Success of Achieving Student Learning Objectives: Compressed vs. Traditional Courses

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Institutions of higher learning are offering varying course modalities to accommodate the changing needs of students. Student population demographics are evolving, and institutions of higher learning are adapting by offering a different mode of course delivery. Non-traditional students are a growing segment of the higher education demographic, and these students typically do not have the flexibility to attend courses offered in the traditional 16-week semester schedule. As a result, institutions of higher learning are offering an increasing number of compressed courses to meet student demand and remain competitive in higher learning.

According to the Postsecondary National Policy Institute, nearly 34% of students enrolled in higher learning coursework are considered non-traditional students (PNPI, 2023). This statistic is based upon a broad definition of a non-traditional student that includes characteristics such as age, employment, and financial status. Compressed course schedules can be advantageous as they allow the non-traditional student to focus on fewer classes at one time. The compressed schedule courses provide the same number of contact hours for the students as the traditional 16-week schedule yet does so over a shorter period. Nevertheless, it is a requirement for the compressed courses to provide equivalent student learning outcomes (SLOs), as well as the same course content. In addition, compressed courses require students to complete comparable performance assessments such as writing-based assignments, quizzes, and examinations (Choudhury, 2017).

The findings presented in this study expand upon previous research that sought to determine if there was any variance in final course grades between two groups of students completing the same course in two different modalities. There was no statistically significant difference between the two groups of students, suggesting that the modality of the course did not result in meaningful differences in the final course grades (Miller & Bliss, 2023). However, final course grades should not be the only measure used to determine the effectiveness of course modalities. A closer analysis of student grades on course performance assessments, and the corresponding SLOs, may provide more beneficial insight when determining the effectiveness of various course modalities.

Statement of the Problem

Because the Southern Illinois University (SIU) Aviation Management (AVM) undergraduate degree program has two modalities, on and off-campus, SIU must provide evidence that assessment will be consistent across both modes of delivery and all locations (SIU Provost and Vice Chancellor for Academic Affairs, n.d.). Furthermore, every year the AVM program must submit an Annual Assessment Report to the Associate Provost for Academic Affairs. The Annual Assessment Report includes (1) assessment of SLOs and (2) curriculum or program changes.

SIU and many other universities are offering an increasing number of classes with compressed schedules to increase student enrollment (Krug et al., 2015). The increase in the number of compressed classes presents the challenge of ensuring that similar academic rigor and breadth of knowledge are maintained in comparison to the traditional 16-week semester. As an increasing number of students pursue classes with compressed schedules, it is difficult to ensure that these students are receiving a similar quality of education as the students who pursue the traditional class format. One method to validate the parity of the two modalities is to evaluate student performance. For this reason, it is necessary to compare student performance at the SIU AVM off-campus locations with AVM students at the SIU main campus.

Purpose of the Study

The purpose of this research study was to determine if students enrolled in off-campus classes with compressed schedules were achieving equivalent student learning objectives (SLOs) as students enrolled in traditional on-campus 16-week courses. This study compared the course performance assessments of two groups of undergraduate students enrolled in the same SIU course delivered in two different modalities. The students were enrolled in the AVM 305: Aviation Industry Career Development course taught in the traditional 16-week classroom setting on the SIU main campus and taught to students enrolled in the off-campus compressed course (three weekends) at the Community College of Beaver County in Pennsylvania. The courses used the same course content and were taught by the same instructor.

Research Question

The following research question was addressed by collecting and analyzing performance assessment data, and information from the student surveys collected from undergraduate students enrolled in SIU AVM coursework:

1. Are students enrolled in compressed off-campus courses achieving equivalent student learning objectives (SLOs) as students enrolled in traditional on-campus courses?

    a. Null Hypothesis *(HO)* – There is no statistical significance in students enrolled in compressed off-campus courses achieving equivalent student learning objectives (SLOs) as students enrolled in traditional on-campus courses.

    b. Alternative Hypothesi*s (H1)* - There is statistical significance in overall student academic performance regarding specific performance assessments and the corresponding SLOs between the two student groups.

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Significance of the Study

Focusing on the student learning objectives and the assessments used to determine if the student learning objectives were successfully achieved will allow faculty to adjust pedagogy, ensuring parity between the two modalities.

Limitations

This study is limited based upon the voluntary participation of two groups of collegiate aviation students. One group consisted of collegiate aviation management students located at the SIU main campus and the other group consisted of collegiate aviation management students located at an off-campus location at a community college in Pennsylvania. In addition, this study is limited by certain uncontrollable variables that cannot be accounted for such as student motivation, commitment, and academic aptitude.

Literature Review

Traditional vs. Compressed Courses

Questions have been raised by the collegiate academic community regarding the relationship between course length and course success. Previous studies indicate those students enrolled in compressed courses have similar, or slightly better, overall grades than those students enrolled in the same course with a traditional schedule (Holzweiss et al., 2019). Do students enrolled in compressed courses simply memorize the material quickly and perform well on examinations, due to the benefits of short-term memory? The scores earned on course assessments, such as quizzes and examinations, may provide some insight regarding short-term memory and assessment scores. Data needs to be examined to determine if there is any variation between student success in the two course formats. Furthermore, the possible causes for any variations need to be analyzed.

The compressed format may assist students in remaining focused during the course; however, the reduced length of time to complete the course may overwhelm some students. The optimal learning environment is not the same for all students. For example, one factor that may contribute to students being overwhelmed in a compressed course may be related to the spacing effect. The spacing effect is "a cognitive phenomenon in which distributing to-be-learned information across time in short, interrupted study sessions leads to better long-term retention than continuous, massed sessions" (Spacing Effect*,* n.d., para.1). Other students perceive compressed courses to be less challenging than their traditional 16-week counterparts and promote a more productive learning environment (Carman & Bartsch, 2017). Due to the spacing effect, it is debatable that students who complete compressed courses able to retain the materials learned for future use as well as those who completed the same course in a traditional format. Due to the spacing effect, students may have increased long-term memory of the course material delivered in the traditional format (Williamson, 2017).

Advantages & Disadvantages

There are many advantages associated with compressed courses. First, compressed courses provide flexible schedules that work best with the schedules of non-traditional students. According to the National Center for Education Statistics (NCES) non-traditional students are those individuals who are over 24 years of age (NCES, 2023). This demographic is increasing as non-traditional students now account for approximately nearly 34% of all college students in the United States (PNPI, 2023). The number of non-traditional students pursuing a postsecondary education in the United States has been steadily increasing (NCES, 2023). Institutions of higher learning are trying to attract and recruit the growing population of non-traditional college students. Institutions are trying to achieve this goal by offering flexible course schedules and adjusting the delivery of the degree programs to accommodate those non-traditional students that have jobs. Carmen & Bartsch (2017) and Anastasi (2007) list other advantages to compressed courses such as: (1) the ability of students to quickly build a relationship with professors, (2) an increased focus on learning outcomes by students, and (3) increased interaction and participation in class by students.

Moreover, students found an increased focus on their coursework during the compressed schedule as opposed to the traditional courses. As a result of the short schedule and increased focus, students reported less procrastination in completing their coursework and an overall better learning experience (Krug et al., 2015). In simple terms, students in compressed formats do not have the opportunity to procrastinate due to the compressed timeline. These benefits may be attributed to the fact that when taking compressed courses students are enrolled in fewer classes at one time. Taking fewer classes allows students to focus their efforts on only one or two classes at any given time. There are also several disadvantages associated with compressed courses. Students need to abate these disadvantages to be successful in compressed courses. Almquist (2015) and Krug et al. (2015) listed a few disadvantages of compressed courses.

1. Student concern related to the amount of course material that needs to be learned within the compressed timeline.
2. Some students reported increased mental and physical fatigue.
3. Students have less time to study and comprehend the course material.
4. Students can quickly fall behind in the course.
5. Not all students possess the motivation and discipline to be successful in a compressed course.
6. These courses may not provide the academic rigor and breadth of knowledge provided by the traditional 16-week courses.

It is important to note that although the number of contact hours are the same for both formats, many faculty believe covering large amounts of course material during a compressed timeline will abate the educational value of the course. This

illustrates why faculty are often opposed to changing from the traditional 16-week format to compressed formats for the course delivery method (Almquist, 2015).

Southern Illinois University

This study compares student performance at a Southern Illinois University (SIU) AVM off-campus location with the AVM students at the SIU main campus in Carbondale, Illinois. The off-campus location is at the Community College of Beaver County in Monaca, Pennsylvania. Those students at the off-campus locations are enrolled in compressed in-person classes, while those students at the main campus are enrolled in the traditional 16-week classes.

The AVM students in the off-campus program complete all the required AVM courses utilizing the compressed format. The students complete three courses during the 16-week semester; however, they are enrolled in only one class at a time. Students meet on Saturdays and Sundays, every other weekend, from 8:00 A.M. until 4:50 P.M. for six weeks. The information and schedules for the AVM 305 courses during the fall 2021 semester for both modalities are provided in Table 1.

Table 1

Schedule & Information of the Two Modalities

	On-Campus Modality	Off-Campus Modality
Location	SIU Main Campus – Carbondale, IL	Community College of Beaver County – Monaca, PA
Student Enrollment	26	14
Instructor	Same	Same
Curriculum	Same	Same
Course Materials & Assessments	Same	Same
Semester	Fall 2021	Fall 2021
Schedule	Every Tuesday for 16 weeks – 3 hours per class	Saturday & Sunday for three weekends – 8 hours per class
Contact Hours	48 Hours	48 Hours

Student Learning Outcomes, Performance, & Assessment

It is important to distinguish between SLOs and grades. The SLOs are what the student is expected to learn. The SLOs define what students will know and the observable skills acquired after course completion. The SLOs for AVM 305: Aviation Industry Career Development course is provided below.

1. Ability to communicate orally and in writing in formal and informal situations.

2. Describe the scope of aviation management career options and demonstrate the importance and need for life-long learning and professional development.
3. Make professional and ethical decisions.

SLOs provide evidence that learning has taken place during the course (Oxnard College, n.d.). The SLOs prescribed for the courses in this study were the same. The student performance assessments allow the faculty to determine if student learning objectives were achieved. Grades evaluate student performance and quality of a student's work. For this study, grades were used to determine if the SLOs were achieved.

It is imperative that compressed courses be equivalent to the courses offered during the traditional 16-week semester. Several factors require consideration to ensure parity of compressed and traditional courses. The compressed courses must maintain similar academic rigor and breadth of knowledge as their traditional 16-week counterparts. Academic rigor is a standard of quality that faculty expect of their students. The standards to measure academic rigor can vary in objectivity based upon the performance assessment used (Williamson, 2017). Breadth of knowledge refers to the extent or span of knowledge which a student possesses about a subject.

The ability of students to meet or exceed academic standards is influenced by the quality of the learning experience received by the student. The quality of the student learning experience is influenced by the characteristics of the faculty, teaching methods, classroom environment, and evaluation methods (Scott, 2003). Faculty are responsible for the overall learning experience provided to the students. It is essential that faculty have an enthusiasm for teaching the students. Faculty must also be willing to learn from and engage with the students. Moreover, student orientation is necessary because students need to know that the faculty cares about them and wants to assist in the achievement of their educational goals (Scott, 2003).

Methodology

Research Design

A mixed methodology approach was used in this study because it enabled the research to collect both quantitative and qualitative data. The student performance assessment data does not tell the entire story. The quantitative data of student performance assessments provide information that can be vague; however, qualitative inquiry allows the researcher to uncover latent patterns that may provide accurate answers to research questions. The qualitative data was collected through the student surveys consisting of closed and open-ended questions.

This study focuses on the academic performance of students enrolled in off-campus compressed classes compared with the performance of students enrolled in on-campus traditional semester-long classes. As stated previously, the purpose of

this research was to determine if there are variations in student performance based upon the course schedule used to deliver the course materials. It is crucial that comparable SLOs be achieved in both modalities. Actions cannot be taken to achieve parity between the two student groups without an accurate analysis of the factors that contribute to this variation in student performance. This research attempts to uncover factors, previously not considered, that are contributing to any significant disparity in student performance. A mixed methodology was used for data collection, as the researcher was applying quantitative and qualitative inquiry during the study. The purpose of the mixed-method research approach was to determine if there are variations in student performance based upon the course schedule used to deliver the course materials.

Population & Sample

This research used purposeful and comparison-focused sampling. "Comparison-focused sampling looks in depth at the significant similarities and differences between cases and the factors that explain those differences" (Patton, 2015, p. 277). This research used the comparison-focused sampling strategy with attention to the matched-comparisons approach. Purposeful sampling focuses on a smaller sample to allow for an extensive analysis (Creswell & Creswell, 2018). Qualitative inquiry allows for an in-depth study of both groups of students. This study would not be possible if a large sample size was used. The smaller sample size allows for focus on the trends involving behavior and characteristics of the students and discover details not provided in previous research (Wiggins & Stevens, 2016).

Procedures & Data Collection

The pre-course survey was completed by most of the students; one on-campus student and one off-campus student did not complete the pre-course survey. On the last day of class all the on-campus students completed the post-course survey, but two off-campus students did not complete the post-course survey. The data from the research study was collected through course surveys. The student course surveys provided a great deal of qualitative data about the students that could not be realized through student performance assessments. Specifically, the student pre-course survey collected information such as demographics, educational history, and other pertinent information.

Research Instruments

The student pre-course survey consisted of 12 closed and ten open-ended questions for a total of 22 questions. The student post-course survey consisted of ten Likert statements, followed by six open-ended questions. The student performance assessment data was collected based upon the following course assessments and assignments: (1) three quizzes, (2) four assignments, and (3) six discussion posts.

Data Analysis

The data analysis consisted of a *t*-test to examine quantitative data to produce frequency and correlation statistics. A *t*-test is a statistical analysis used to evaluate the means of two populations using hypothesis testing (JMP, n.d.) A two-sample *t*-test was used to determine if there was a statistical difference between the overall academic performance of the on-campus and off-campus students. The researchers compared the calculated *t* value against the values in a critical value chart to determine whether the *t* value is greater than what would be expected by chance. If so, the researchers will reject the null hypothesis and conclude that the two groups of students are in fact different.

The Pearson correlation coefficient (*r*), Pearson's *r,* was used to measure the strength and direction of the correlation (relationship) between two variables. Pearson's *r* is expressed between -1 and 1 (Tabachnick & Fidell, 2018). The correlation coefficient formulas calculate a value between -1 and 1, where (1) between 0 and 1indicates a positive relationship, (2) 0 (zero) indicates no relationship, and (3) between 0 and -1 indicates a negative relationship (Glen, 2023). To further define the strength and direction of the relationship between two variables, a Pearson's r (1) greater than .5 indicates a strong and positive relationship, (2) between .3 and .5 indicates moderate and positive relationship, (3) between 0 and .3 indicates a weak and positive relationship, (4) of 0 indicates no relationship, (5) between 0 and -.3 indicates a weak and negative relationship, (6) between -.3 and -.5 indicates moderate and negative relationship, and (7) less than -.5 indicates a strong and negative relationship (Turney, 2023).

The data analysis consisted of three phases: (1) analysis of the quantitative data, (2) analysis of the qualitative data, and (3) analysis of how the qualitative data explains the quantitative data. This qualitative data was needed to explain the quantitative data collected through student performance assessments. The quantitative data demonstrates how each group of students performed, but the qualitative data helps to answer the question of why these students performed as they did. The research question for this study was addressed using quantitative data collected from the students' grades on the course assessments. Furthermore, the quantitative data was supplemented by qualitative data gathered from the student pre- and post-course surveys. The qualitative data was analyzed from the student pre- and post-course surveys to identify patterns and opinions that could explain the results from the quantitative data (EMpower, n.d.).

Research Results

Quantitative Results

The two-sample *t*-test determined if there was a statistical significance in students enrolled in compressed off-campus courses achieving equivalent student learning objectives as students enrolled in traditional on-campus courses. This t-test with 36 degrees of freedom was tested at the .05 significance level, $p < 0.05$.

There was no significant difference found between the on-campus (M = 83.4, SD = 10.3) and off-campus (M = 86.3, SD = 10.2) courses; t (36) = -.819, p = .417. The mean and standard deviation for both groups suggests that the delivery format of the course did not result in meaningful differences in the final course grades for the participating classes. And the t value and p value were -.819 and .417 respectively; therefore, it can be concluded that the null hypothesis is retained.

Pearson's r was calculated for several of the variables in this research study for both student groups. To answer the research question, the researchers identified two variables that had a significant impact on student academic performance and provided the strongest correlation between variables. For on-campus students:

1. A strong correlation was found between the level of interest in the course material (M = 3.5, SD = .85) and students' academic status (M = 3.08, SD = .86); r (13) = .094, p = .033. The Pearson's r value, r = 0.94, indicated there was a strong and positive association between on-campus students' level of interest in the course material and their academic status.

2. A strong correlation was found between final grade (M = 83.4, SD = 10.3) and level of interest in the course (M = 3.5, SD = .85); r (13) = .558, p = .094. The Pearson's r value, r = .558, indicated there was a strong and positive relationship between students' final course grade, and the level of interest for the students taking the course in the standard on-campus 16-week course format.

In addition, the researchers identified two variables that may have influenced student academic performance and provided the strongest correlation between variables:

1. A strong correlation was found between final grade (M = 86.3, SD = 10.2) and students' overall GPA (M = 3.56, SD = .31); r (13) = .723, p = < .001. The Pearson's r value, r = .723, indicated there was a strong and positive relationship between students' final course grades and students' overall GPAs for the students taking the course in the compressed off-campus course format.
2. A strong correlation was found between the level of interest in the course material (M = 3.52, SD = 1.2) and academic status (M = 2.64, SD = 1.03); r (13) = .542, p = .011. The Pearson's r value, r = .542, indicated there was a strong and positive relationship between students' level of interest in the course material and the academic status of the students taking the course in the compressed off-campus course format.

Demographic Questions and Data – Student Pre-Course Survey

The first 13 questions in the pre-course survey collected demographic data from the participants. There was not enough diversity in some of the demographic data to lead to any meaningful statistical analysis, so the data indicating gender, age, and ethnicity was removed from the correlation analysis. The fifth demographic question from the pre-course student survey asked the students if they had ever served in the military. There was only one individual, out of the two groups of students, who had military experience. This did not provide sufficient representation within the sample population to make meaningful conclusions based upon the statistical analysis.

The sixth demographic question from the pre-course student survey asked the students if they were an on-campus or off-campus student. The off-campus student group was comprised of 26 students, while the on-campus student group consisted of 14 students. The seventh demographic question from the pre-course student survey asked the students their projected graduation date. Some students were uncertain of their projected graduation date, so the academic status of the students was used to provide the data regarding the students' progress toward graduation.

The eighth demographic question from the pre-course student survey asked the students how many Aviation Management core courses they had completed. This information was not included because the students could not accurately provide this information for the study. The ninth demographic question from the pre-course student survey asked the students the number of credit hours of coursework in which they were enrolled during the fall 2021 semester. There was a difference between the credit hour enrollment between the two student groups. Seventy-eight percent of the on-campus students were enrolled in more than 12 credit hours during the fall semester; however, none of the off-campus students were enrolled in more than 12 credit hours during the fall semester.

The tenth demographic question from the pre-course student survey asked the students the number of college-level English courses they had completed within the past two years. Sixty-eight percent of the compressed schedule off-campus students had completed one or two English classes within the last two years while 57.1% of the traditional schedule on campus students completed one or two English classes within the last two years. However, there was no statistically significant correlation between the number of English classes students had completed within the last two years, and the grades earned on the writing-based assignments.

The eleventh demographic question from the pre-course student survey asked the students the highest level of education they had completed. Students' highest level of education was similar. Nearly all the students listed their highest level of education completed as a high school diploma. There was not enough diversity, in either student group, to lead to any meaningful statistical analysis, so

highest level of education was removed from the correlation analysis. The twelfth demographic question from the pre-course student survey asked the students their current GPA. The final demographic question from the pre-course student survey asked the students if they had been awarded any academic scholarships within the past five years.

Qualitative Results

Open-Ended Questions – Student Pre-Course Survey

In addition to the demographic questions, this research study was designed to collect informative qualitative data using open-ended questions in the pre-course survey. The open-ended questions sought information that would provide the researcher with the level of interest the students had in the course, and if the students believed the course would help achieve their career goals. Next, the questions sought information encompassing the reasons and motivation to complete a college degree. The final questions of the pre-course survey focused on the students' career goals in the aviation industry, as well as the students' interest in pursuing a graduate degree in the future.

The student responses were manually coded and compared to identify commonality among responses. Next, the researcher clustered all the students' responses into common themes (Creswell & Creswell, 2018). Based upon the collection and analysis of the data provided in Table 2, conclusions and recommendations were identified.

Table 2

Pre-Course Survey: Open-Ended Questions & Responses

Q14: What is your level of interest in aviation industry career development?	
Theme 1	Most students had a moderate to high level of interest in aviation career development.
Theme 2	The students recognized the connection between the information provided in the course and the probability of developing a successful career in the aviation industry.
Q15: Will this course be useful in your career?	
Theme 1	The students valued the information provided in the course.
Theme 2	Most students recognized the importance of the information to the pursuit of their careers in the aviation industry.
Q16: Why are you pursuing this undergraduate degree?	
Theme 1	Most students indicated that they were pursuing an undergraduate degree as a requirement to begin their career in aviation, specifically as an airline pilot.
Theme 2	Other students cited their passion for aviation.
Q17: What is the most important benefit to you of a college education?	
Theme 1	Some students thought it is important to pursue a career.
Theme 2	The satisfaction of accomplishing the goal of earning a bachelor's degree and to acquire knowledge.
Theme 3	Others thought a college degree was unimportant yet necessary.
Q18: How motivated are you to complete your college degree? Why?	
Theme 1	Most indicated a high level of motivation to complete a college degree existed because the students were eager to begin their career in the aviation industry.
Q19: Do you intend to pursue a career in the aviation industry?	
Theme 1	Most students intended to pursue a career as a pilot.
Q20: Are you currently working in the aviation industry?	
Theme 1	Only two of the on-campus students had previous aviation-related work experience.
Theme 2	Whereas approximately 50% of the off-campus students had previous aviation-related work experience.
Q21: What are your career/professional goals?	
Theme 1	Both student groups planned to pursue careers as commercial pilots.
Q22: Do you intend to pursue a graduate degree in the future?	
Theme 1	Most of the on-campus and off-campus students did not have current plans to pursue a graduate degree.

Demographic Questions and Data – Student Post-Course Survey

The purpose of the post-course survey was to collect student information that would provide the researcher with the students' opinions regarding the educational value of the course.

The researcher used a five-point Likert Scale and open-ended questions in the post-course student survey. The five-point Likert-scale was assigned numerical values: (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree. The Likert statements and student responses are provided in Table 3.

Table 3

Post-Course Survey: Likert Statements & Responses

On-Campus Students Strongly Agreed or Agreed	**Off-Campus Students Strongly Agreed or Agreed**
S1 – This class was a good way to learn about aviation career development.	
100%	84%
S2 – This class has had a positive effect on my interest in aviation industry career development.	
93%	80%
S3 – I was able to ask questions in this class and get helpful responses.	
100%	92%
S4 – Class discussions were encouraged.	
100%	76%
S5 – I was able to analyze and discuss course materials in class.	
93%	80%
S6 – In-class activities encouraged critical thinking.	
100%	80%
S7 – I would recommend this class to other students.	
93%	76%
S8 – This course provided me with a good understanding of the skills and strategies for career development.	
100%	88%
S9 – This class will assist me as I pursue career objectives.	
100%	84%
S10 – This class was interesting.	
86%	64%

Open-Ended Questions

This research was designed to collect qualitative data using open-ended questions in the post-course survey. The open-ended questions sought information that informed the researcher about student perception of the value and difficulty of

the course. The first two questions of the post-course survey requested the students give their opinions regarding the aspects of the course. Questions three, four and five asked the students to give their opinions with respect to difficulty of the course and to indicate whether the course schedule affected the level of difficulty. Finally, students were asked if the course was an overall good learning experience. The student responses to the open-ended questions included in the post-course survey are provided in Table 4.

Table 4

Post-Course Survey: Open-Ended Questions & Responses

Q1: What are the best aspects of the course?	
Theme 1	The course contributed to students' ability to pursue a career in the aviation industry.
Theme 2	The presentation of course content and the discussions about industry topics.
Q2: What are the weak aspects of the course?	
Theme 1	Dissatisfaction with the course schedule.
Theme 2	Lack of access to the lecture slides outside of the classroom.
Theme 3	Lack of guest speakers.
Theme 4	Repetition of course content.
Theme 5	Cost and use of textbook.
Q3: Was this course easy or difficult? If so, why?	
Theme 1	Most students assessed the course as being easy.
Theme 2	A few students described the course as on average too difficult.
Q4 & Q5: Was the course difficult because of the compressed schedule? If so, why? Was the course easier because it was a traditional semester schedule? If so, why?	
Theme 1	Most of the off-campus students did not think the course was more difficult to complete due to the compressed course schedule.
Theme 2	Approximately 50% of the off-campus students stated they thought the course was easier to complete due to the traditional course schedule.
Q6: Overall, was this course a good learning experience? Why?	
Theme 1	The students believed that the course was a good learning experience.
Theme 2	The skills and information they gained from the course will help them pursue their careers.

Discussion

Although there was no finding of significant statistical differences between the grades on the course performance assessments and corresponding SLOs of the two groups of students, several factors require analysis as they may inform

researchers of the reasons for the small variations in academic performance between the two groups. The compressed format provides a more concentrated and focused learning experience, which resulted in slightly higher scores on the assignments and quizzes. The off-campus compressed schedule students earned higher scores on writing-based assignments such as cover letter, resume, and discussion posts than their on-campus counterparts. Furthermore, the off-campus students earned a higher average quiz grade as compared to the on-campus students. More importantly, these scores indicate that the spacing effect did not impact the compressed schedule students' ability to learn the course material. The spacing effect is "a cognitive phenomenon in which distributing to-be-learned information across time in short, interrupted study sessions leads to better long-term retention than continuous, massed sessions" (Spacing Effect, n.d., para. 1). The more immersive learning experience that accompanies the compressed course schedule is not necessarily a better choice for all students. It is important to note that all students are different, and the compressed course schedule can be overwhelming for some students.

Next, it is necessary for the off-campus course to cover the same course material and provide the same SLOs as the on-campus course. The SLOs are what the student is expected to know and the observable skills that are acquired after course completion. They demonstrate that actual learning has taken place during the course. The student performance assessments allow the faculty to determine if the SLOs were achieved. In contrast, grades evaluate student performance and quality of a student's work. Even though the SLOs were achieved by both groups of students, the quantitative analysis indicated the off-campus students, based upon course performance assessments, submitted higher quality work.

The qualitative data allowed for further understanding of the quantitative data. Both student groups displayed a moderate-to-strong positive correlation between their academic status and the level of interest in the course material. When asked about their level of interest in aviation career development, both groups of students had a moderate-to-high level of interest.

Most students view college education as a necessary tool to pursue a successful career in the aviation industry. As a result, the students had a high level of motivation to complete a college degree because they were eager to begin their career in the aviation industry as commercial pilots. The students provided a similar response to the open-ended question in the post-course survey when asked what they viewed as the best aspects of the course. Most students revealed that they valued those aspects of the course that contributed to their ability to pursue a career in the aviation industry.

Interestingly, both groups of students indicated the course was easy, regardless of course format. The responses from on-campus students in the post-course survey revealed that most students assessed the course as being easy, and a

few students indicated that the level of difficulty was average. The responses from off-campus students revealed that most students assessed the course as easy, a few indicated that the difficulty was average, and two students described the class as difficult. Approximately 50% of the on-campus students stated they thought the course was easier to complete due to the traditional course schedule, and most off-campus student responses indicated they did not think the course was more difficult to complete due to the compressed course schedule. The off-campus student responses indicating they did not think the compressed schedule increased the level of difficulty of the course aligns with previous research findings. Finally, both groups of students indicated that the course was a good learning experience because the skills and information they gained from the course will assist with their careers. It is important to note that not all students possess the motivation and discipline to be successful in a compressed course; however, the majority of the compressed schedule students had the necessary skills.

The post-course survey also asked students for their opinion regarding the educational value of the course. Ten statements were provided to the students, and they were asked to respond using a five-point Likert Scale. The responses provided by the on-campus students indicated they had a more favorable opinion regarding the educational value of the course, quality of the course delivery, and the level of interest in the course content as compared to the off-campus students. All the on-campus students agreed or strongly agreed with six of the statements, yet these sentiments were not presented in such high numbers by the off-campus students. Although both groups of students earned similar grades on quizzes and assignments, along with similar positive correlations, the on-campus students appeared to exhibit a more positive sentiment regarding the course. This did not have a significant impact on the students' grades on course assessments, but more positive sentiment toward the course, provided by the on-campus students, may have some impact on students' academic motivation and overall quality of educational experience.

The level of motivation and value placed upon the course material by students appears to be the dominant factor when determining educational experience for both student groups participating in this research study. There was a low correlation between the number of scholarships earned by students and the final grade for the course. Furthermore, the same low correlation was found between the number of English courses taken by students within the past two years and grades on writing-based assignments.

The qualitative data provided in the responses to the open-ended questions explain why there was a positive correlation between level of interest, academic status, and grades earned on quizzes and assignments. The students believed that there was a direct link between the course material and their success in the aviation

industry. These students are highly motivated to earn a college degree and to achieve the SLOs for the course, to help them achieve their career goals.

Conclusions

There was no significant difference found between the on-campus (M = 83.4, SD = 10.3) and off-campus (M = 86.3, SD = 10.2) courses; t (36) = -.819, p = .417. These statistical results provided no evidence that suggests the delivery format of the course (traditional 16-week format or compressed weekend format) resulted in meaningful differences in the final course grades for the participating students. Therefore, the results of the statistical analysis failed to reject the null hypothesis. However, a closer analysis of grades on specific performance assessments, achievement of SLOs, and qualitative data yielded greater insight to determine the level of educational quality of the two modalities.

Both the on-campus and off-campus students demonstrated a moderate to strong positive correlation between the final course grade; (1) total quiz score, (2) cover letter grade, (3) resume grade, and (4) interview grade. Both groups of students experienced a positive correlation between their final course grade and assignments and quizzes. This positive correlation was consistent with total quiz grades, which demonstrated the students' ability to learn the course material for student performance assessments. Likewise, this positive correlation was reflected in the writing-based assignments such as the cover letter and resume assignments. Overall, both groups of students earned similar grades on quizzes and assignments, along with similar positive correlations. The t-test indicated that there was no statistically significant variation between student academic performance, for both groups of students, and SLOs.

Recommendations

Based on the findings and conclusions of this research study, the following recommendations have been formulated:

1. All students should receive the same quality of instruction and educational experience regardless of modality. To maintain parity between the student groups, similar curriculum must be used in both courses regardless of course schedules. Academic programs, regardless of modality, should use one master course syllabus. The syllabus must provide a concise course description and objectives. Furthermore, the SLOs need to correspond with the course objectives and the academic program's SLOs. Consistency across the curriculum is necessary to provide all students with a high-quality learning experience regardless of modality. Often, more than one instructor will teach the same courses across different modalities; however, the consistency of curriculum and master syllabi will promote a high-quality learning experience for students.

2. It is important to recognize that not all students, courses, and faculty is well suited for the compressed schedule modality. Certain variables need to be considered when deciding to offer a course in the traditional or compressed format. The students' level of interest in the course material is important as this indicates if the students perceive any value in the material. The students may have a high level of interest in the course material if they believe that it will help them achieve their career goals. Academic status, credit hour enrollment, and GPA may also be influencing factors when determining student success in compressed and traditional schedule course formats. Academic status is influenced by the students' motivation to complete their college educations. Consequently, the value of a college education is directly linked to the students' ability to pursue their careers. Student GPAs indicate that those academic high achievers will typically do well regardless of course modality.

This research study used a homogenous student sample with little diversity. Although this research study was not able to analyze different student demographics, these are factors that may be considered when determining course formats. Varying factors may influence the learning experience for students in varying course modalities. One size does not fit all when determining a course modality that will provide the best learning experience for students. Institutions of higher learning may consider many factors based upon the course material, faculty, and student demographics.

Further Research

It may be worthwhile to compare the performance of four groups of student samples using different modalities. For instance, the first group of students would complete a course in-person using the traditional 16-week schedule. The second group of students would complete the course asynchronous online using the traditional 16-week schedule. Another option would include two student groups that would complete the courses using the compressed schedule; one group being in-person, while the other would be asynchronous online. It is imprudent to assume that all courses should be offered in the same modality and will yield the same SLOs. This research may provide collegiate educators with variables that will need to be considered with selecting course modalities.

Next, most of the students in this research saw value in the course. The skills and information gained from the course will help them find employment as professional pilots. The career development skills gained from the course will provide direct benefits to the students as they pursue their careers. Most of the students in the sample intended to pursue a career as a professional pilot. Would the results of this research have been different if the students completed a course in which they were not interested? Would the results have been different if a non-aviation related course was used to complete the study? A similar study, involving

a course of less interest to the students would provide valuable information to institutions of higher learning.

Third, further research with a more diverse student sample may yield varying results. This research study used a homogenous demographic sample. The student population in higher education is becoming increasingly diverse, and a research sample could provide insight concerning how differing groups of students perform in courses based upon modality and level of interest in the subject matter. Demographic diversity may include variations in age, gender, or race.

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