# Evaluation of autocompletion on text copy Tasks

## Introduction

Text inputs requires the user to enter each letter on its own. This way of typing opens up many ways for typing mistakes, fatigue and general repetition exhausting the user in longer typing sessions.

Natural languages consist of a list of set words, allowing for text prediction on given inputs.

## Input technique and design

In the following experiment an auto complete method should be examined. Therefore, five German pangrams are presented after each other and the participant has to copy them in a text input field right below the text. Pangrams are sentences consisting of all or most letters of the alphabet, in this case Umlaute (äöü) and the German “ß” are excluded. Pangrams are chosen as every key has to pressed at least once and they contain both common and uncommon words.

While typing, an autocompletion field is shown to some users, displaying a list of words starting with the so far typed letters. The user then can us the arrow keys to select a word and then the enter key to paste it into the text. A sentence is completed by pressing enter without having a prediction displayed. The double allocation of the enter-key was chosen as it is commonly used a validation-key. User should intuitively keep typing so the space button was discarded.

## Study

The study was conducted with 4 participants. The participants has to complete the program twice while their order of getting auto completion support was alternating. The pangram sentence ordering was switched for 2 of the participants in order to counter balance bias. The sentence ordering is randomized before every trial.

A short introduction is read out before each first trail, so the participants know their tasks. After the first trail the participant is reminded on the availability of auto completion assistance.

“Im Folgenden sollst den dir oben gezeigten Text in das Feld darunter tippen. (Dabei/Jetzt steht dir eine Autovervollständigung zur Verfügung die du mit der Enter-Taste übernehmen kannst. Du kannst jedoch auch weiter tippen oder mit den Pfeiltasten einen der Vorschläge auswählen. Die Groß- und Kleinschreibung der Vorschläge wird für den Text automatisch angepasst) Bist du am Ende eines Satzes angelangt kannst du mit der Enter-Taste diesen abschließen. Versuche so schnell und fehlerfrei wie möglich zu tippen.“

|  |  |  |
| --- | --- | --- |
| Participant | Trail 1 | Trail 2 |
| 1 | Completer ON | Completer OFF |
| 2 | Completer OFF | Completer ON |
| 3 | Completer ON | Completer OFF |
| 4 | Completer OFF | Completer ON |

Variables

Independent Variables: typing speed per Word

Dependent Variables: Autocompletion enabled or disabled

Controlled Variables: Keyboard: MacBookPro 13” 2016, German Layout

Location: Private flat

Time: Evening, Wednesday

Confounding Variables: Familiarity with keyboard

Random Variables: Ghosting

Random Enter-Presses.

## Participants

As participants 4 students from different fields were selected. The participants were between the ages of 21 to 24. Neither of the 4 participants described themselves as a 10-finger-typer, which resulted in the drop of the confounding variable “typing skills”.

Keyboards of Apple computers differ in their layout from usual keyboards, but all the keys need for the task are similarly places on both systems. It is noted that some participants use Macs themselves.

## Results

It is to be expected, that trails with auto completion assistance yield faster results than trails without.