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# Usability Report: TransLoc User Guide

This usability report is an assessment of the TransLoc User Guide, which was developed as a manual for users of the TransLoc app. Assessment of the guide was conducted via human-subject testing with three participants, followed by experience assessment. Based on the testing, possible edits and modifications are recommended for improved usability.

## Background

TransLoc is a service that partners with university and municipality transit systems and provides software and other technical services. Acting as an intermediary, TransLoc provides information from the transit system to the user, and can process requests from the user and communicate them to the transit system, enabling responsive transit services like on-demand shuttles. The advantages TransLoc provides to a user are real-time tracking services of shuttle busses and estimated arrival times. These core features allow a user to have greater knowledge to the operations of their transit system, and interact with that system in a more efficient manner.

The test that was conducted assessed the effectiveness of a user guide (the TransLoc User Guide) on participants' ability to use the TransLoc app to gain information about the partner system (in this case the George Mason University Shuttle system). Participants read the user guide, followed its instructions on the TransLoc app, and provided oral feedback which was documented for the improvement of the guide. Findings from their use and assessments of the guide are analyzed to recommend modifications and improvements.

## Methods

The testing process involved participants who used the User Guide to download and use the TransLoc app's functions. Access to the user guide was provided on a researcher's laptop; participants accessed the app on their own personal devices (all used their phones). Following their completion of the manual's instructions they provided oral feedback on their experience which was prompted by researcher questions, but unstructured in form.

### *Participants*

Three participants were recruited for testing. Recruitment took place informally and participants were acquaintances of the researcher. Participants had not been involved in the making of the user guide, and had no knowledge of it previous to the testing that was conducted here. All participants were under 25 years of age, were students at or had previously visited George Mason University (a TransLoc partner institution), and had not previously used TransLoc. These characteristics constitute possible advantages in representation of target demographics, as the under 25 age group may be considered characteristic of the college students who would be using a university transportation system and individuals who would desire to use technology to

enhance their experience. All participants used their personal devices to complete the test; this may also be considered an advantage as it emulates the real (unmoderated) environment in which use of the app would take place. Testing was conducted in-person, researchers provided access to the guide in PDF format on a laptop, and observed participants' use of the guide as they read it and followed instructions.

*Testing Process*

Participant responses were elicited upon their completion of the guide. Participants were asked to summarize the features of the app, which the instructions explored. They were also asked for their opinion of the experience, in questions such as: "did you find the guide helpful?" and "were the instructions clear?" as well as the more open-ended form: "what would you change about this guide to improve it?"

Notes were taken on participant responses, as well as the amount of time taken for participants to complete certain distinct processes (such as downloading the app). Other participant difficulties were noted qualitatively, such as if they expressed confusion verbally during the process or offered general opinion of the technology. These findings are reported in the "Findings" section below, first in qualitative characterizations of the overall experience, and then discussing instances that were particular to each trial (participants are distinguished here as "Participant 1," "Participant 2," and "Participant 3"). This descriptive account of findings brings to light the potential drawbacks that were encountered by users, and are drawn upon for recommendations for improvements in the "Recommendations" section.

## Findings

All participants downloaded the app in less than one minute, this process appeared intuitive and so none faced difficulty with this section. During the "setup" portion, participants successfully followed instructions to select "allow" location. Following this, all were able to navigate the map view within the app and select bus routes as specified in the manual.

Participants correctly summarized the purpose of the app when asked, that it was an aid to the use of busses (Participant 3 offered that they had seen similar apps before, and so knew some of what to expect). In their summary of the app, one out of three participants identified the real-time wait estimations as a feature without being prompted, and correctly explained the function of this feature; the other participants identified it when prompted, however were not able to accurately explain it or how it differs from a traditional bus schedule.

All participants identified similar tendencies in the writing of the manual. They characterized it (alternatingly) as "boring," "wordy," and "too much." When asked for suggestions some posited reducing instructions, while others asked for them to be made more detailed, one participant also requested more visual aids. All participants agreed, when prompted, that the guide was helpful. Notable occurrences in individual experiences are laid out below, and findings are analyzed in the following section for recommendations.

*Participant 1*

Participant 1 chose to read the instructions aloud as they were completed. Researchers did not request that they do this, however it provided some insight into how users receive the instructions in the guides. At several points Participant 1 began reading a passage of text, reading each word aloud, and then jumped or "skipped" further down the page; this was indicated by a non-word verbal cue, "*duhduhduhduhduh*."[1] This is useful because it illustrates a user habit of page-scanning, meaning that rather than reading the entire page at the same time the participant scanned the page for the most useful information and jumped to that point.

*Participant 2*

Participant 2 read the instructions silently, however offered some unprompted comments during the reading process. They noted that the text was dry, and that they had to go back through the text and reread an earlier section in order to understand a subsequent one. Participant 2 also commented that the guide's instructions were not always clear. In reaction to instructions on how to navigate fixed route service (TransLoc User Guide, p. 8), they described the instructions as ambiguous with regard to their physical location—this gave rise to questions on where they should be when using the app, and where it would guide them to go. Participant 2 requested "more screenshots" be added, referring to the images of what appears on-screen when using the app.

*Participant 3*

Participant 3 had the most experience with public transit out of all participants and, upon downloading the app, commented that they had seen similar apps before in different locations. They chose to read the instructions silently and provided comments after completing the entirety of the manual. They expressed some confusion about the functioning of on-demand shuttles, and said that the picture shown in the guide did not match what they saw on their phone. When prompted they were able to identify the providing of wait times, however did not identify the real-time estimates as being generated by the app, instead believing they came from a set schedule (incorrect).

*Limitations*

This research has some limitations, all participants were under 25 (an aspect which is valuable in the representation of prototypical college students), however the TransLoc app will not be used by college students in its entirety. Because of this, the comments by participants that noted some instructions as unnecessarily basic and app features as intuitive are moderated in the "Recommendations" section as representative of the technologically familiar. Older people may not have this same familiarity. Additionally, all participants used the app on Apple iPhones. This is a positive in that the simulation was accurate for the situation of each (i.e. all participants used the app in the form they would really experience in an unmoderated use), but the breadth of testing was therefore limited. Consequently, Android users may experience unforeseen difficulty.

[1] Example usage [as participant is reading aloud]: "Now that you've found the transportation services in your area you are ready to travel with TransLoc! For standard fixed-route shuttle services… *duhduhduhduhduh*… [jumping to new section of text] By clicking on a bus stop…" (This example is only a demonstration of the verbal mechanism).

## Recommendations

Based on the findings from participant experience and comments, possible improvements for the TransLoc user guide might be implemented. Not all user complaints will necessarily be addressed as the testing population was not representative of all potential users, and so some features which were intuitive to participants (such as downloading the app) may not be intuitive to all. Consequently, the "basic" sections of the guide should be preserved for those who may not intuit these processes.

The guide should be edited for clarity. Multiple participants identified this issue, and assessment of their knowledge based on their ability to summarize app function showed that some areas remained unclear to them even after the use of the guide. Sentences should be further simplified so the text cannot be misinterpreted, changing complex configurations to simple ones.[2] The creation of coherence, especially through the revising of numbered instructions, should be a priority for the development of the guide.

The guide should be edited for emphasis. Though real-time wait estimates are a core feature of the TransLoc app, only one out of three participants correctly identified this function. The guide should be edited so that core features are explained before they are incorporated in instructional steps. By doing this, the user can understand the significance and origin of the information they receive before using it. This, in turn, will improve user experience and prevent error via misinterpretation.

More visual aids should be added to illustrate instructions. Though not a universal form of instruction, visual aids were identified as helpful by participants. In conjunction with the optimizing of written instructions, the addition of visual aids will further eliminate ambiguity and allow the user to actually see what their app should look like.

These recommendations are based on assessment of findings from user experiences, and are offered to improve the experience of users interacting with the TransLoc User Guide for use of the TransLoc app. Through revision and addition, clarity can be achieved for a diverse user base, communicating core features with thorough instructions.

[2] A participant identified the excerpt, "Remembering that all times (and bus locations) shown on TransLoc reflect what is happening right now will allow you to avoid confusion when planning your rides" as a particularly confusing sentence (TransLoc User Guide p. 13). Reconfiguring this sentence from a present continuous-suggestion ("*Remembering*") into a simple command (Remember: ) will spare the user the tedium of rereading.