

Project & Research Brief Report

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Introduction

The UNT bus system is an important means of transportation for many students. The routes help students get from their apartment to main campus, from main campus to discovery park, and help students reach various other parts of Denton. Due to how important the transit system is to many students; we decided to investigate the UNT bus system and its reliability. There is a plethora of routes available, but there are often issues such as timing and availability of buses.

We believe the UNT transit system warrants design research because many students are dependent on the bus and are affected by buses not being accessible or on time.

Accessibility and time issues of students lead to missing classes due to bus miscommunications impacts their education.

Our group was motivated to investigate this from personal experiences with the UNT transit system and testimonials from students who were frustrated because they could not attend their classes due to the bus not being on time.

Methods

Research Approach

Our group conducted design research using two primary methods: surveys and interviews. These methods were selected to capture patterns in student experiences and personal insights from both UNT students and faculty that work with DCTA.

Participants and Study Context

Survey participants were recruited through class announcements and Reddit forums, resulting in a convenience sample of students who utilize the transit system on campus. Two participants, a member of the transportation board on campus and a previous DCTA employee, volunteered to participate in interviews to gain additional insights on UNT's transit system.

Study Scope and Constraints

The scope of the study was limited due to time and access constraints, as data collection was conducted over a short amount of about a week and a half. Due to these limitations, the group focused on students who use the transit system over prioritizing the inclusion of participants, like bus drivers or several transit administrators.

Surveys were chosen as the most efficient way to gather data from a large number of students within the limited timeframe. Interviews with the one transit administrator and the previous DCTA employee were included to provide a deeper insight into prominent issues regarding the transportation system on campus. The study focused on the commonly used routes and general student experience.

Data Collection

A structured online survey using Qualtrics was created and distributed to students. The survey included:

- Demographic questions
- Multiple choice questions about frequency of bus use
- Short-answer questions for comments on issues each participant has regarding taking the bus on campus
- Semi-structured interviews were conducted via Teams and email

Data Analysis

Survey data was analyzed by the team to identify overall trends in responses. The twenty-three responses were coded based on the participants' grade level, most frequent bus routes taken, and the common issues the participants face when taking the buses on campus. For qualitative data, like the open-ended questions found within the survey, responses were analyzed into themes such as 'comfortability,' 'dependability' and 'route issues.' These themes were identified through repeated reading rather than a formal codebook.

Research Insights

Survey and feedback laid out the groundwork for establishing this report. Feedback showed that students feel strongly about the bus routes and how they function.

From the Qualtrics survey, it was shown that 33% of participants reported the bus not arriving on time on the day they took the survey. When asked what issues they had with the UNT bus system, most students said they felt like there was not enough night and weekend service. Also, a few students reported that buses that go to Discovery Park were cramped and overcrowded.

UNT and DCTA also collect feedback from students. UNT and the DTCA collect this data in several different ways.

- Bus driver feedback.
- Online surveys
- Emails
- Online apps

Regarding this information and two interviews, we found that the main goal for UNT bus routes is to keep students happy. While this may be hard to do, students still find themselves running late on the bus or to class.

Most of the problems are associated with two obstacles that UNT has to face throughout the year.

- Budget cuts from UNT
- Unannounced construction across Denton

Students are irritated with the bus routes due to their changing nature. However, UNT and DTCA are constantly changing routes and adjusting timing due to unannounced city construction that may prevent buses from going their usual routes or even making it to their intended stop.

One of our interviewers mentioned they would pour millions into the construction and new buses to alleviate the strain of the bus routes. He argued that it would solve most problems regarding the inefficiency of buses.

The interview with a previously employed member of DCTA stated that funding for transit is not only on campus, but Denton County as a whole has been cut drastically within the last five years. The interviewee stated that an entity, Dissolution of North Texas Mobility Corporation (NTMC) was voted out by the DCTA board meant to support its staff. This has caused a high turnover rate for the corporation due to its change in working conditions. The

effect of the turn-over rate and firing of previous employees like the interviewee has caused issues to trickle down to the students who use the transit system. The previously employed driver stated that the funding cuts have forced certain bus routes to be changed, causing issues regarding departure and pick-up times, comfortability, and dependability for students that take the bus.

UNT has followed in Denton Country's footsteps in cutting the budget for the transportation department as the students who are expected to ride the buses are not enrolled. Due to UNT's 45-million-dollar deficiency. The number of transit-dependent rides is dwindled, forcing UNT to cut and save on the transportation department.

Stakeholder and Constraint Analysis

UNT students are at the highest priority with the bus routes. Without the mass influx of students needing transportation to the university, the contract between the DTCA and UNT would not exist. Students are the most affected as all the data and feedback UNT and the DTCA receives is from students.

Cutting the budget affects the stakeholders by helping to elevate the cost of the deficit. It gives students less routes and less bus frequency. One of our interviews mentioned that the highest amount of feedback they get is during the first three weeks of school before most students stop attending class throughout the semester. He mentioned that due to restraints, the DTCA and UNT cannot keep up with the demand.

While the majority of students that ride the bus are transit dependent, the bus routes issues also affect students who are not transit dependent. These are the students who have the option to ride the bus to school. Or they are commuters who park nearby and use the bus routes to finish the last leg of their route to get on campus.

Problem Definition

The issues that need to be addressed based on the data collected from both the surveys and interviews are the availability of the bus routes on campus, and accuracy on departure and arrival times, and proper communication of changes to routes to students of UNT. The unclear and inaccurate departure and arrival time information alongside the restrictive hours certain routes run result in the students of UNT and surrounding communities being unable to uphold important commitments like attending class or work.

Limitations

Our limitations were the time constraints and the sample size of our data. We were only able to conduct two interviews with people who worked at the DCTA, and we only received 23 responses to our survey.