

**GLO (GRAMMAR LEARNING  
ONLINE).  
INTEGRATING LANGUAGE  
LEARNING FUNCTIONALITY WITH  
QUESTIONMARK™ PERCEPTION**

**Jo Spiller**



# **GLO (Grammar Learning Online). Integrating Language Learning Functionality with QuestionMark™ Perception**

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## **Abstract**

Within the Division of European Languages and Cultures (DELIC) at the University of Edinburgh, several computer-assisted language learning (CALL) programmes are used to support the course curricula. Many of these are legacy MS-DOS based programmes they have become outdated in both presentation and language content and their usefulness in providing secure and reliable assessment is, at best, very limited.

There was a strong need to find a replacement that would both update and enhance the provision of language assessment whilst retaining the most useful features available in the existing CALL-based software, so that both summative and formative e-assessment could be delivered in a more flexible and updated way.

This paper describes work on GLO (Grammar Learning Online) a project funded by the University of Edinburgh's Principle's e-Learning fund to provide an online assessment solution suitable for all language departments within DELIC.

GLO uses the Macromedia™ Flash question type within the QuestionMark™ Perception™ assessment framework to incorporate certain specific features of language learning testing. This paper also describes the process of converting question content Word files, as authored by course tutors, into the template .XML files as required by Flash.

## **Introduction**

'More than other subjects, language skills develop continuously and are far more suited to assessment in quizzes or informal chats, than a single final exam, where a bad mark can demotivate, and make students scared of continuing' (Britton, 2005).

Language testing is an integral part of language learning (Dooey, 2008) and the existing CALL provisions made accurate and reliable assessment of students' performance difficult. In some of the more widely used programs,

results were stored on the students' local drives in text files and required trust that the students then forwarded these unedited files to their tutor by email.

A secure, reliable channel for assessment delivery was required and one which would provide benefits to staff in terms of the 'validity and reliability' (Dooley, 2008) of the test results and the nature and range of the test performance data that could be captured. This would enable more accurate analysis not only on the students' performance but the effectiveness of the assessments themselves.

For students, the popularity of the language lab was in decline due to the fact that the technology itself was felt to be outdated and outmoded, not user-friendly, not sufficiently stimulating in either content or design and inflexible in delivery.

Multimedia can provide opportunities for student creativity, and learner confidence is increased by its non-judgmental correction of errors, (immediate feedback in terms of "right", "wrong", "try again"), allowing for 'experimentation in a supportive environment' (Dugard and Hewer, 2003). (Hunt, Neill, Barnes (2006))

## **Project Background**

QuestionMark™ Perception™ was chosen as the assessment engine to use due to its assessment presentation, scheduling and reporting capabilities. Perception™ is already widely used within other departments at the University of Edinburgh, and would therefore offer benefits in terms of institutional support and potential scalability.

However the standard question types available in Perception™ were not sufficient to allow retention of certain features of the currently used CALL programmes, nor to integrate the desired enhancements. This was specifically regarding exercises where students were required to enter a short phrase or sentences in answer to a question.

Some of the features of existing CALL programs to retain were:

- Fuzzy Matching – stripping out additional white space in the students' submitted answer before evaluation, optional inclusion or omission of punctuation and case sensitivity in the evaluation and the ability to set multiple possible correct answers for each question.
- Wrong Answer Feedback – the ability to anticipate common errors, either single words or partial phrases within a submitted answer and provide specific tailored feedback in each instance in order to guide them to the correct answer. The replacement of invalid characters in misspelt words with a '\*' character to guide students to the correct spelling.

- Question attempts and scoring – the ability to allow students multiple question attempts attempt (up to a maximum of three) and setting scores for each attempt.
- The main enhancement required was to update and ease the way in which students accessed the language specific character keys.

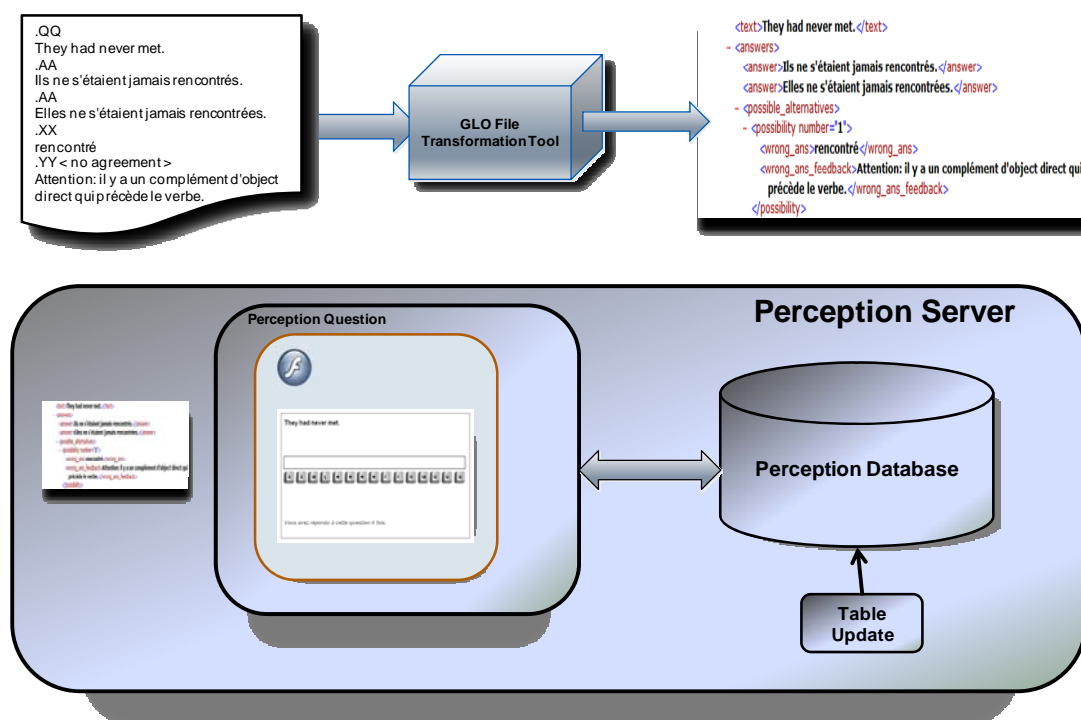
## **The Solution**

It was decided to use the Macromedia Flash™ question type within QMP as this meant basic animated features for the special character keys could be included. It also meant that Actionscript, the coding language native to Flash, could be used to build in the text processing logic required to retain the current CALL program features as described above. This was the most suitable question type available within QMP for this degree of flexibility.

The Flash engine that was built, known as GLO, requires an XML file to be uploaded at the beginning of the assessment. This file contains all the details for each of the questions, including the question text, the multiple allowable correct answers, the multiple predicted wrong answers and the feedback to be given in each circumstance, the number of allowed attempts to answer the question and the scores to be applied for each attempt.

The issue of how assessments should be authored and how to migrate existing CALL exercises from their previous platform to the new was addressed by providing a conversion tool that would transform a Word file with the authored questions into the XML file required by Flash and apply some assessment configuration in the process.

## Overview of the GLO process



**Figure 1 – Overview of the GLO process within QuestionMark™ Perception™**

Question files contain the introduction to the exercise, the text for each question, the list of acceptable correct answers, any predicted wrong answers (either single words or partial phrases) and the appropriate feedback that students will receive, any final summary to give students on completion of the question.

These question files are authored using MS Word by course tutors, who then use the GLO File Transformation Tool (available from their desktops) to add some assessment-specific configuration and then converted into the XML format, as required by Flash.

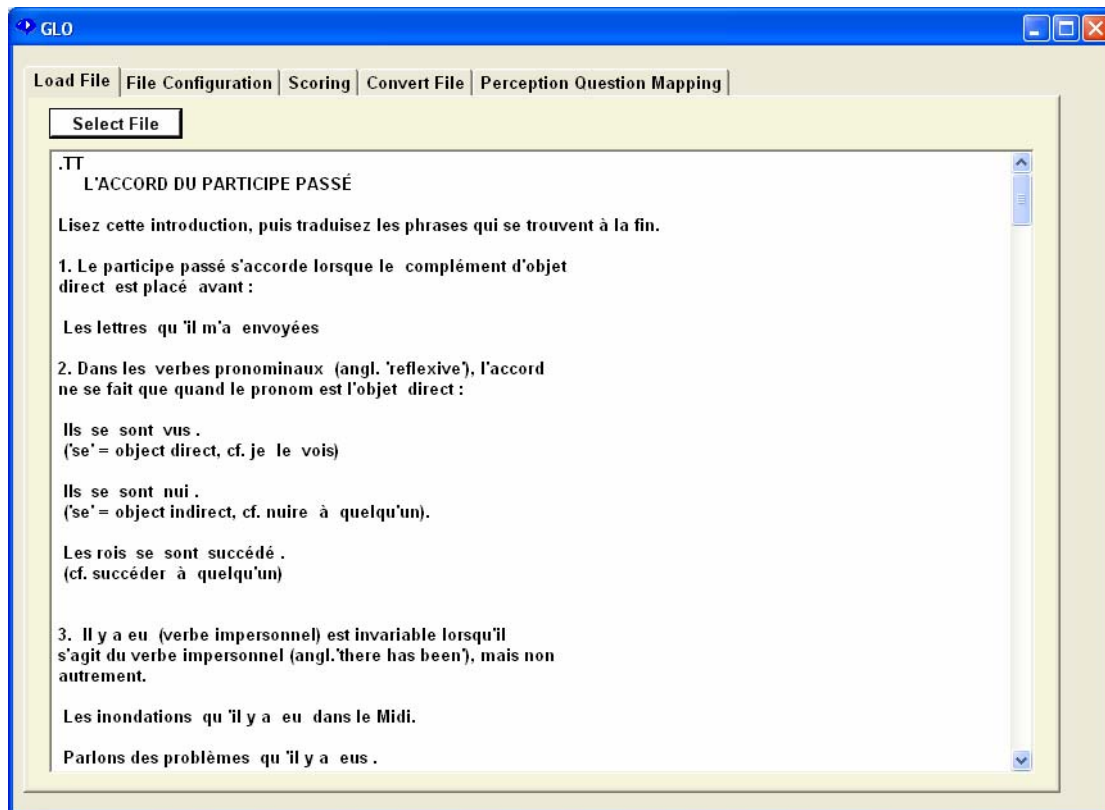
These files are then passed to the departmental computer officer or a member of the University's e-learning team who will create and schedule the Perception™ assessment.

As the student undertakes the assessment, Flash posts data back to the Perception™ database – the data that is returned is:

- The final answer the student gave - whether successfully answered or not
- The number of attempts made at the question
- The score achieved

- The possible maximum score that could have been achieved

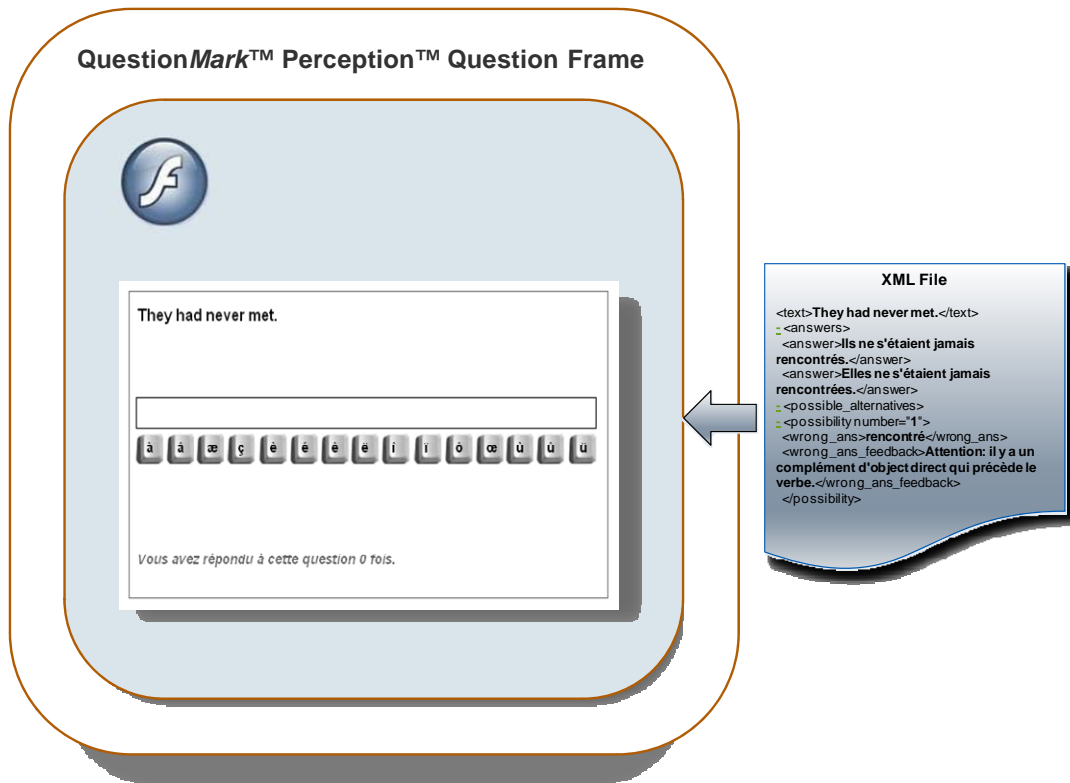
## GLO File Transformation Tool



**Figure 2 – GLO File Transformation Tool**

Within the GLO File Transformation Tool, the course tutor can choose to apply the following additional configuration details required:

- Whether punctuation and case sensitivity should be ignored when evaluating the given answer
- The number of allowed attempts on a question (to a maximum of three)
- The scores to apply for each attempt
- The language in which response/outcome messages should be displayed to students
- Whether scores should be visible to students or not.



**Figure 3 – Sample GLO question as displayed within Perception™**

## Results

This project was completed at the end of March and is due for full implementation at the beginning of the 2008/09 academic year. Unfortunately, a full and comprehensive test of GLO has not been possible to date as students are occupied with end of year exams and tutors with marking. A full test is planned before July 2008 and the results will be presented at the time of the CAA conference.

However, a limited trial took place at the beginning of May within the French department with some volunteer first year students.

The test was mainly to compare exercises as delivered using the old APICALE software in the Languages Micro Lab to those delivered using GLO/Perception. A main criterion of the new system was that existing assessment content was to be transferred to the new platform as cleanly as possible. This would enable the department 'to build upon what has gone before' (Levy, Michael 1997), utilising the 'capabilities of the latest technology' but not being driven by it.

Feedback from the participating students was generally positive. In particular, internet delivery enabling students to access the assessments from their chosen study location rather than the need to be physically present in the Micro Lab was very popular. It was felt that this would lead to greater participation in the weekly required CALL elements to the course.

The special character key buttons on screen was much more convenient and meant that their concentration was not broken by the need to look up the ALT key combinations they required.

Feedback from course tutors who are currently authoring new GLO exercises ready for the next term is inevitably mixed. Many are new to the authoring of CALL exercises in any format so using the syntax and 'tagging' required within the MSWord file, although fairly straightforward, will take some adjustment. Different departments within DELC prefer different question formats and so some find the range of what is offered using GLO limiting.

Feedback on the reporting of assessment results through QMP has so far been positive. The breadth and flexibility of the tabulated data tutors can access has met most individuals reporting needs.

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