



## Teaching and Investigating Higher-Level Comprehension Skills in LearnWeb, an Interactive Platform Integrating TED Talks

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### Abstract

*LearnWeb is an educational Web platform specifically designed for searching, collecting, sharing, and analysing open-access multimedia resources, through individual or collaborative activities. Among the many resources accessible through the platform there are TED talks, an open set of videos with multilingual transcripts that are gaining momentum as multimedia teaching resources. An advantage of accessing TED talks and transcripts in LearnWeb derives from the availability of extra interactive features specifically designed to support learning. More specifically, the students can highlight a word or part of a sentence in the transcript and tag it with an open annotation; furthermore, when the mouse passes over a highlighted word, the system automatically shows a set of definitions and synonyms for that word, taken from WordNet. Finally, if the students are not happy with their selection or tag, they can delete it and make a different one. The students' activities (their selections, tags, deletions, etc.) are logged, and log files can be accessed by the teachers for research purposes.*

*This paper illustrates the potential (and limits of the current version) of LearnWeb and its TED-related features for the teaching/learning of higher-level comprehension skills in academic curricula, by describing its use in a module on interpreting. In fact, the selecting and tagging features available on TED transcripts were used to help the students develop skills such as understanding discourse structure, distinguishing key elements of discourse from exemplifications and peripheral elements, and identifying speech acts. Furthermore, the logging feature allowed the teacher to collect precious information on the students' choices and difficulties while performing those tasks. While exercises of this sort do not necessarily require the use of software, detailed monitoring of the students' choices and mistakes would not be possible otherwise.*

### 1. Introduction

University teaching requires ever more flexible teaching tools and resources, in order to “incorporate more practice-oriented, media-based assignments to maintain students' interest and to achieve long-term [...] learning outcomes” [2: 266]. A relatively new tool for an interactive use and management of multimedia resources for pedagogical purposes is LearnWeb. Since its creation in 2009, LearnWeb has been used in varied learning scenarios, including ESP teaching [6], teacher training [1], media education and cooperative learning [3].

LearnWeb has recently integrated TED talks, an open set of videos with multilingual transcripts that are gaining momentum as multimedia resources for a range of pedagogical purposes, including supporting autonomous language learning [11], increasing student's motivation to study a foreign language [4], or training pre-service perspective teachers [8]. TED talks are valuable resources in educational settings for several reasons [8] [1]. In fact, they offer authentic spoken material, expose language learners to a variety of accents and topics (i.e., vocabulary), are accompanied by transcripts and multilingual translations, are freely available online, and are engaging in terms of form, as well as content.

The current paper illustrates how a set of interactive and logging features, newly introduced in LearnWeb and relating to TED talks, can be used to teach and investigate higher-level comprehension skills in university students specializing in interpreting. Specifically, Section 2 introduces LearnWeb and its TED-related features, Section 3 describes the advantages offered by LearnWeb in the given learning scenario, and Section 4 provides some concluding notes and sketches a few preliminary ideas for future work.

### 2. The LearnWeb platform

LearnWeb (<http://learnweb.l3s.uni-hannover.de>) is an educational Web platform specifically designed for searching, collecting, sharing, managing, analyzing and critically working with open-access multimedia



resources, through individual or collaborative activities. LearnWeb thus offers its users the opportunity to search for authentic resources from the Web and reuse them in a learning context [5] [1]. Specifically, LearnWeb currently integrates multimedia resources from a range of social networks providing user-generated contents (YouTube, Vimeo, Slideshare, Flickr and Bing), but also educational resources taken from authoritative/renowned institutions (e.g., the LORO portal <http://loro.open.ac.uk/> of the Open University) and other organizations (e.g., TED talks from the TED portal [www.ted.com](http://www.ted.com)). The platform has been developed using an *iterative evaluation-driven design-based research approach*, i.e. “a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually sensitive design principles and theories” [12]. Collaboration with teachers and researchers has led to the integration of various Web2.0 tools, such as GoogleDocs and WordWanderer. A detailed description of LearnWeb’s conceptual framework and features, and a comparison between LearnWeb and existing related systems is provided in [7]. In the current teaching scenario only a subset of the available features was used; these are described in the following paragraph.

### 2.1. TED talks in LearnWeb

The TED dataset has recently been integrated into LearnWeb in order to enlarge the range of resources useful in teaching/learning scenarios [10]. TED talks are provided in LearnWeb with the accompanying transcripts as available on the TED portal [9]. Once logged in, LearnWeb users can search the TED talk dataset by means of a standard keyword search. Interestingly, keyword searches are automatically performed not only on the titles of the videos, but also inside the transcripts. The desired video(s) can then be saved in the user’s resources and if necessary shared with other users. Once a TED video has been saved, it becomes available to the user along with its transcript(s), and they will be contextually displayed in the same window. Users can interact with the transcripts in several ways: they can highlight a word or part of a sentence in the transcript and tag it with an open annotation; furthermore, when the mouse passes over a highlighted word, the system automatically shows a set of definitions and synonyms for that word, taken from WordNet. Finally, if the user is not happy with a selection or tag, they can delete it and make a different one. The user activities (selections, tags, deletions, etc.) are automatically logged by the system, and log files can be accessed by the teachers for research purposes. Examples of the way TED videos and transcripts are displayed and the student’s actions are logged in LearnWeb are provided in the next paragraph, in Figures 1 and 2-3, respectively.

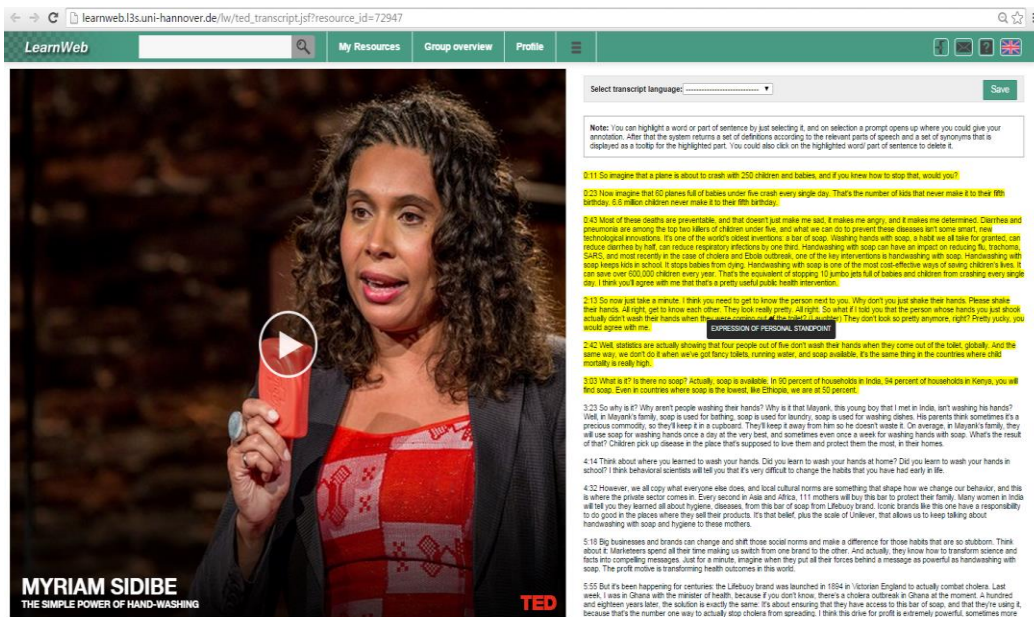
### 3. Using LearnWeb to teach and investigate higher-level comprehension skills: advantages and limitations

In academic year 2014-2015, LearnWeb and its TED-related features were used at the University of Salento (Lecce, Italy) within a module on Interpreting, in an MA curriculum for translators and interpreters. For most students, this module is their first encounter with oral forms of translation. For this reason, a few classes are systematically devoted to explaining the importance of higher-level comprehension skills in the interpreting profession and to helping the students to exercise their skills in understanding discourse structure, distinguishing key elements of discourse from exemplifications and peripheral elements, and identifying speech acts – tasks which are preliminary to the interpreting activity and fundamental in any interpreter’s performance.

In the current scenario, the teacher’s aim in using LearnWeb was many-fold: providing an appealing environment for otherwise boring tasks; exposing the students to authentic spoken material; allowing the students to work in class and/or from home; and last but not least, keeping track of the students’ steps and choices in performing the given tasks, for further analysis of the students comprehension skills, difficulties and needs.

For an easier analysis of the logs, multiple-choice exercises would have been the ideal solution, but the TED-transcript tagging features in LearnWeb only allow for open tagging. This limit was overcome by giving the students clear written instructions specifying a list of tags to choose from for each task. Furthermore, LearnWeb does not currently support multi-colour selections; every selected piece of text is automatically highlighted in yellow, and the tag corresponding to each selection is displayed in black when the mouse passes over the selected text. Given the nature of the current tasks, it was thus necessary to instruct the students to save the same video resource three times with different names (Task 1, Task 2, and Task 3), each copy to be used for the corresponding exercise.

The students had never used LearnWeb before, and the exercises were planned as class activities, so that the teacher could help the students in case of technical problems. Instructions were thus given out in class. Task 1 required the students to work on the transcript of the first six minutes of a given video and to divide it into five sections corresponding to the following ‘titles’: *Speaker’s key point; Current situation; Reasons for current situation; How can current situation be changed and by whom; Evidence supporting this solution*. Task 2 asked them to analyze the same piece of text and to distinguish key assertions from exemplifications or other ancillary pieces of text by using tags *Key vs. Ancillary*. Finally, Task 3 required marking each clause in the first three minutes of the speech and specifying its discourse function. For this task, the following tags were provided: *Assertion; Exemplification; Suggestion; Invitation; Request; Apology; Complaint; Thank; Compliment; Expression of personal standpoint; Rhetorical question; Other (specify)*. Figure 1 shows how TED videos, their transcripts, and the student’s tags are displayed in LearnWeb.



**Figure 1: Example of TED video, transcript viewing, and student annotation**

All the students’ activities (their selections, tags, deletions, etc.) were logged automatically and the data are currently being analyzed. Two different log tables are provided in LearnWeb. A detailed log (Figure 2) shows: name of the student who added the video (Student Name), resource name (TED Talk); name of the student who added the tag (Added by); the selected text (Word/Words); the tag (User Annotation); the student’s Action; and the time of the action (Time Stamp). Please notice that this log displays the data in reverse chronological order. A summary log (Figure 3) shows counts of the student’s activities (selecting, deselecting and tagging).

Student Name	TED Talk	added by	Word/Words	User Annotation	Action	Time Stamp
GiuliaFeltrinelli	task 3	GiuliaFeltrinelli	and if you knew how to stop that, would you?	rhetorical question	selection	2014-10-20 19:45:32.0
GiuliaFeltrinelli	task 3	GiuliaFeltrinelli	and if you knew how to stop that, would you?		deselection	2014-10-20 19:45:20.0
GiuliaFeltrinelli	task 3	GiuliaFeltrinelli	and if you knew how to stop that, would you?	request	selection	2014-10-20 19:42:17.0

**Figure 2: Example of detailed log**



LearnWeb		My Resources	Group overview	Profile	≡	📄	✉	🇬🇧
Transcript Logs								
(1 of 3)    <<    <<<    1   2   3    >>>    >>    30 ▾								
Username	TED Talk	Selection Count	Deselection Count	User Annotation Count				
silvia.cristofaro	<a href="#">Task 1</a>	9	23	3				
silvia.cristofaro	<a href="#">Task 2</a>	62	21	54				
silvia.cristofaro	<a href="#">Task 3</a>	35	8	30				

**Figure 3: Example of summary log**

The data from these two logs provide insight into the types of difficulties the students had in performing the given tasks. A limit of the current version of LearnWeb is that the logs can only be accessed on-line; however, an Excel version of the logs can be requested from the platform's administrators.

#### 4. Concluding notes

The platform met the teacher's expectations as regards its ability to support the given learning tasks. Although the tasks were rather boring, they seemed to engage the students, to the extent that some students continued the exercises outside class hours, as testified by time stamps. Further insight into this matter will emerge from careful analysis of the activity logs. The two activity logs will also provide insight into the types of difficulties the students had in performing each tasks.

In line with the original iterative design-based approach, the LearnWeb system is constantly updated to address the requirements of the users (teachers and students) who adopted it in various learning scenarios. Since the time the current experiment was carried out, the platform has already integrated new features to support the use of TED talks and transcripts in translation and interpreting courses, the main feature being the possibility to create and update multilingual glossaries in a collaborative way. LearnWeb developers are currently studying the integration of other features, such as: multiple-choice tagging options set by the teacher; downloadable log data; alternative ways to display the students' selections and tags.

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