

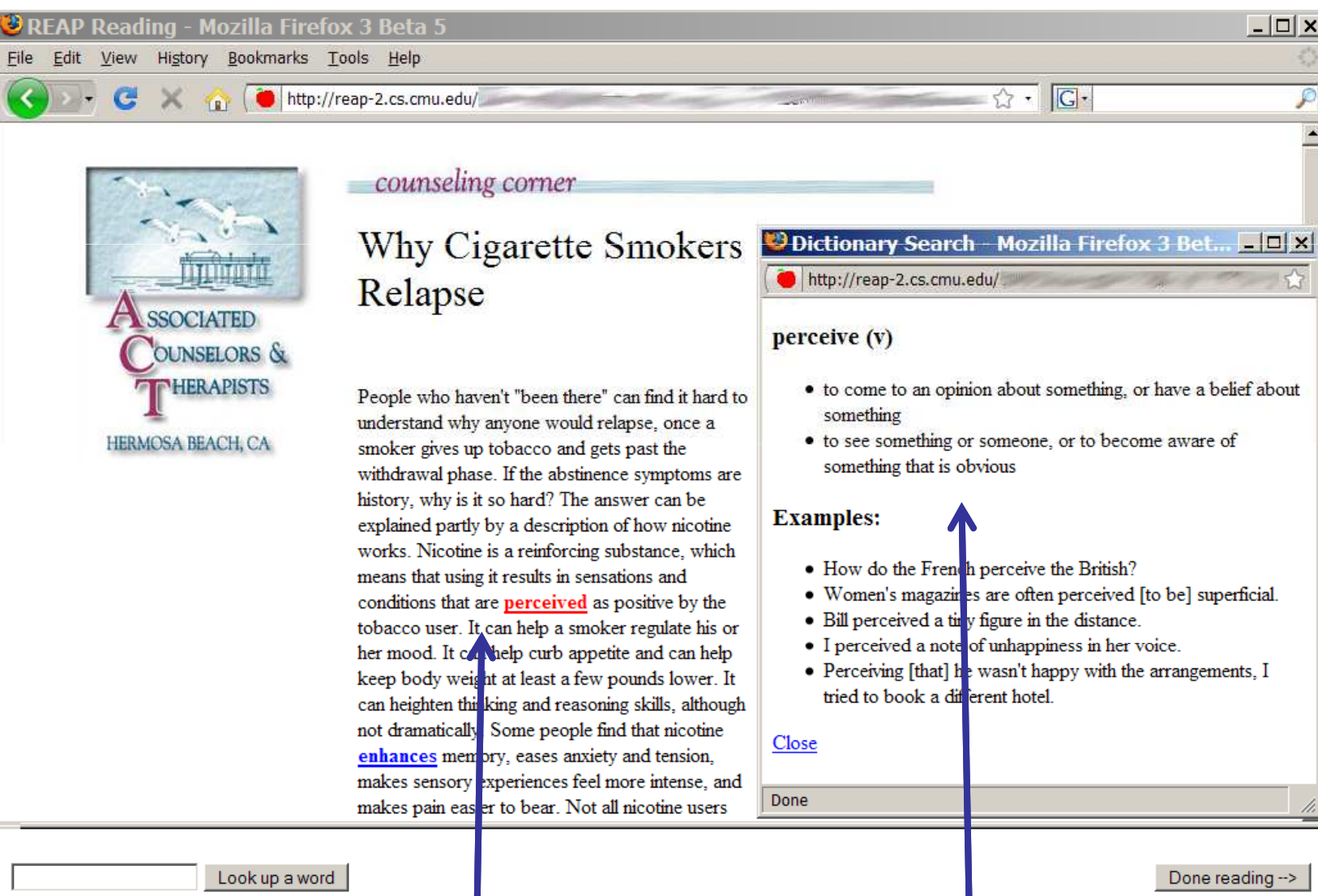
Providing Appropriate Texts for Language Learners

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Overview of the REAP Project

- Goals**
- Help students learn vocabulary from context as part of reading practice, using texts that satisfy specific needs.
 - Assist students in coordinating information about vocabulary:
 - Explicit generalizations from dictionary definitions,
 - Implicit examples from context.
 - Help teachers find texts that fit into their curricula.
 - Support researchers study reading and language learning.



Context (example) Dictionary Definition (generalization)

Tools and Resources for Supporting Learning from Texts

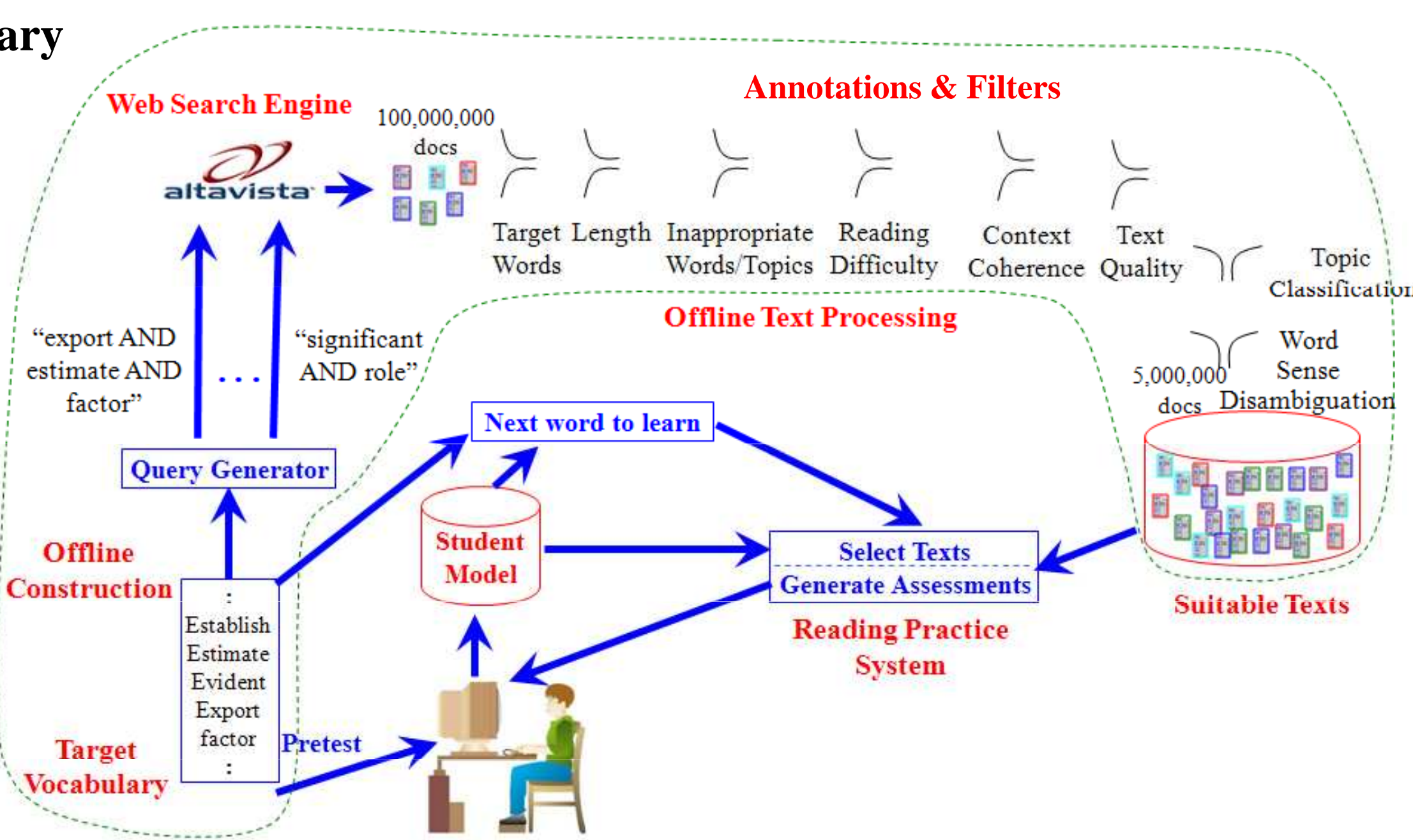
- The Web is used as a source of texts
 - It is large enough to provide texts that satisfy specific constraints
- Statistical language technologies
 - Identify texts that satisfy very specific instructional constraints
 - Model general relationships among vocabulary
 - Model a student's knowledge
 - Generate assessment questions & evaluate student responses
- REAP provide texts selected by either
 - A computer-based tutoring system for individualized practice
 - Teachers and researchers, via an intuitive, web-based search interface and curriculum management system.

Acknowledgments

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Creating a Digital Library for Language Learners

- An annotated database of texts supports the REAP Tutor system and the REAP Search interface.
- Candidate texts from the Web that contain target vocabulary are downloaded.
- Series of annotations and filters retain texts that satisfy constraints on:
 - Readability
 - Length
 - Text quality
 - Topics, ...
- Texts are stored in a full text index for easy, fast access using the Lemur Toolkit.



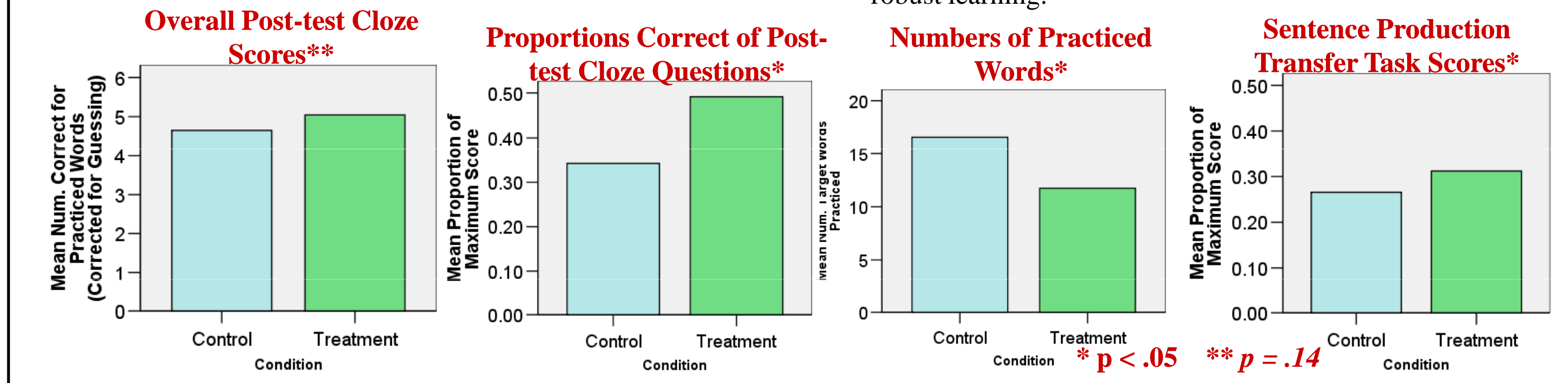
Matching Topics of Texts to Students' Personal Interests

Study Description

- Random Assignment of 33 high-intermediate ESL students to:
 - *Control* = REAP Tutor system selects practice texts based on reading difficulty, individual vocabulary needs.
 - *Treatment* = Control + matching of reading topics to personal interests based on survey.
- Interests Survey asked students, "Which topics are you interested in reading about?"
 - Sports, Business, Science, Arts, ...
- Post-test:
 - Cloze (fill-in-blank) vocabulary questions isomorphic to practice exercises.
 - Novel sentence production using target words

Results and Findings

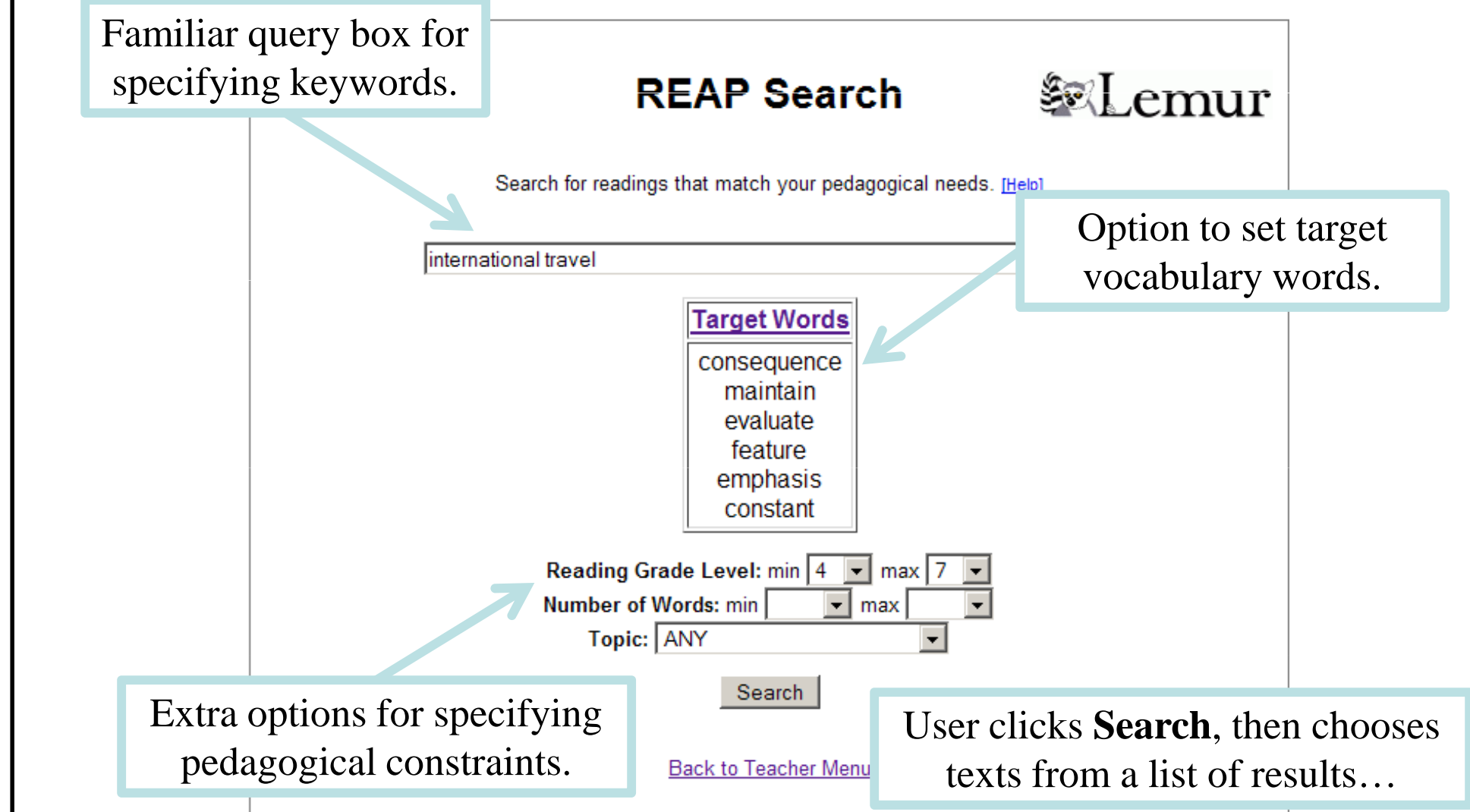
- Treatment group had slightly but not significantly higher overall post-test cloze question scores.
- Treatment group scored better on cloze questions for the words they practiced.
- Treatment group practiced fewer words.
 - REAP had difficulty finding readings that matched interested and had many practice opportunities.
 - This technical issue has been addressed by expanding the database of available readings.
- Conclusion: If the challenges of negotiating personalization and domain-based goals (e.g., density of practice) are overcome, personalization can lead to more robust learning.



Helping Teachers and Researchers Find Texts

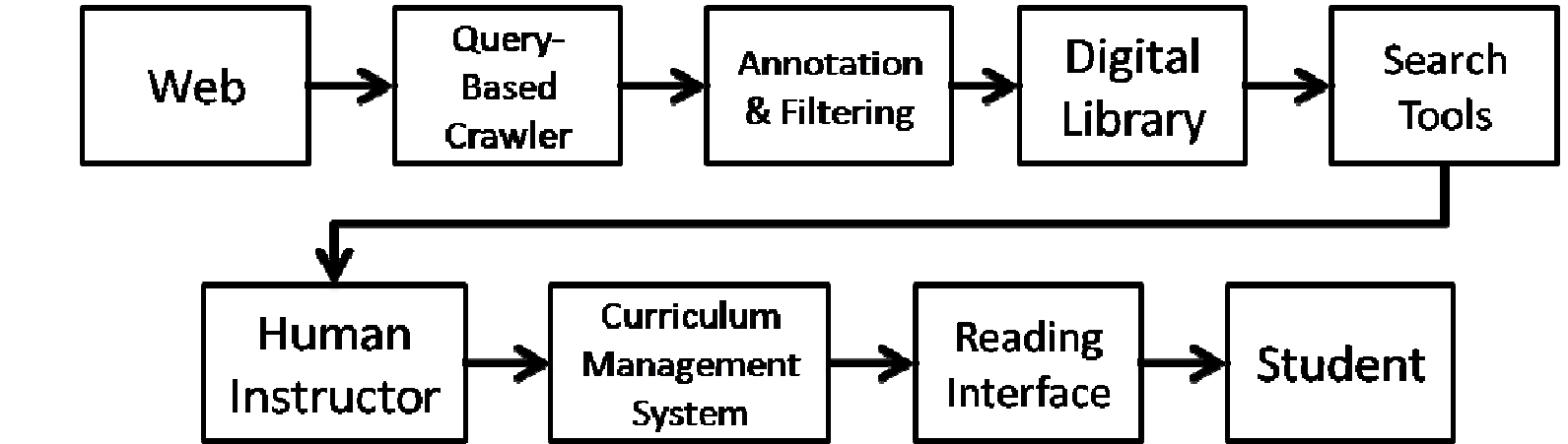
REAP Search

- Teachers/Researchers can search the digital libraries for texts that meet specific needs:
 - Texts with some of the target vocabulary from a particular lesson,
 - e.g., using the words "establish," "evident," and "specify."
 - Texts whose topic match up with the rest of the curriculum,
 - e.g., in a unit discussing the topic "international travel."
 - Texts within a certain reading level range.



Path of a Reading in REAP Search

- Practice readings follow a path from the Web to the student.
- Digital library stores texts that have been annotated and filtered (see top-center section).
- Search Tools (above) facilitates finding and selecting readings.
- Management System enables users to order texts, set time limits, highlight target words.
- Reading interface delivers the texts and provides dictionary access and other support.



Concluding Points

- REAP supports vocabulary learning from texts that are appropriate for specific students.
- REAP creates a searchable digital library of high-quality texts labeled by reading levels
- Matching topics of practice readings to personal interests can improve vocabulary learning.
- REAP provides search and curriculum management tools to allow teachers to find texts.
- For more information or to request access to REAP, visit <http://reap.cs.cmu.edu>.
- REAP could be expanded to support first language learning and younger learners.