BabelDr – An Innovative and Reliable Translation Tool

Problem

Context:
Europe is facing a migration crisis.
At the Geneva University Hospitals (HUG):
• 52% of the patients are foreigners
• 12% don’t speak French at all

In terms of medical care, especially in emergency situations, language barrier can generate problems in:
• Quality
• Security
• Cost

Innovative

Advantages and Functions:
• Translation verified by experts at the Faculty of translation and interpreting, University of Geneva
• Back translation feature
• Not a word for word translation
• Guarantees data protection
• Translation according to patient gender
• Customizable to any situation or context

How it works

Use of a Speech-Enabled Fixed-Phrase Translator

Input:
Speech

Recognizable variants:
• Àvez-vous de la fièvre ?
• Àvez-vous de la température ?

Proposal of a core sentence:

Back translation:

Output:
TTS or recordings

Available languages:
• Spanish
• Arabic
• Farsi
• Tigrinya
• Sign language (LSF-CH)

What it looks like

Studies

Study 1. Can Speech-Enabled Phraselators Improve Healthcare Accessibility?
A Case Study Comparing BabelDr with MediBabble for Anamnesis in Emergency Settings

Population:
• Medical Students (N = 10), French
• 2 Standardized Patients, Spanish

Type of interaction:
• BabelDr – navigation using voice recognition system
• MediBabble – navigation through a tree system logic

Experimental design:

Crossover design

Session 1

Task 1

BabelDr

MediBabble

Session 2

Task 4

BabelDr

MediBabble

Results:

Number of correct interactions:

<table>
<thead>
<tr>
<th></th>
<th>BabelDr</th>
<th>MediBabble</th>
</tr>
</thead>
<tbody>
<tr>
<td>First use</td>
<td>198</td>
<td>195</td>
</tr>
<tr>
<td>Second use</td>
<td>135</td>
<td>132</td>
</tr>
</tbody>
</table>

Successful interactions:

• Similar performances

Difference in time by sessions:

• Time of use is lower
• Average time in favor of BabelDr is 11 seconds (95%CI, 4.6-17.3, p.<.001)

Difference in clicks by sessions:

• Less mouse clicks
• Average clicks in favor of BabelDr is 2.7 (95%CI, 1.8-3.7, p.<.001)

Study 2 (In Progress). Used at the HUG: Descriptive Analyses of Patient and Doctor Satisfaction in Emergency Settings

Patient

Communicate the reason of visit

Item 6: “Have you been able to communicate to the doctor the reason for your visit to the emergency room?”
• More than 75% of patients are able to communicate their problem to the doctor

Satisfaction level

Item 11: “How satisfied are you with this translation tool?”
• More than 90% of patients are satisfied with the system

Doctor

Satisfaction level

Item 21: “Regarding the use of this software, would you say that you are…”
• More than 75% of doctors are satisfied with the system

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References available at https://babeldr.unige.ch