

Evaluating an Authoring Tool for Mini-Dialogs



Figure 1. Screen shot of a mini-dialog from the Tactical French™ language and culture training system

Mini-Dialogs:

Widely-used form of Instructional Content in Alelo's Tactical Language and Culture Learning Systems (TLCTS)

Native-speaker recordings prompt the learner in a short conversational interaction

Grammar-based Automatic Speech Recognition (ASR) technology analyzes the learner's spoken response

~800 in Tactical Iraqi™ and Over 300 in Tactical French™ (around 15% of instructional content)

Authoring Mini-Dialogs

Involves manual authoring of large number of Answer / Feedback pairs

A possible learner response is entered here

The system feedback for that response is entered here

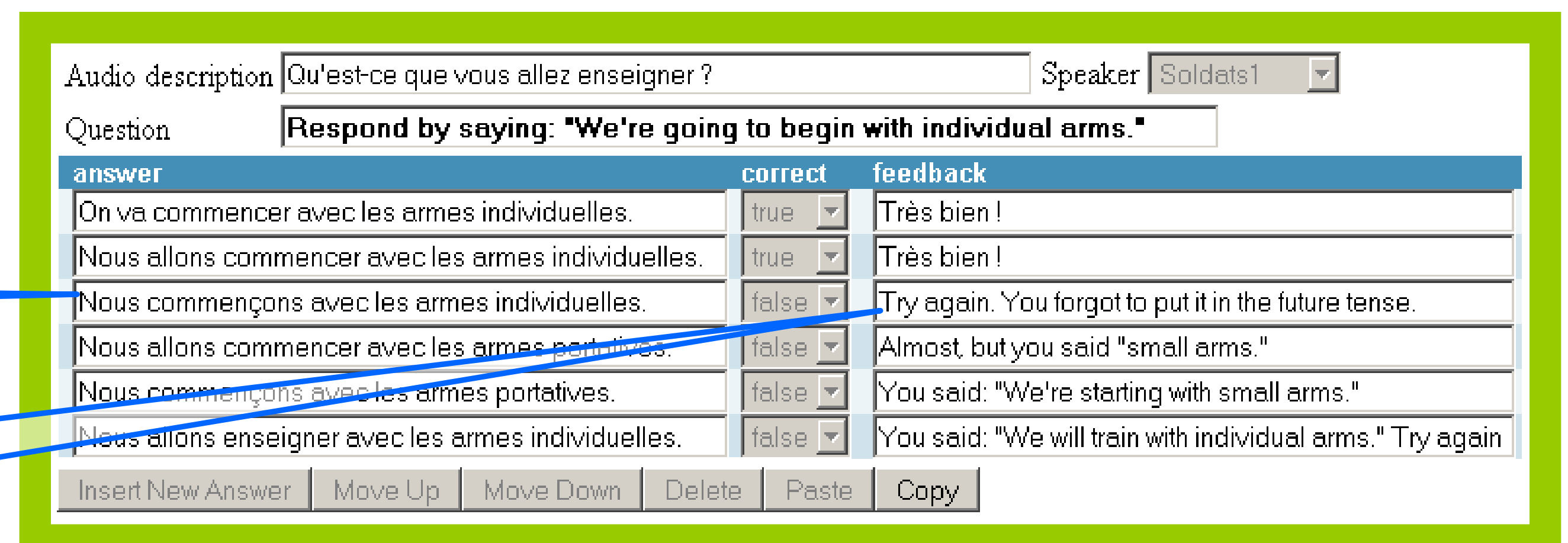


Figure 2. Screen shot of the first-generation authoring tool for mini-dialogs

Utterance Templates

Tiny generative grammars can be used to create many variations of answers associated with similar feedback

Example: Generates 8 variations of an answer

$\$chunk1 = (va \text{ commencer } |commencera);$

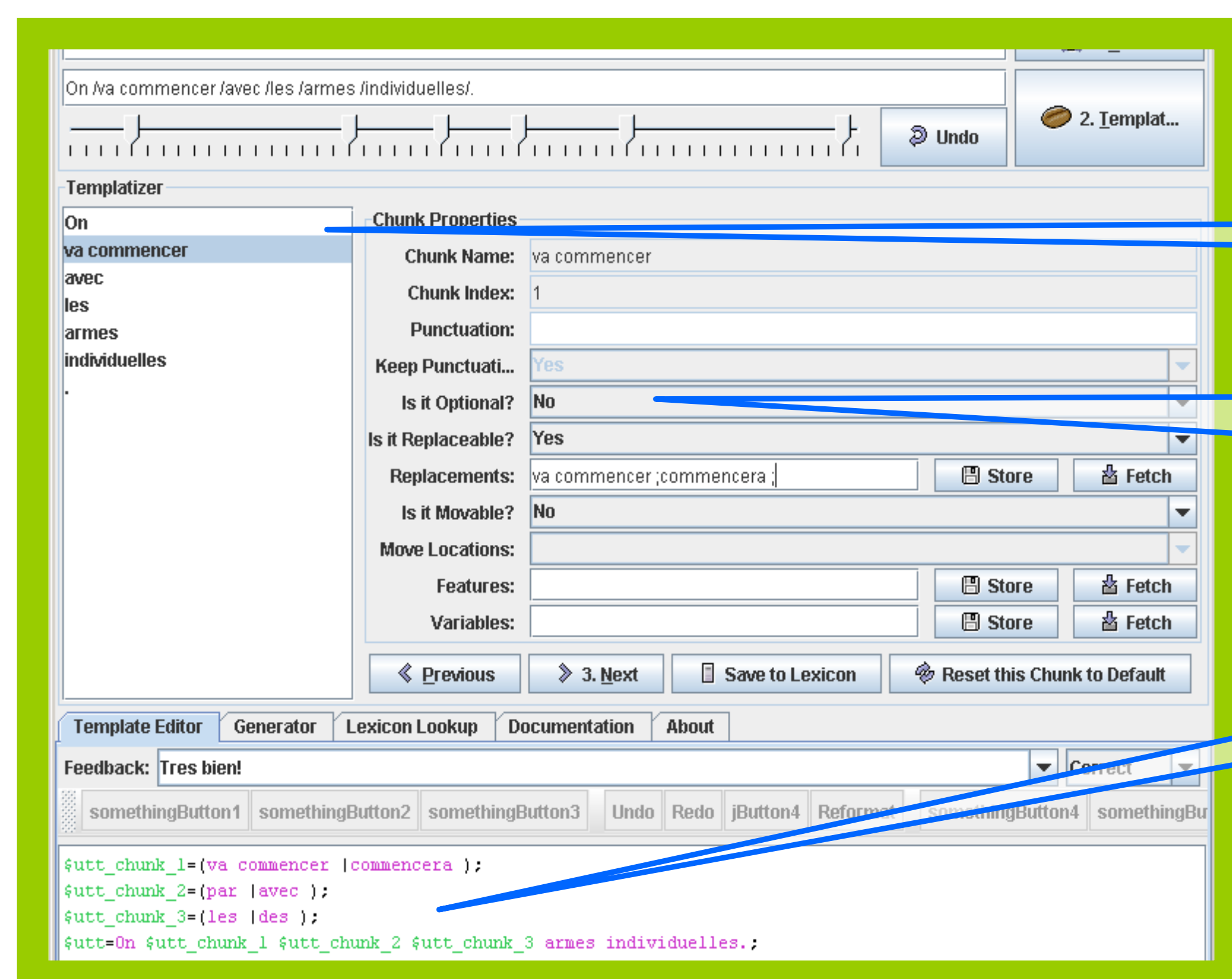
$\$chunk2 = (par \text{ avec });$ $\$chunk3 = (les \text{ des });$

$\$answer = On \text{ } \$chunk1 \text{ } \$chunk2 \text{ } \$chunk3 \text{ } armes \text{ individuelles.}$

New Authoring Tools: Templatizer

For example-driven utterance template creation

Uses Power Operations (Optionalize, Replace, Move) to make underlying grammar concepts easier to use by non computational linguists



Segment a candidate answer

Apply power operations to each segment

Power operations generate grammar rules

The grammar exports additional answers that can be post-edited or re-templated

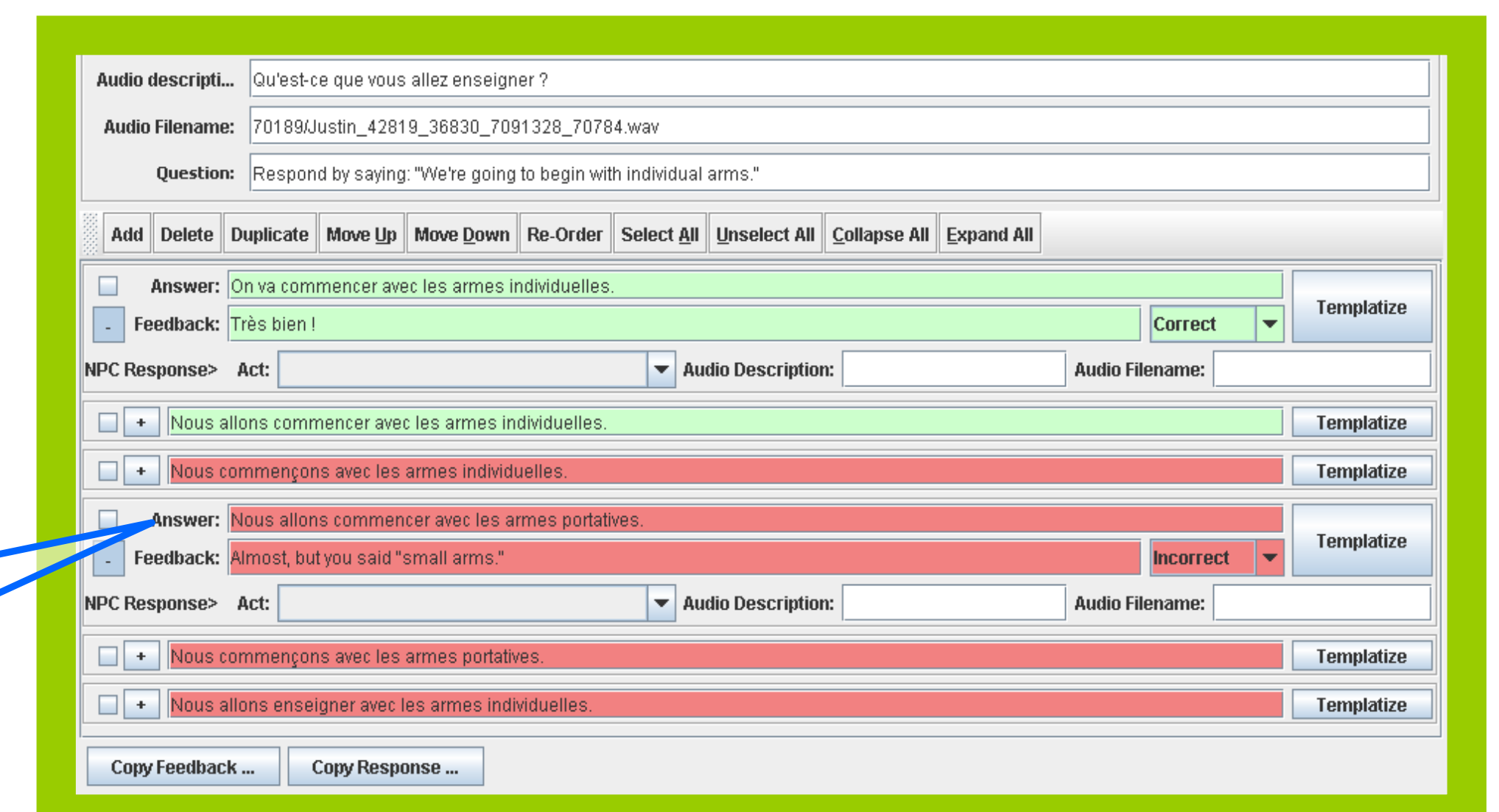


Figure 4. Screen shot of the authoring tool for post-processing Templatizer output

Evaluation

Four subjects

Content Developers

Three Tasks (1 hour long)

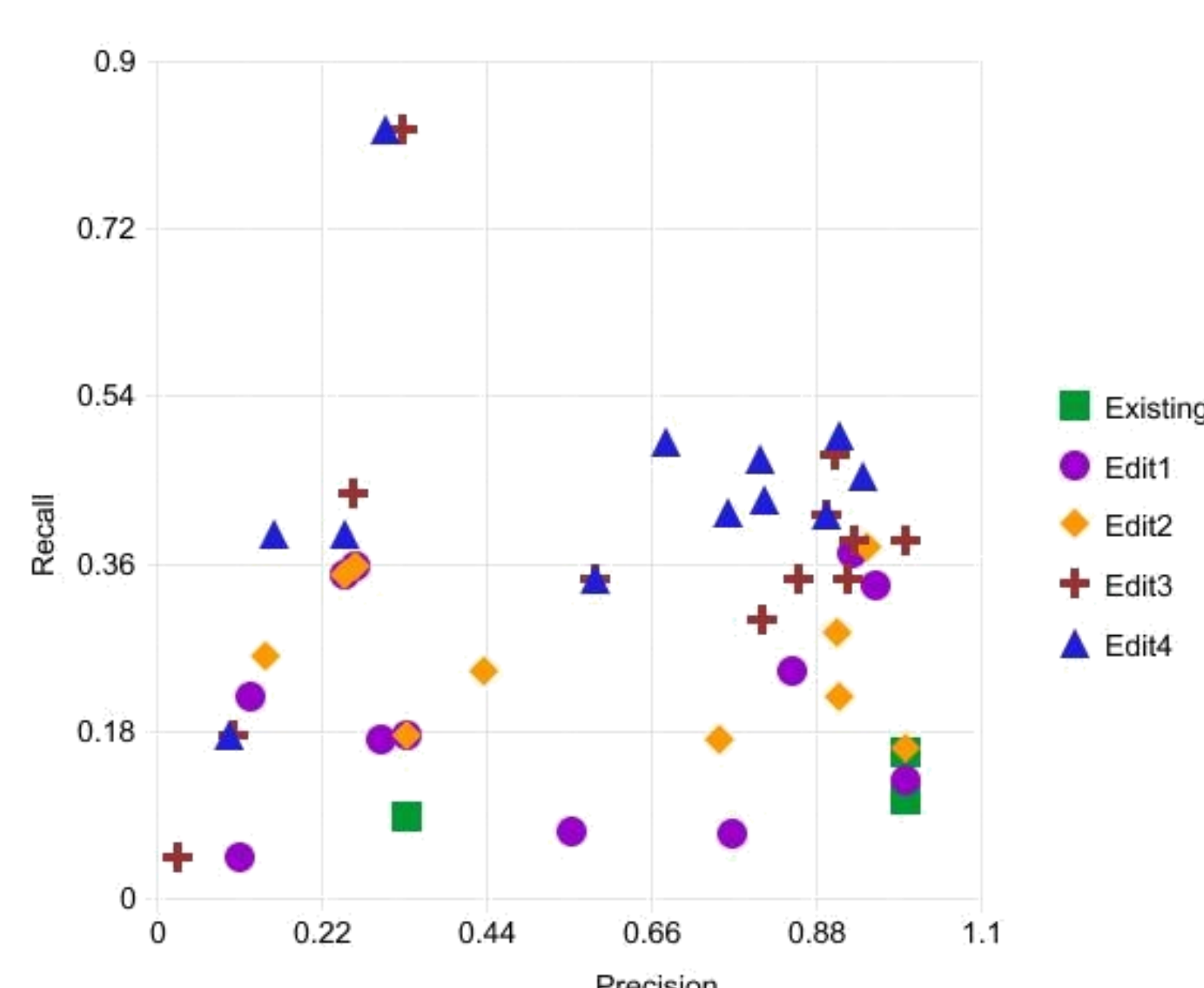
Split into Four Edit Sessions

Outcome Metrics:

Authored content quality

Number of useful answers

Subjective Questionnaire



Observations

More edits lead to better coverage of answers at the cost of precision (some unwanted answers)

Templatizer leads to a practice of overgenerate-and-prune

Mostly positive feedback on usability questionnaire

Rohit Kumar, Alicia Sagae, Lewis Johnson

Look for our paper in the Scalability Issues in AIED Workshop, and visit us online at www.alelo.com