

Auralog® *Tell Me More* Language Learning Software

Making Content Searchable & Automating Customization

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1 Executive Summary

- ❖ Auralog *Tell Me More* (Ver 7; in short: TMM7) seems a high-quality and -quantity computer-assisted language learning solution that seems hampered by its lack of adaptability¹ to the course-based secondary and tertiary language education curriculum.
- ❖ To help amend this, the current project will create two automation scripts (with documentation):
 - one to **extract all teaching content** from an TMM installation into (about, in our installation of English, French, German and Spanish, 52000) Pdf-files and to make the content searchable (by categories and full text) for instructors/course-convenors
 - Bonus: Linked Table of Contents
 - one to **automate creation of customized learning paths** based on simple rearrangements of these pdf-files into subsets through searching by instructors/course-convenors.
 - Bonus: 840 (2 per chapter of our English, French, German and Spanish content) learning paths to differentiate provision between stronger and weaker learners.

2 Status and Needs

- ❖ The main benefits of TMM7 are the wealth (over 2000 hours of interactive exercises for each of the languages taught at Aston (English, French, German, Spanish) and the pedagogically sound quality of its content (which covers all 4 skills and includes a speech recognition component content, as well as an attractive interactive delivery of content to the students).
- ❖ However, when we attempted to integrate TMM7 into our language programmes, a number of problems became apparent. TMM7 seems to have been designed not for a secondary or post-secondary HE environment, but a business environment where an independent learner is only loosely coupled with a tutor, while the UK secondary, FE and HE sector will want to use TMM7 as a component in a highly-integrated service to enhance the value of its module-based educational offering. In particular, we need to organize the content according to the language deficiencies of our students and to fit it into existing modules, including their syllabus and course materials.
- ❖ TMM7 (TutorTools) allows customization of its content by the instructor (in so called Learning Paths). However, our instructors, including early adopters of technology, found in TMM7
 - no content search,
 - an unsatisfactory content preview,
 - an inconvenient interface with deeply nested hierarchies requiring seemingly endless individual point-and-click mouse-operation for each of a series of largely repetitive tasks.
 - To further complicate things, TMM7 seems to have neither an Application Programmer Interface (API) nor non-proprietary file formats for their content (.aps for print selection, .al7 for learning path; the most compatible export format seems CSV which is an export option only for student results). Tutortools does provide a tool to print content, with similar limitations as the learning path creation tools (as described above) which we are trying to overcome with the following project.

3 Action

- ❖ We researched the few tools on the market that attempt automation of applications which lack an API. One tool, in the form of a full-fledged Integrated Development Environment (IDE), stood out, as it has

¹ TMM7 seems per design a self-access, computer-as-tutor software program which offers hardly any materials that could be used meaningfully in a face-to-face class. Its built-in learning paths (which combine topical vocabulary and grammatical structures into “Units” that are the equivalent of textbook chapters) seem bound to conflict with the instructor’s own face-to-face teaching material and overall course design, unless the built-in learning paths are heavily adapted. Lickey (2005) and Lickey (2006) has consistently pointed out the lack of ‘integrability’ and ‘customisability’ as a major drawback of TMM7, and Lickey (2007) confirms for TMM9 – which, albeit now online, has hardly changed in this respect – that TMM is “less well” “adaptable (...) in (...) content” is consistently named as one of the major “[c]hallenges of integration and blending” of this software package.

established itself, over the last couple of years,² notably also at leading US HE institutions, is free, open source and has [a large and active user base](#), is [Autolt](#) (Ver 3; see Figure 1: Automating TMM7).

```

340 ////////////////////////////////////////////////// FUNCTIONS for STANDARD OPERATIONS IN AURALOG;;;
341 func studentsRemoveGroups() ; for all auralog students, remove all studentgroups
342 EndFunc
343 func studentRemoveReturnStudentGroups() ; remove current student from all student groups, but ;
344 EndFunc
345 func studentAddStudentGroups($astrStudentStudentGroups) ; todo: add current student to (paramet
346 EndFunc
347 func addStudentGroupTypesAndNames() ; this needs to be run only once: later additions to modules
348 EndFunc
349 ////////////////////////////////////////////////// HELPER FUNCTIONS for STANDARD OPERATIONS IN AUF
350 func SetupProgramPart($windowtitle,$strPart)
351 EndFunc
352 func SetupProgram($windowtitle)
353 EndFunc
354 func copyEditControl($windowTitle, $editname)
355 EndFunc
356 func clearEditControl($windowTitle, $editname) ; for auralog edit controls
357 EndFunc
358 func openWindowModify($sintindex = "")
359 EndFunc
360 func closeOKWindowModifyStudentStudent()
361 EndFunc
362 func openWindowStudentGroupTypes()
363 EndFunc
364 func openWindowStudentGroupTypesAdd()
365 EndFunc
366 func openWindowStudentGroupAdd()
367 EndFunc
368 func sortSysListViewByName($windowTitle, $controlname) ; thru click on listview column header, ;
369 EndFunc
370 func SearchStudent($strAppname, $strStudentname) ; todo: search = put into listview, the (param
371 EndFunc
372 func listViewAllItemsRemoveReturn($windowTitle, $listviewClassNI, $removebuttonclassNI) ; from
373 EndFunc
374 func listViewFirstItemRemoveReturn($windowTitle, $listviewClassNI, $removebuttonclassNI)
375 EndFunc
376

```

Figure 1: Automating TMM7 with Autolt

- ❖ An [Autolt](#) (Ver 3) script will be programmed to print all content into pdf-files with a categorising naming scheme that will make the full-text- and categories searchable.
- ❖ Benefits: This will enable users of our project
 - For grammar exercises
 - to extract,
 - 13.370 grammar exercises (English: 3.716 pdf files, French: 3.402 pdf files, German: 2.850 pdf files, Spanish: 3.402 pdf files) and
 - with a single mouseclick, thus saving
 - 13.370 * 16 = 213.920 mouse clicks
 - 13.370 * 5 = 66.850 “eyeballing” of selection lists
 - 13.370 * 6 = 80.220 manual extractions of filename elements (for the categorization and consequently searchability of the content)
 - ◆ Example: Language=[Spanish], Family=[Complete_Beginner], Contenttype=[Activity], ActivityOrUnitOrCulture=[Dialogue], Exercise=[Presentaciones_1elements]
 - SUM = 360.990 manual GUI operations will be saved, per institution, for extracting the grammar content alone.
 - For cultural exercises: add [number of exercises to be determined] times [see procedure above]
 - Times 3, for 2 additional sets of files that can be distributed to students:
 - 1 set saved with the option: “do not print solutions”
 - 1 set saved with the options “print solutions” and also “print translations” .
 - ❖ Content Search: “Hook-up” of the printouts with MS Windows Desktop Search
 - Benefits
 - save instructors the effort to learn a proprietary and obsolete user interface by Auralog, in favour of reusing MS Desktop Search, which is the default search on MS-VISTA and a free add-on to MS-Windows XP;
 - enable instructors, in conjunction with our file naming scheme, to run sophisticated queries against the TMM7 content to answer questions of a practical relevance (see Figure 2: Content Search (matched printout files with naming scheme) with Preview) :

² Cf. [Iowa State University Help Desk application](#) presented at the Association of Computing Machinery (ACM) Special Interest Group on University and College Computing Services (SIGUCCS); [Arlington Heights Memorial Library application](#) at Wisconsin/Illinois Innovative Users Group (WILIUG) June 2006 Conference. As an extension of a JISC funded project see [Oaklands College of FE TechDis deployment](#).

- **Example:** “I need my students to work on [past tense] exercises on a level not beyond [beginner to intermediate +], and I want them to engage in [Dialogue]s”;
 - give instructors a usable content preview;
 - empower instructors, beyond specific learning path adaptations we can provide, to explore the content in order to come up with their own customizations, for an optimal use of TMM7 in their own teaching environments.
 - The project outcome is designed to form the basis for another program that will automatically create a learning path within Auralog from exercise files that instructors have copy/pasted from their MS Desktop Search into a temporary folder.
- ❖ A 2nd [Autolt](#) (Ver 3) script will be programmed to automate creation of custom learning paths for syllabus integration.
 - Based on the previously printed-out files whose file naming scheme will enable automated re-importing of human-selected learning paths into TMM7.
 - After searching and identifying, with the preview pane, the relevant exercise files for his/her current teaching needs, the instructor will be able to select multiple files from the Windows Desktop search results pane and copy/paste them into a network (sub)folder (of his/her name choice).
 - An Autolt Process will monitor this folder for additions, and automatically convert any new subfolder into a learning path,
 - Using the subfolder name as name for the learning path name;
 - Using the file names in the subfolder to step through the TMM7 hierarchy of windows and controls, and search for and select the appropriate exercises that are to become part of this learning path.
 - Benefits: This part of the project will enable users of our project
 - to easily create an indefinite number of customized learning paths, focussing on their own pedagogy and the valuable TMM7 content
 - without having to learn a proprietary and obsolete user interface by Auralog.
 - Sample Learning paths:
 - Will divide the content of all chapters of all languages in our TMM7 (English, French, German, Spanish) into an abridged learning path for the stronger learners and an additional review section for the weaker learners, to take advantage of the automatic grading of TMM7 during homework.

4 Budget requested

- ❖ Staff time 230hrs*£13 = £300
 - 90hrs ICT work (development of software and software training) for printing script
 - 70hrs technical programming
 - 40hrs: Programming the core functionality
 - 7hrs: Adding a GUI (Printing Options)
 - 8hrs: Generalization (Compilation, packaging, distribution, deployment)
 - 10hrs: Debugging, Testing
 - 5hrs: Creation of MS-Excel Table of Contents
 - 5hrs: Interfacing with MS Desktop Search (search syntax)
 - 10hrs: creation of software training materials (text, video) for dissemination
 - 90hrs ICT work (development of software and software training) for learning path creation script
 - 80hrs technical programming
 - 12hrs: Programming the monitoring of the network share, including Graphical User Interface (GUI) for the location setting.
 - 50hrs: Programming the core TMM7 automation.
 - 8hrs: Generalization (Packaging, distribution, deployment).
 - 10hrs: Debugging, Testing.
 - 10hrs: creation of software training materials (text, video) for dissemination
 - 50hrs pedagogical work (content exploration and division into learning paths application)
 - 45hrs: researching of content and organization of the material to fit the pedagogical aims
 - 5hrs: Running the automation software (includes final practice testing time).

5 Risk Evaluation

- ❖ The project which attempts to mediate between TMM7 and educational institution users, is of only medium difficulty:
 - On the TMM7 (on MS-Windows)-side
 - The script does not attempt to interact with the TMM7 **student front end** (which is based on Flash which is notoriously proprietary and difficult to interact with).
 - This **administrative backend** (here: Tutortools) of TMM7 appears to be very stable (maybe more so than one would wish).
 - Autolt relies on the **MS-Windows windowing system** architecture which can also be considered stable.
 - On the **user-side**
 - For the **printing script**:
 - there is no need for dealing with user interaction in this script,
 - except that the executable needs to be started (presumably by ICT personnel) and needs to collect some initial options from a printing preferences dialogue
 - For the **learning path creation script**:
 - Again, the executable needs to be started (presumably by ICT personnel).
 - There is some indirect interaction with instructors/course convenor non-technical personnel who will provide folders with renamed files. This input needs to adhere to the file-naming conventions which need will have to be simple, communicated clearly and against which the script will have to error-check, with easy-to-understand error messages.
 - Low maintenance/“Shoot and forget”: There is
 - **no ongoing interaction** between script and instructors/course convenor;
 - **no direct interaction** whatsoever between script and student users.

6 Expected outcomes: Deliverables and Benefits

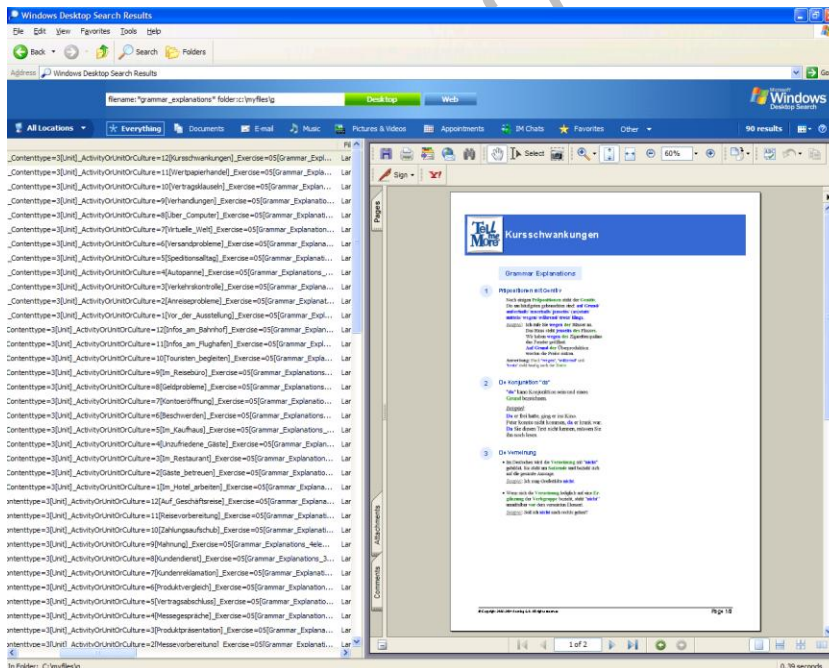


Figure 2: Content Search (matched printout files with naming scheme) with Preview

- ❖ Content Extraction:
 - Deliverables: Computer Program to automate the exportation

- We can obviously not provide the exported content (pdf-files) for licensing and copyright reasons. However, the computer program will allow any licensed user of the current version of Auralog Tell Me More to export their content automatically.
- A self-contained executable, all files bundled into one package, eliminating need for extraction
- A GUI with options for the end-user
- The only pre-requisite is the installation of some (free) helper programs
 - [PDF Creator](#)
 - [MS-Windows Desktop Search](#)
 - MS-Excel for search from Table of Contents (see Figure 3: MS-Excel Table of Auralog Contents)

4	Language	FamI	Contenttype	ExerciseType	Exercise	Elem Link	Unit					
5	L#	LName	F#	FName	C#	CNameI	T#	TName	E#	EName	EL	U
13296	4	Spanish	9	Business++	3	Unit	8	Resolver problemas	11	(All)	6	Open 4.9.8
13297	4	Spanish	9	Business++	3	Unit	8	Resolver problemas	12	(Top 10...)	1	Open 4.9.8
13298	4	Spanish	9	Business++	3	Unit	8	Resolver problemas	13	(Custom...)	1	Open 4.9.8
13299	4	Spanish	9	Business++	3	Unit	8	Resolver problemas	14	¿Algo que declarar?	2	Open 4.9.8
13300	4	Spanish	9	Business++	3	Unit	8	Resolver problemas	15	A B C	17	Open 4.9.8
13301	4	Spanish	9	Business++	3	Unit	8	Resolver problemas	16	A birthday party	2	Open 4.9.8
13302	4	Spanish	9	Business++	3	Unit	8	Resolver problemas	17	A breakdown ++	2	Open 4.9.8
13303	4	Spanish	9	Business++	3	Unit	8	Resolver problemas	18	A bus trip	1	Open 4.9.8
13304	4	Spanish	9	Business++	3	Unit	9	Hacer un contrato	1	A camping trip	1	Open 4.9.8
13305	4	Spanish	9	Business++	3	Unit	9	Hacer un contrato	2	A car trip	6	Open 4.9.8
13306	4	Spanish	9	Business++	3	Unit	9	Hacer un contrato	3	A city tour	2	Open 4.9.8
13307	4	Spanish	9	Business++	3	Unit	9	Hacer un contrato	4	A driving lesson +	31	Open 4.9.8
13308	4	Spanish	9	Business++	3	Unit	9	Hacer un contrato	5	A la gare	4	Open 4.9.8
13309	4	Spanish	9	Business++	3	Unit	9	Hacer un contrato	6	A la réception	1	Open 4.9.8
13310	4	Spanish	9	Business++	3	Unit	9	Hacer un contrato	7	A l'aéroport	4	Open 4.9.8
13311	4	Spanish	9	Business++	3	Unit	9	Hacer un contrato	8	A new bank account +	13	Open 4.9.8
13312	4	Spanish	9	Business++	3	Unit	9	Hacer un contrato	9	A police inspection ++	8	Open 4.9.8
13313	4	Spanish	9	Business++	3	Unit	9	Hacer un contrato	10	A school exchange	5	Open 4.9.8
										Picture&Word Association	8	Open 4.9.8
										Sentence Practice	5	Open 4.9.8
										Text Transformation	1	Open 4.9.8

Figure 3: MS-Excel Table of Auralog Contents

- Content Search: Deliverables
 - Training Materials: Software Video to explain how to effectively search the exported content
 - using MS Desktop Search
 - answering concrete foreign language teaching questions
- ❖ Automated Learning Path Creation
 - Deliverables: Computer Programme to automate the Learning Path creation
 - A self-contained executable, all files bundled into one package, eliminating need for extraction.
 - A GUI with file locations options for the end user
 - Instructional video materials for
 - the administrator, about how to monitor the network folder;
 - the end user, about how to use the content printout files, MS Windows Desktop Search and the network share folder location (see Figure 2: Content Search (matched printout files with naming scheme) with Preview).

7 References

Leakey (2005): TELLMEMORE (v.7) EVALUATION - University of Ulster. 2004/5 (manuscript)

Leakey (2006): Jonathan Leakey, 'Evaluation Of A One-Year Trial Of Auralog's Tellmemore Education (Version 7) Software Package In A Higher Education Context' University of Ulster, Northern Ireland. CALL EJ online, Vol. 8, No. 1, June 2006. (Retrieved 08/01/2008).

(manuscript)