Transitions of Emissions & Social Justice:
An Analysis

Cat Kiser, Eric Scott, and Kasey Cruz
Sponsored by David Crook, WWU Project IT Manager
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Table of Contents

Executive Summary

Problem Statement

As a result of the COVID-19 pandemic, Western Washington University has shifted its activities to online formats. This online shift created a new college environment with both benefits and setbacks. Positively, there were reductions in transportation carbon emissions with fewer students, staff, and faculty traveling to campus. With an online format, there is also a possibility for wider inclusion of students who may not have had access to higher education due to physical barriers. In the future, how can Western keep their transportation carbon emissions down and provide access to higher education for non-traditional students who cannot live near or travel to campus when in-person courses are conducted again.

Description of Project

The focus of this project was to conduct research on Western students' feelings toward the online class format. Qualitative data from student interviews was gathered to assess their experiences with telecommuting in order to determine recommendations for future class formats. It is important to note that the data collected was from traditional students. In these interviews, questions revolved around interviewee's thoughts and opinions of online school and how it affected their life. A comprehensive analysis of interviews was constructed and a detailed budget for suggested implementations was presented. Monitoring and evaluation of proposals for later quarters were also outlined.

Summary of Recommendations

Research in student experiences with online courses, transportation carbon emissions, and social justice education has shown that there are more negative outcomes of online education for traditional students at Western than positive; however, at the same time, there are environmental and social benefits of telecommuting that can benefit non-traditional students. Therefore, it is recommended that Western return to in-person classes post-COVID-19 with an option for many courses to be held in a choice-hybrid format, allowing students to choose to attend class in-person or online.

Introduction

Statement of Need

The COVID-19 pandemic was unexpected and has disrupted the lives of millions of people across the United States. One huge area of impact is higher education, where universities have been forced to move into uncharted territory and offer most of their courses online ("Impact of Coronavirus," n.d.). An unintended outcome of the pandemic is that universities have the opportunity to become significantly more accessible for non-traditional students as higher education programs are moved online (DePietro, 2020). A non-traditional student is one who meets "one of seven characteristics: delayed enrollment into postsecondary education; attends college part-time; works full time; is financially independent for financial aid purposes; has dependents other than a spouse; is a single parent; or does not have a high school diploma" (Pelletier, 2010). There are significant demographic changes in a university's study body when online learning is used as a means for education (Holder, 2007). Online classes allow students to build their daily schedules freely, meaning that their academic studies can more easily fit into other responsibilities, such as work, family, or personal care. Additionally, online learning can be conducted anywhere; in a city such as Bellingham, housing prices frequently rise due to increased demand and lack of availability. Thus, the ability to attend school can be financially restrictive due to the cost of living within a commutable distance to the campus. Therefore, online learning helps eliminate this barrier.

At the same time, there has been an unprecedented worldwide decrease, 8.6 percent between January and April, in daily CO2 emissions as a result of COVID-19 lockdowns and lifestyle changes (Hale, 2020). One of the largest reductions in emissions was in the ground transportation sector, decreasing by 18.6% (Collins, 2020). This did not mean, however, that these emission reductions lasted–emissions have now returned to usual levels (Collins, 2020). Because most classes are being offered online at Western Washington University, fortunately, transportation carbon emissions are still at lower levels.

According to the Winter 2018 Transportation Survey, there were roughly 13,779 students attending class on Western's campus and of these students, roughly 53% drove in some way to campus ("Western Transportation Survey," 2018). These various ways included driving alone to campus, driving alone to a park and ride then bussing to campus, driving with a passenger or riding with a friend to a park and ride then bussing to campus, or being dropped off by someone not going to campus. Alternatively, in fall 2020, there have been roughly 1,080 students attending class in person and only roughly 100 students have been parking on campus on any given week. The number of students traveling to campus by car may not be completely accounted for because Western's data as of fall 2020 only includes students parking on campus; this does not count students who may be parking in the surrounding neighborhoods. Despite the unaccounted for information, there has still been a significant decrease in vehicular transportation. Therefore, Western has an opportunity to retain these lower transportation carbon emissions in the future. The COVID-19 pandemic has created an opportunity to implement structural changes within the institution that will allow reduced carbon emissions from transportation post-COVID and create accessibility to a larger number of students.

Project Goals

In order to help Western become more sustainable and follow through on its commitments described in the Sustainable Action Plan, Western should focus on reducing its transportation carbon emissions post-COVID-19. Western can achieve this by implementing choice-hybrid courses, where students can choose to attend class either in-person or online via Zoom. Choice-hybrid classes will be able to reach a wider network of students, allowing access to higher education for those who have not been able to enroll in the past due to financial constraints, physical barriers, or life stressors. The end goal of this project is to argue that Western execute choice-hybrid classes in the future in order to create a more inclusive campus environment and reduce carbon emissions.

Background Research

Western Washington University strives to be a leader in promoting campus sustainability and incorporates sustainability into many aspects of campus operations ("Western Office of Sustainability Introduction," n.d.). In 2017, Western adopted its Sustainability Action Plan 2015-2035 for supporting campus-wide sustainability initiatives, including plans for environmental action and social equity ("Western Washington University," 2017). This document specifically outlines transportation goals Western hopes to achieve, including its objective of reduced student reliance on automobile travel and its goal of reducing climate impacts of student Western-related ground travel by reducing commuter student-driving rates by 10% annually ("Western Washington University," 2017). The Plan also discusses how Western must make social justice a priority ("Western Washington University," 2017). Therefore, to continue in its commitment to sustainability post-COVID, Western needs to continue finding ways to reduce student transportation carbon emissions and provide better access to higher education to those who have not had access in the past. Choice-hybrid classes are a viable option that can help Western achieve its goals to become more sustainable and equitable.

Methodology

Eighteen interviews with WWU students were conducted. These interviews explored students' feelings towards online learning, lifestyle changes in response to online learning, and general attitudes towards Western surrounding online learning. The interviews were conducted via Zoom or on the phone, except for two in-person interviews, due to the COVID-19 pandemic safety guidelines. Each interview was composed of six basic demographic questions and six interview questions aimed at delving into the pros and cons of each individual's experience with online learning. In order to protect the identities of the interviewees, pseudo names were used during the transcription process. Once the interviews were transcribed, they were coded with six distinct codes:

- Likes or Dislikes Telecommuting
- Finds classes more challenging or less challenging
- Experiencing effect on mental or physical health
- Experiencing an impact on daily life habits

- Has different attitudes about Western Washington University
- Wants a change in format for telecommuting classes

After coding the interviews, results were analyzed and categorized based on general experience reported. Demographic information collected revealed that the majority of interviewees would be considered traditional students. Interviewers considered the suggestions and the overall effects of online learning reported by interviewees when designing the recommendations for implementing choice-hybrid classes in the future.

Due to the COVID-19 social distancing orders, the research collected had to be conducted via telephone and internet sources and followed COVID-19 social distancing guidelines. This may have created a bias in the analysis of surveys because interviewers were not able to analyze body language or create a full connection with interviewees. This also means that the interviews may have been conducted within a smaller range of people than what would be preferred if they were done in person. Because of limitations in finding random people for online interviews, a snowball sampling approach was taken. Interviewers found interviewees via recommendations of friends and acquaintances. It was of paramount importance that the subjects interviewed and the interviewers had not previously established a relationship; this was done to eliminate any further bias in the study.

Results

The results from the qualitative interviews showed that current students are either against online learning or ambivalent about it. There was a multitude of reasons for disliking online learning, ranging from lack of socialization, not being able to concentrate on their education, and the way it impacts daily life habits. However, each student reported having a unique experience with online learning due to personal preferences and the settings of their workspaces. Some students did report feeling better about their education when using telecommuting, especially those with anxiety in school.

One of the most commonly mentioned changes that students noticed was a fluctuation in the level of their curriculum. Students who were focusing on receiving a BA felt that their education was heavily impacted when classes were solely conducted via Zoom and reported that school seemed much harder due to increased workload and lack of human interaction. To remedy this, many students mentioned the need for peer-on-peer collaboration; many advocated for more professor implementation of group projects and in-class discussions via break-out rooms in Zoom.

While students receiving Bachelor of Art's felt that their education was made more challenging, some students did say that online school helped them become better workers because it forced them to use and work on their time management skills. Unfortunately, students receiving a Bachelor of Science felt that their education was not of the same caliber as before, especially those who work in labs. Receiving a degree via online education made these students feel unprepared for their professional fields.

A large number of interviewees expressed having difficulty with online classes because of the lack of separation between school and their personal lives. Having roommates, finding non-distracting workspaces, and being able to enjoy downtime at home were all reported as challenges impacting their online learning. Factors that students could not control such as Wi-Fi speed and the way professors organize and conduct classes also created barriers to receiving a successful education.

Outside of the school atmosphere, telecommuting has caused large changes in students' everyday life habits. A concerningly large number of interviewees reported feeling a lack of motivation for work and daily life activities. Many students said they no longer get ready for the day in the morning, making them less focused and motivated throughout their classes. Another impactful change discussed was the difference in physical activity: when classes were in-person, students used their university commute as an outlet for exercise, either walking or biking to school. When classes moved online, more than half of the interviewees said that they are not as physically active and that they have a hard time leaving the house. Besides changes in motivation and physical activity, many students also reported feeling large amounts of exhaustion via Zoom fatigue.

Positive outcomes of telecommuting that were reported include the impact online school has on daily schedules and comfortability surrounding tests. Around half of the interviewees mentioned that they had more time to focus on outside of classwork during the day or pick up more hours at their jobs as a result of being able to construct their own schedules with asynchronous classes and a drop in commute time. Students who experienced testing anxiety or social anxiety also felt more comfortable with telecommuting because they could perform in the comfort of their own space. They said that utilizing the chat option on Zoom makes it easier to ask questions during class and utilizing Google as a source of information when confused was also very helpful alongside lectures.

Recommendations

Higher education has become increasingly polarized and expensive. Social interaction is a key part of higher education and Western's students have expressed that online courses have presented both pros and cons to their academic lives. If Western aims to taper this trend and achieve the goals outlined in its Sustainable Action Plan, it must find a way to become more financially accessible, environmentally conscious, and socially equitable.

It is recommended that Western implement choice-hybrid classes. Introducing these types of courses would open the door for students to advance their academic and professional careers while overcoming barriers in their personal lives that may have otherwise prevented them from obtaining their degrees. Currently, Western's classes are catered toward traditional students with a few programs that support non-traditional students. If a choice-hybrid class option was created campus-wide, Western would be able to serve more students with a variety of lifestyles and backgrounds.

The information presented in the qualitative surveys concluded that students who have the ability to experience in-person classes do indeed prefer that option. However, for non-traditional students who might not have the flexibility to make that choice, online learning via choice-hybrid classes is a practical option. To make that possible, choice-hybrid classes can be conducted using Zoom-carts, a device featuring a webcam, computer, TV, and speakers. Zoom-carts can be placed in classrooms during lectures and when in-person classes are conducted. The large screen TV and speakers allow students attending the class online to be seen and interact with their fellow in-person classmates and professors. Zoom-carts would address the barriers that were discussed during qualitative surveys such as social interaction and educational involvement. Another option could be a simple video-camera live-streaming the class to Zoom, where the Zoom participants could only hear the professor and see the professor's whiteboard/screen.

While the introduction of choice-hybrid classes has the ability to reach more students, it does not remove all barriers. Students may still experience financial insecurity, technological issues, and the pressures of outside life. In order to mitigate these barriers, Western is encouraged to reevaluate what the cost of choice-hybrid courses will be and consider offering them at a discounted price. If the purpose of choice-hybrid classes is to reach more non-traditional students, then it is important to understand the financial constraints that these students may be experiencing as well. Due to the nature of choice-hybrid classes, the final recommendation is that the Western must find an efficient way to provide technical assistance and other necessary support to students attending choice-hybrid courses.

Budget

Below is an outline budget of what it would cost to make Zoom-carts.

Cart	~ $200
Computer	~ $800
TV	~ $500
Speakers, Microphone & Camera	~ $300
Total	~ $1,800

Zoom-carts allow for interaction between the two separate bodies of students, as well as the professor with the online students. Zoom-carts will help bridge the gap that makes online-learning less attractive than in-person classes. The expense of this solution is worth the impact it can make. Zoom-carts could be funded by private and public grant money, donations collected by the Western Foundation, departmental equipment funds, and sustainable action grants. If for

some reason, funding for Zoom-carts is unavailable or unreachable, the less interactive live-streaming video camera option would cost less than $100 per unit.

Monitoring and Evaluation

A large setback that our students reported experiencing during online learning was a result of the lack of organization in online classes. If Western were to purposefully implement online learning as a format, it could overcome this barrier by creating a required educational course for professors and students that teaches about online learning and etiquette. For students who may choose classes offered online, it is crucial to develop a broad-based approach toward identifying what services can be provided to support students during their educational endeavors (Holden, 2007). Additionally, the use of Zoom-carts should also be monitored and follow-up surveys of choice-hybrid should be conducted as courses progress in this new format in order to gauge their productivity.

Conclusion

For Western Washington University to continue its efforts toward a sustainable future, it must consider what could happen post-COVID-19. The pandemic sparked many reductions in carbon emissions all across the world, including at Western's campus and it should focus on keeping those emissions down. Physical barriers also exist in higher education when potential non-traditional students are unable to attend classes in-person. To continue trends in lower transportation carbon emissions and to create more inclusivity in higher education, Western should provide choice-hybrid options for most courses in the future. These hybrid courses allow students to choose to either attend class in-person or via Zoom depending on their situation. Video cameras can live-stream classes to online students, while Zoom carts provide a more interactive classroom environment. With hybrid-class implementation, Western can achieve greater environmental sustainability, continue to improve its focus on social justice, and become a model for other universities in the future.

Appendix

- Link to 18 transcribed and coded interviews:
  - https://docs.google.com/document/d/1nP0qNhi_48W-W-zZcks-Nq3T_mJpa9qqCZgXIBf4Z60/edit?usp=sharing

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