, so that learners can take classes with a headset and webcam anywhere they could secure a network connection (ERAU, 2013a). EagleVision enrollments grew from the single digits to tens of thousands over the past six years. ERAU's Worldwide campus has experienced a shift from classroom lecture courses to online and EagleVision (EV) courses. In 2013, over 59,000 (62%) of enrollments were for online or EV courses with the remaining 38% in classroom lecture settings (ERAU, 2013b).

Synchronous video learning environments are designed to facilitate real-time meetings and information exchange using audio and video (Hrastinski, 2008). They are typically coupled with distance learning platforms used for online instruction, which help with courseware access and asynchronous communication to supplement the synchronous learning software package.

Is one asynchronous learning platform superior to another? Faculty from 10 U.S. universities were asked which asynchronous teaching platform they preferred to use and which capabilities were most important. Over half of the 43 respondents had taught for over 10 years and 51% had used web-enhanced blended teaching methods averaging two years. The "most preferred (features) across nine courseware packages were usability, navigability, file interface and portability" (Causin, Robertson, & Ryan, 2008, p. 2). Although the study involved instructors using different courseware platforms such as Blackboard, First Class, LearningSpace and other university proprietary courseware, no single platform stood out. A possible reason was that they were all similar in functionality. Teachers would learn and use what was provided by their university, no matter which courseware platform was used (Causin et al., 2008).

Faculty. Attitudes play a factor in how e-learning is perceived and executed. A *Chronicle of Higher Education* article titled "Who is Driving the Online Locomotive*?"* written by a faculty member argued that college administrations and state politicians encouraged the shift as a money savings measure allowing more courses and degrees to be offered to a larger number of students in a cost effective way, possibly at the expense of quality (Jenkins, 2013).

Although not supportive of online learning, the article highlighted several issues. Attaining balance between quality, cost, and accessibility is difficult with shrinking state and university budgets. California is attempting to offer low cost online high demand courses for credit statewide through San Jose State University (Chea, 2013), while at the same time, disqualifying 154 schools from the Cal Grant program because of low graduation rates and high loan default rates. California's Governor wants to give the 23 campuses within the California State University system more funding only if they agree to hold costs and tuition down and increase online learning offerings (Hoag, 2013). Like Jenkins, some faculty members are resistant to these types of changes usually citing concerns about academic quality.

A study involving six university-colleges in Canada examined attitudes toward online learning based on responses from 346 faculty members and 36 academic administrators. Their responses were consistent with a larger 2006 study by Allen & Seaman concluding that although more universities were offering distance learning courses, not all faculty members were involved or supportive which impacted implementation in a negative way. The Mitchell & Geva-May study concluded that although not all faculty were involved or positive about new methods of instruction, their negativity would only slow implementation, not stop it (2009). Faculty buy-in is critical to success. Bernard, Abrami, Lou, & Borokhsvski (2004) reviewed 232 studies on the quality of distance learning education. One of their conclusions was that pedagogical excellence has a direct impact on instruction and learning regardless of the learning mode and should encourage learner interaction and effective processing of course content. Establishing skill sets for instructors in the synchronous video learning as well as online learning environments is key to ensuring instructors have the skills to effectively use distance learning tools such as synchronous video learning. It is important to identify those skill sets and train instructors to provide an effective learning experience (Bernard, et al., 2004).

Students. Students benefit from any preparation they receive regarding a courseware platform. In the case of ERAU, a webpage is designed to ensure students have the correct internet browser, computer system, and internet speed. Additionally, the university offers a test event called "EagleVision Pre-Flight," so students can log into a video synchronous learning event to ensure everything works and become familiar with the learning environment prior to attending an EV (synchronous video learning) class (ERAU, 2013a). Like ERAU, many universities have overcome resistance by funding and deploying stable learning platforms, supporting well trained faculty in delivering courses and by preparing students to take advantage of the new learning environments (Webb, Jones, Barker, & Van Schaik, 2004).

Previous Research on Equivalency of Learning Modes

One of the first synchronous video learning experiments was conducted at Pennsylvania State University over 50 years ago. Researchers concluded that there was no significant difference between classroom and remote site student performance. The video technology used at the time was closed circuit TV (Carpenter & Greenhill 1955:1958). As technology has expanded to offer more ways to offer education at a distance, more researchers have attempted to study the effects of using these technologies and instructors have had to learn new skills.

Lou, Bernard and Abrami (2006) conducted a meta-analysis of 103 studies which examined undergraduate student performance in distance learning settings. No significant degradation in performance was noted for online or remotely located students using synchronous video learning equipment. Lou et al., found that remotely located students performed as well as students at the host location where the instructor was located. Hrastinski (2008) analyzed 535 studies comparing exam and grade results between traditional classroom and e-learning environments. He noted similar results of no differences in performance based on mode.

Not all researchers have arrived at this conclusion. A meta-analysis by Bernard et al., (2004) of 232 studies conducted between 1985 and 2002 concluded that performances in different modes of learning were not equivalent. This study examined achievement, attitude and retention between classroom, asynchronous and synchronous learning modes. Asynchronous students performed comparably to traditional classroom students; however, synchronous video learning students performed "significantly lower" (p. 10). Another conclusion of this study was the difficulty of determining if modes of instruction were equivalent due to the variability of the methods used in each of the 232 studies analyzed. Students' rank order of learning modes were traditional classroom, then online, and finally synchronous video learning. This order of mode preference mirrors results found by Dunn (2013) and Griffith & Schultz (2014).

Embry-Riddle Aeronautical University Studies

Dunn's (2013) research on Embry-Riddle Aeronautical University Worldwide campus students involved examining 1,600 undergraduate grades from 2012 academic year data. There was a larger proportion of "As" in the EV Classroom mode than in traditional classroom, EV Home and online settings. There was a larger proportion of "Fs" in online modes than for traditional classroom or EV Home. Results were statistically significant for aeronautics, math, and management courses but not English courses when compared using Chi Square (n=400 from each course type, α=.05). Dunn also examined 1,398 student surveys finding no significant relationship when comparing learning mode (Lecture, Online, and EV Home) versus satisfaction with quality of instruction or course content.

Griffith and Schultz (2014) surveyed ERAU Worldwide faculty and students. Respondents included 667 faculty, (108 full time, 550 adjunct, 9 unidentified) and 1,751 students (733 graduate and 1018 undergraduate). Data in that study were evaluated using the appropriate Chi Square test, α=.05 (Gay, Mills, & Airasian, 2006). Faculty and students disagreed with the idea that learning modes (Traditional Classroom, Online, EV Classroom, and EV Home) were equivalent (p=.000). This perception held true when controlled for (just) those who had taught or taken EV classes. Faculty and students perceived that instructors were competent using EagleVision technology (p=.000) and this result was similar when controlled for instructors and students who had experience with EagleVision. Faculty and students also significantly agreed that adding a blended component was beneficial to the learning experience (p=.000). When controlled for students who had taken an EV class, however, students' level of agreement was not statistically significant (Griffith & Schultz, 2014).

The preferred modes of instruction and the mode that provided the best learning experience, according to perceptions of faculty and students, (in order) were traditional

classroom, Online, EV Home, and EV Classroom (p=.000). When controlled for respondents who had taught or taken an EagleVision course however, the order was different. Faculty and students ranked traditional classroom as most preferred learning mode followed by EV Home, Online, and EV Classroom. When compared directly, faculty (p=.001) and students (p=.000) perceived that EV Home was more effective than EV Classroom. This result held true for faculty (p=.007) and students (p=.000) who had experience with EagleVision. EV Classroom was the least preferred mode for student learning in all comparisons. Significantly more Veterans' Affairs funded graduate (p=.001) and undergraduate (p=.0358) students indicated they would select an EV Classroom course over EV Home based on increased Veterans' Affairs benefits for EV Classroom courses (Griffith & Schultz, 2014).

Summary of Literature Review

New technological advances of delivering instruction have always been compared against traditional classroom settings. Critical components of distance learning methods have focused on feedback, social presence, and ease of use. As students demand more flexibility and while federal, state and university budgets have tightened, university administrators and faculty have designed and implemented synchronous and asynchronous distance learning platforms. Resistance to change was greatly reduced through training and awareness of new systems. Research studies have offered mixed results on the equivalency of learning modes as well as faculty and student preferences. Lou et al., (2006) and Harastinski (2008) both conducted extensive meta-analyses finding no performance differences based on modes of learning. Different results were found by two Embry-Riddle Aeronautical University studies (Dunn, 2013; Griffith & Schultz, 2014) along with a meta-analysis of 232 studies by Bernard et al. (2004). These studies found that instructors and students believe modes are not equal and traditional classroom instruction is still the preferred learning mode. EagleVision Home was viewed as the second highest rated mode for best learning experience for those respondents with exposure to video synchronous learning, followed by Online and EV Classroom. Although EV Classroom was the least preferred learning mode, Veteran's Affairs students indicated they would select EV Classroom over EV Home specifically for economic reasons (Griffith & Schultz, 2014).

Methodology

Design

The study design can best be classified as descriptive (survey) and cross-sectional research. The researchers attempted to characterize the perceptions of Embry-Riddle Aeronautical University Worldwide Campus instructors and students (Gay, et al., 2006; Sekaran & Bougie, 2013). The survey was approved for use by Embry-Riddle Aeronautical University's Intuitional Review Board and was distributed for use via e-mail from November 2013 to January 2014. Respondents were assured that the research was voluntary and confidential (Griffith & Schultz, 2014).

Population and Sampling. Approximately 160 full time faculty and 2,000 adjunct faculty were surveyed yielding responses from 108 (67%) and 550 (27%) respectfully. Over 26,000 students were surveyed with 1,751 responses yielding an overall return rate of 7%

(Griffith & Schultz, 2014). Approximately two-thirds of the respondents (n=887) commented in the open response area of the survey. Researchers in this study examined the free comment area from 228 faculty and 659 students which comprised a subset of the surveys used in the 2014 Griffith and Schultz study.

Validity and Reliability. The survey was pilot tested by a panel of faculty, administrators and students. The pilot test group made recommendations that were implemented in the final version of the survey (Griffith & Schultz, 2014). Emphasis was placed on ensuring the survey measured what was intended and the meaning of the questions would not change over time. The 887 open ended responses provided by survey respondents were reviewed using software specifically designed for qualitative research to identify common themes (Gay et al., 2006).

Treatment of the Data

The researchers used *NVivo 10* software to focus on the qualitative nature of the instructor and student responses in the free response area of the surveys. Faculty and student comments were reviewed separately. Comments were examined one at a time. The first time a major theme was noted, it became a new category within each group. In this way, common themes and new categories were allowed to emerge. Themes that were repeated in subsequent comments were added to the appropriate categories. Some comments or portions of comments were coded into two or more categories (Gay, Mills, & Airasian, 2006). Respondent comments centered on learning mode preferences, instructor competence with EagleVision technology and tuition reimbursement. Other themes emerged as well.

Qualitative Research Results

Faculty Themes

Of the 667 faculty who responded to the survey, 228 made comments in the free response area titled "Please make any comments you wish to add." This question was designed to uncover instructor perceptions not previously uncovered in the survey. "Students" was the term most often used by faculty who included that term 118 times. The terms "classroom" and "online" were mentioned 111 and 72 times respectively. "Learning" was the fourth most common term appearing 64 times in faculty comments. Sixteen faculty themes were identified and shown in Table 1.

Six major themes stood out. They were; preference for face to face instruction, issues with EV equipment, and software, preference for the use of blended tools in courses, variation in modalities was good for student learning, expand EV Home, and notable EV classroom issues. Other themes were noted as well.

Preference for face to face instruction (45 comments). The largest theme by far was instructor preference for face to face instruction. Faculty who commented on this topic argued that face to face interaction allowed for better communication with students due to the physical presence of both faculty and students in a classroom setting. A faculty member summarized:

> The students I instruct either are active duty military or are retired military. All the students have expressed the comments that F2F [sic] (face-to-face) course are preferred if offered in a timely fashion. EVC is the second choice only because they need to finish their academic program. F2F offers the live interaction that is lost over other modalities.

Table 1

Faculty Themes

Theme	Total	Theme	Total
Prefer face-to-face	45	Dislike EV	9
Need better EV equipment/software	28	Modes not equal	8
Prefer Blended	19	Suggestions	8
Variety of modalities good for learning	18	Dislike online	6
Expand EV Home	18	EV training process suggestions	6
EV classroom issues	18	Math courses not good for EV/blended	4
Mode dependent on student/subject	11	Blended-contact time	3
Prefer Online	11	Faculty skills	3

Note. Common Themes from 228 Faculty Comments. Collection dates: Nov 2013 - Jan 2014.

Other faculty respondents stated that they believed online delivery was less expensive and were critical of the societal movement toward distance learning. Several comments were similar to: "Quality of education is reduced when you reduce the amount of face-to-face interaction." One faculty member argued that in distance learning, students have more responsibility for learning and faculty must use different teaching skills:

> The further away from the classroom the method of teaching becomes, the more dedicated and mature the student must be to match the learning level of equivalent lecture students and the more effort an instructor must provide to ensure the students are grasping the material and are benefiting from the delivery method.

Need better EV equipment and software (28 comments). Several faculty members commented that EagleVision equipment is more effective in EV Home settings than in EV Classroom. Comments discussed computer equipment, sound, picture and software issues. One faculty member summarized by stating: "EagleVision Classroom is only as good as the technology used. Out-dated computers, limited software, slow connection speeds, and 'make-shift' classrooms are NOT beneficial to this modality of teaching." Another comment was: "Seldom does a night pass without freezing video, poor quality video and/or audio, losing the system all together, feedback noise etc. It is a terrible system…students tell me they hate it." One instructor reiterated other comments by stating: "When EV is running well, education booms ahead. When there's 'technical difficulties,' everything grinds to a halt. It's frustrating to teachers and students alike!"

Preference for using Blended tools in a course (19 comments). Faculty comments supported the use of blended course delivery. Arguments included that blended was a good mix of classroom learning with technology and that blended could be used as part of an online course for video synchronous contact with the instructor. Several instructors commented that class sessions of 4 hours and 45 minutes were very challenging due to the fact that most students had worked all day and were tired during class. One faculty member summarized: "Blended classes are critical to combat classroom fatigue." Most faculty argued that Blended delivery mitigated these issues by reducing face-to-face class time to approximately 3 ½ hours which, with the blended component outside of class, would provide a richer learning experience. One faculty member commented: "I have taught over 150 classes for ERAU over the years...and this new 'Blended' EVH seems to be a winner... as long as the instructor has control." Another commented: "All classes should utilize online content to some extent."

Variety of modalities good for student learning (18 comments). Along with support for the use of blended tools in the classroom, many faculty argued that a multi-modal approach to learning was good for students because it combined different learning styles and also made good use of technology. One faculty member stated: "In this global market place, students need to also have technology skills. Blended seems to offer a marriage of both skills that students need (in person and online)." Another faculty member agreed by writing: "I love the technology and modes offered at ERAU - they add much to the learning and teaching experiences."

Expand EagleVision Home (18 comments). Comments regarding this theme were very supportive of EagleVision home due to the convenience of both instructors and students attending class from home. The video synchronous format allowed for "social presence" enhancing communications for all involved. One instructor noted that "Eagle Vision Home would be the best for student retention and mode of learning style." Another comment was "EV Home allows students to be comfortable, and therefor enhances learning." Many emphasized that with EagleVision home, students are all on the same footing since they all had a webcam, microphone and could see the instructor and each other.

EagleVision Classroom issues (18 comments). EagleVision classroom typically has an instructor and part of the class in one location, and one or two remote sites with groups of students at each site. In the remote sites, several students share a camera and microphone requiring more effort for students to be seen and heard. An instructor stated "EV classroom is usually inadequate for good video monitoring of what occurs in a classroom." Several instructors expressed the idea that students at the same location as the instructor had an advantage due to proximity and ease of communication. All students were not on the same footing and were not getting the same learning experience. Comments such as "EV classroom makes it hard to get one-on-one with students" were common. One instructor elaborated;

> My experience with Eaglevision classroom is that the remote locations suffer greatly. The technology had problems and it was difficult for the class to partake in the discussions. I personally think Eaglevision Classroom should be eliminated. An EV Home course would be preferable because at least each student has their own computer so it would be easier to hear and participate (since they have their own keyboard).

A faculty member went further by stating; "If it were not for the VA student in search of a housing stipend, EV/C would not exist."

Other trends noted. Comments on several other trends were not as prevalent in the respondent comments, but still require discussion.

Mode effectiveness dependent on students and subjects taught. Eleven faculty members stated that the best mode to use depended on the students experience and subject taught. Emphasizing student experience, one faculty member stated; "Not all venues are good for all students. Some just cannot do online if they are not disciplined and most students should take some classroom courses at the beginning of their college experience to get oriented to the experience." Another comment summarized; "It is the Student [sic] themselves who make the difference on which type of course works best for them. It is not necessarily the instructor or mode of class. It is the capability of the student." Matching modality to subject was also discussed by several respondents. Comments such as "I believe the medium is different between classes, and some courses are better in the face-to-face format…I think the RSCH 670 course is better in the online format than it would be when given face-to-face." A faculty member further commented on the responsibilities for faculty:

> We need to make all four (modes) available to meet the student's needs. Often a course may not be available for classroom, but available online or EagleVision. It is the instructor's responsibility to ensure the student has access to the instructor in those EagleVision and online classes.

The preference for Online mode (11 comments). The asynchronous aspect of online learning and subsequent flexibility offered to students in that learning mode was frequently cited by instructors in support of the online learning mode. One instructor highlighted this idea when stating; "If you consider students' personal needs for flexibility, geographic mobility, etc. what is "best" for that student may be online."

Modes not equal (8 comments). Several faculty members stated that there were differences in modes of instruction. These arguments were based on perceived differences in interaction with students and effort required from instructors. One instructor summarized; "Teaching tasks are not equivalent and the amount of work and effectiveness of the teacher are not equivalent across modes."

Suggestions for improvement (8 comments). Some faculty responses offered suggestions for improvement. The use of rubrics in all modes was suggested to keep grading expectations standardized. One faculty member suggested;

> Testing for online courses should be more writing based with discussion questions rather than fill in the blank and multiple choice. It is harder to determine a student's true grasp of the material when tests become completely open book and look up the answers.

Other comments included focusing students on writing skills and APA style like what is being done with a recently added Research 202 course. One suggestion was to have students take the Research 202 course or an English class before any other coursework. With regard to suggestions to improve instructor skill with EagleVision (6 comments), one faculty commented; "We need to keep offering live Blackboard and Eagle Vision training classes to keep instructors truly competent in these technologies." Another faculty agreed by stating; "I think more college specific EV training should be done with respect to ways to use EV tools. Teaching math and teaching Organizational Theory are two different worlds on EV."

Overlapping trends. Faculty noted some trends that overlapped. Six faculty comments indicated a dislike for online instruction noting interaction issues. Four comments discussed the difficulty in teaching math classes over a distance learning format. Three comments addressed the need to ensure appropriate contact time with blended courses.

Summary of Faculty Comments. The most common theme was a preference for a face-to-face classroom environment. Two major reasons were cited; better interaction with students and a perceived higher quality of education. The next most common theme was the need for better EV equipment and software. Several faculty members stated that EV equipment was better suited to EV Home than EV Classroom. Other comments centered around connectivity issues with the EV systems, which is reliant on internet connections. Instructors expressed a preference for blended learning. A separate, but related, idea was that a variety of modalities were seen as beneficial for student learning. A good number of faculty also encouraged the increased use of EV Home due to its video synchronous format because students could interact on an equal basis with everyone else in the class. EV Classroom received mostly negative comments due to the perceived difficulty of interaction with students at remote locations. One faculty member stated that VA students preferred EV Classroom, considered in-resident by the VA, due to the increased housing stipend received over online or EV Home "distance learning" courses.

Faculty comments also stated that the (best) learning mode was dependent on the students and the subject of the class as well as instructor competence. The asynchronous aspect of online learning was seen as a benefit to students due to its flexibility. The need for continuous training to keep up with Blackboard and EagleVision changes was mentioned by several instructors acknowledging that different skills are needed in the different teaching environments.

Student Themes

Of 1,751 students who responded, 659 made comments in the free response area. Several different forms of EagleVision were used 406 times. "Classes" was the second most popular term used by students (328 times). The terms "courses" and "time" were mentioned 227 and 207 times respectively. The five main categories of comments were: EagleVision Satisfied (EV – Sat), EagleVision Unsatisfied (EV-Unsat), Online Satisfied (Online –Sat), Online Unsatisfied (Online – Unsat), and Other. Sub-categories were used within each main category. These sub-categories were: course, instructor, technical issues, and time/work. Results are shown in Table 2.

Table 2

Student Themes

Theme	Sub	Total	Theme	Sub	Total
EV – Satisfied		42	Online - Satisfactory		106
Instructor	11		Time work	91	
General	10		Course	8	
Time work	9		Instructor	5	
Technical issues	7		General	2	
Course	5				
			Online – Unsatisfactory		117
EV – Unsatisfied		118	Instructor	59	
Instructor	41		Course	58	
Technical issues	34				
General	19		Other		269
Course	18		Classroom	93	
Time work	1		VA benefits	61	
			No EV Experience	31	
			No Online experience	14	
			Miscellaneous	9	
			Term lengths	7	
			Challenge exams	2	
			Nonspecific comments	52	

Note. Common Themes from Student Comments. Collection dates: Nov 2013 - Jan 2014.

The following summaries encompass the sub-categories of each main section.

EagleVision – Satisfied (42 comments).

EV- satisfied - Instructor (11 comments). Students commented that their ability to interact in real time with their teacher was extremely valuable. As to whether EagleVision Home (EVH) or EagleVision Classroom (EVC) had better interaction, the comments were evenly split. Some students stated that they believed the participation and involvement they received from the instructor and fellow students was better in the EVC course: "The eagle vision home is fine, but I thought there was a little more student interaction with the eagle vision classroom [sic]." Other students believed that EVH permitted a great amount of interaction with their professor and fellow students just by meeting at a set time once a week.

EV- satisfied - General (10 comments). Students commented that they enjoyed taking EV courses. A few students stated that they wished more of their classes within their major were offered via EV. One student commented; "I wish I could take the rest of my classes this way."

EV- satisfied - Time/work (9 comments). The time/work sub-category had responses listed ranging from the amount of coursework required to instructors with more sympathy. There was a separation of EVH and EVC courses in this specific area, as many comments

referred to the flexibility it afforded them by not having to travel to attend an EVH class. EVC courses require students to attend a traditional class setting with remote locations linked together.

EV- satisfied - Technical issues (7 comments).   Students enjoyed EV courses but a few complained about technical issues. Comments included problems with Saba software and the connection to other remote locations with an EVC course: "I feel for those students in (campus) who have paid premium dollars for graduate work…not getting high quality education directly because of IT failure (probably due to local bandwidth issue)."

EV- satisfied - Course (5 comments). Several students indicated they learned best in an EV format suggesting EV allowed them to use several senses and was best for visual learners.

EagleVision – Unsatisfied (118 comments).

EV unsatisfied - Instructor (41 comments). Overwhelmingly, the students pointed to issues that they experienced in EVC classes. Students shared experiences where teachers read from PowerPoint slides and used no videos or other technologically advanced methods during the class. Some instructors were late to post assignments and open course materials because they did not know how to use the system. One statement discussed how an instructor used the whiteboard in the main location, but since the camera was not pointed at it, none of the writing was captured and shared with the linked classrooms. The student went on to state that the whiteboard within EV should always be used so that all students can see the material. Students repeatedly wrote that instructors need a firm grasp on EV prior to teaching with it.

In addition, students felt that accountability and learning was lost when an instructor was not in the classroom. One student summarized;

> Up until now I've taken 3 classes as Eaglevision class and I have to say that I don't think this method is that much more effective than an Eaglevision home. In fact, I believe it is less effective due to the fact that a lot of classmates take the chance that the teacher is not watching to carry (engage in) side conversations, which ended up causing distractions. All 3 classes I had ended up having the same issues. I always end up reviewing the playback at home at a later date. I really think EagleVision Classroom is a waste of time.

Other students mentioned that they try to ask questions during class and after via email, but either do not receive a response or wait days until instructors respond.

EV unsatisfied - Technical issues (34 comments). Comments regarded issues with both EVC and EVH. Common technical issues ranged from outdated equipment, connectivity issues with the Saba Centre platform, constant upgrades, and problems due to bandwidth limitations. Students often stated that a sizeable amount of time was spent addressing technical issues in their EVC and EVH courses. The best example of EVC issues was presented clearly by one student:

> The Eagle Vision Classroom at the (campus) teaching site was very poorly set up & not maintained. The sound system consisted of a pair of cheap outdated computer speakers that weren't loud enough to hear past the first row of desks. Distracting paint scheme on the front wall and stained smart board were very distracting.

An interesting statement came from a student who said that they had an EVC class cancel due to the technology not working correctly and requested a backup plan be devised for such instances.

> You need a backup plan for when eagle vision classroom fails. Last week the network for my eagle vision class was not running to par so they canceled class…I took initiative to ask the library for permission to use one of their computer rooms so I can attend my eagle vision class…I was able to attend my class, but unfortunately, only one other student followed me.

EV unsatisfied - General (19 comments). Several students stated they generally disliked EagleVision. One student complained about the time needed to sit in a three hour long EV class and did not want to take another EV course, as they might as well have "been in a classroom."

EV unsatisfied - Course (18 comments). Some students stated that there tended to be too many assignments in EV classes. One student argued that the workload in an EVC blended course was that of two classes at one time – one with an instructor and one online, which was not fair to working students. A couple of students directly pointed to group work as an issue stating that while it works well in a traditional classroom, it is "problematic in EV classes."

Online – Satisfied (106 comments).

Online satisfied - Time/work (91 comments). The biggest satisfaction with online learning is the flexibility that it affords students as working adults attempting to balance work, family and studies. Many travel for work or are military; therefore the ability to learn "from anywhere in the world at any time" suits these students. One student said they transferred from a state university because ERAU online courses allow the individual to "work a full time job, take 4 courses each term and…graduate in just over 2 years…and lead a normal life [sic]."

Online satisfied - Course (8 comments). Students commented how the modules are clearly laid out with all readings and assignments defined which allows students to know what is expected of them weekly and the course runs "smoothly."

Online satisfied - Instructor (5 comments). Some students wrote that instructors responded quickly to online student questions and assisted via e-mail and/or Skype.

Online satisfied - General (2 comments). Two students noted how the online learning environment, via Blackboard, allows them to do their work without any issues. They believed online enriched their learning: "Online classes when done correctly by the student is [sic] better at developing critical thinking skills and mastery of the subject matter." These students enjoyed the "learning at their own pace" flexibility that the weekly modules provided.

Online – Unsatisfied (117 comments).

Online unsatisfied- Instructor (59 comments). Most comments within this sub-category were that instructors were not engaging, active or even experts in the class material. Complaints

were made from the lack of activity on the discussion boards to the limited, if any, feedback provided by the faculty. This level of idleness spoken of by the students was often reflected in their use of the term "self-taught" or reference to classmates assisting others. Many stated they only had communication via email and had to wait for days for a response. One student was so upset by the response they received from an instructor they dropped the class:

> …Speaking to the instructor was via email, and was basically a rude, scathing email from the instructor which resulted in my dropping the class and taking 1 1/2 years to sign up for another course. At this point I will only take courses where I can have virtual or face-to-face actual conversations with the instructor and weekly classes. Instructing by message boards is very impersonal and not conducive to learning, in my opinion.

Students wanted instructors to be active in the course by posting lectures or additional materials within the class and by fostering open communication with their pupils.

Online unsatisfied- Course (58 comments). Students complained about group work and the number of weekly assignments, readings and papers required. They argued there is too much to do within a nine week term and that the course builds in unnecessary work. A student stated;

> ….they seem to overcompensate for not having you (student) in the classroom by giving you assignments every week, to the point that makes the course more exhausting than what it should be. In my opinion, instead of bombarding the student with papers and all sorts of assignments, it would be best to provide more media…visual presentations.

One student commented that course monitors create the course but many instructors who teach the course are unfamiliar with course content. The main argument was that each instructor should create their own lectures in order to educate themselves about the subject and homework at hand; thus, enhancing their ability to assist students with the course content. Other respondents stated that grades were based primarily upon American Psychological Association (APA) formatting rather than course content.

Other (topics).

This category had 269 comments sub-categorized into Classroom courses, Veteran Administration (VA) benefits, course term lengths and challenge exams.

Other (topics) - Classroom (93 comments). The most popular argument for traditional classroom courses was that quality of the education/instructors was far superior in a classroom and the format provided a better learning environment where the pupils absorbed more. A few commented that EVH and EVC were "comparable" to face-to-face, but these claims included qualifiers such as not as "adequate." Many students enjoyed having a lecturer to whom they could easily ask questions simply by physically raising their hands. Students questioned why the other modes of learning were so much more expensive. A student wrote that the capability to take courses in a face-to-face environment was "one of the main reasons" they chose to attend and that option "….seems to be becoming a thing of the past." Additional respondents echoed this belief: "I notice ERAU is moving away from this (classroom) but I am convinced it will

diminish the overall quality of educational experience." A few students requested additional courses taught in the traditional format at their campus locations or for VA reimbursement reasons. One student drove two hours to a different campus to learn in a classroom setting.

Other (topics) - VA Benefits (61 comments). Reimbursement of full VA benefits (housing allowance) was the foremost concern of most VA students. VA students receive lower reimbursements when taking online and EVH courses. One student stated that he receives fewer benefits for taking an online class, in which he must work harder to do well, and is unable to take other modalities that often because he is stationed in Germany. Another student stated that their campus hardly offers any classes at all and so they are forced to take online or EVH. He wanted to have ERAU change "my VA benefits to receive my full [housing] stipend…it is not fair that EVH is considered online." Another student actually provided financial information regarding their benefits received at taking classes at certain places: "In my area taking an online course cuts my REAL BENEFITS by over half. $714.50 for online courses, $2193 for Andrews AFB and $1575 at Pax [sic] River." While another student reasoned that the benefits should be based upon the student's status: full time or part time. The most interesting criticism came in the form of an argument as to why EVH should be considered for the VA money:

> You still are required to be logged on, on camera sometimes and participating with class discussion. The same as actually sitting in the classroom... (with) online (classes) you can login and out whenever you want. EVH you have to be logged in 3-5 hours at a designated time so you should be able to get the same benefits as the in-class offerings. I HIGHLY recommend including (classifying) EagleVision Home classes as part of the 'Campus' learning so that VA benefits can be applied to 'Full Time' students utilizing the EagleVision Home portion of the enrollment.

Some argued EVH and Online courses are academically rigorous enough for full VA benefits.

Other (topics) - Term lengths (7 comments). Most of the comments dealt with the change from twelve to nine week term lengths, but one was specific to when classes began and ended. Although the change from twelve to nine week course term lengths happened a few years ago, students believe that the shortening of the terms is detrimental to their learning. One student commented; "I feel that the instruction (which was already rushed at 12 weeks) has now even less in-depth coverage…I am afraid I may not have in-depth knowledge of many subjects". Other students mentioned that the nine-week format made it difficult for the non-traditional learning adult to balance home, work and college.

Summary of Student Comments. Students seemed to appreciate that ERAU has various methods of delivery with learning, but that they are not ecstatic with the decline in the traditional face-to-face classes. They are concerned with the seemingly constant technical issues that plague the EV courses. The Online mode was called the "most demanding" by many students due to the amount of work required. Several students suggested that some online activities be replaced with supplemental materials (videos, etc.) to even the perceived workload differences between online and EV courses.

Discussion

Most respondents believed that interaction between instructors and students was important. This underpinned arguments in favor of Classroom and EV Home which were viewed as the two best modes for interaction. Both faculty and students argued that instructors should be adequately trained to use EV equipment and have a good working knowledge of online content. Both groups identified the Online mode as being the most flexible way for students to take a course. EV Classroom was not as highly regarded for interaction due to equipment limitations. The use of blended tools was mostly viewed as a positive course addition by both groups.

Several faculty members recommended the increased use of EV Home since this mode eliminates distance restraints (from campus) and the required course equipment is very common to most students. Some faculty members also commented on the difficulty of teaching math courses online or through EagleVision.

Many students commented that the workload for online courses and some blended courses was excessive. A few students complained that instructors were not proficient in the use of EagleVision equipment and are merely graders in online courses. VA funded students indicated they would take an EV Classroom course rather than an Online or EV Home course for the higher reimbursement.

Conclusions

Faculty and students emphasized the need for interaction in synchronous learning situations supporting the concept of social presence noted in previous studies (Ko, 2012; Locatis et al., 2010; Short et al., 2009). Positive comments regarding EagleVision Home and most issues noted with EV Classroom revolved around the perceived ease or difficulty of real-time interaction. This finding supports previous research conducted by Dunn (2013) and Griffith and Schultz (2014). Technical issues were seen as the main reason EV Classroom courses were the least popular mode of instruction which corresponds with previous findings (Dunn, 2013; Griffith & Schultz, 2014). ERAU-Worldwide is conducting pilot tests on upgraded software and equipment to improve the EV Classroom experience in 2014; the results of which were not measured in this survey. Faculty training for EagleVision was mentioned by both faculty and students as a key factor to assure quality in course delivery. Griffith and Schultz (2014) found that most faculty ($p=.000$) and students ($p=.000$) agreed that faculty were competent in using EagleVision equipment supporting the idea that EagleVision training and instructor efforts to embrace this technology are effective. Some faculty, however, commented that too much time elapsed between the training and when an instructor taught their first EagleVision course. Delays were usually due to a course cancellation after the instructor was EagleVision certified. Some students also commented on instructor competence issues with EagleVision technology. Students stated that the workload of online courses was higher than other modes. Additionally, some VA students would select a less desirable mode of learning (EV Classroom) due to increased VA reimbursement. This was also a statistically significant finding (undergraduate $p=.0358$ and graduate $p=.0001$ students) in the Griffith and Schultz (2014) quantitative analysis.

So much of faculty and student perception in this analysis was based on the application of technological tools in the academic setting. It should be noted that Embry-Riddle has an accomplished record for distance learning. Awards include a Blackboard Catalyst Award (ERAU, 2012) and a 2008 Saba Award for the deployment of EagleVision (ERAU, 2014). Additionally, the Worldwide Campus was ranked as the fifth best online Bachelor's degree programs in the United States (U.S. News and World Report, 2014). When comparing the results of this research with other universities, it should be noted that Embry-Riddle Aeronautical University's Worldwide Campus has a term length of 9 weeks and a non-traditional student body.

Recommendations for Further Research

Embry-Riddle Aeronautical University should continue to communicate why 9 week terms are beneficial for students (5 terms per year, more timely degree completion). ERAU should also consider communicating the results of this research to the Department of Veterans' Affairs with regard to making EagleVision Home reimbursable for the full housing allowance similar to EV Classroom and lecture formats.

Researchers should continue to study faculty and student perceptions with regard to learning modes, learning mode preferences and faculty expertise with technology. Future studies should not only seek to identify what student and instructor perceptions are, but why they perceive ideas the way they do because perceptions can forecast future behaviors.

The distributed learning model has a heavy reliance on technology. As new technology is deployed, such as updated equipment for ERAU's EagleVision Classroom, studies should measure changes in faculty and student perception as well as student performance when comparing the effect of old technology to new. Future researchers should also incorporate qualitative analysis, as well as quantitative, to gain a more complete assessment of faculty and student perceptions.

Authors' Note and Biographies

This research project was selected for the 2014 Vance Mitchell Award at the 22nd annual Bollinger-Rosado Teaching and Learning Effectiveness Symposium, Embry-Riddle Aeronautical University, Daytona Beach FL.

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