

Initial Use of a Flexible Open Learner Model

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Abstract: This paper gives an overview of the Next-TELL open learner model and initial levels of student use of this competency-based open learner model. It is sufficiently flexible to allow use in different ways, taking data from a range of sources. Levels of use suggest that the approach would be taken up by students, if adopted by their teachers.

1. Introduction

Open learner models allow users to see visualisations of learners' knowledge, skills, competencies, etc., to help them understand a system's inferred model of them – traditionally as would be used by the system to personalise the interaction. There are various reasons for opening the learner model to the learner (and teachers, etc.), including facilitating metacognitive behaviours such as reflection, planning, self-regulation, and so on (Bull and Kay, 2013).

Our previous work suggests that teachers may be open to adopting an open learner model that can be used flexibly in the classroom according to their existing or desired teaching approaches, and which may include manual teacher and student self-assessment as well as automated data combined potentially from a wide range of sources (see Johnson et al., 2013). In this paper we present an indication of the features that students and teachers used in early introductions and deployments.

2. The Next-TELL Open Learner Model

The Next-TELL open learner model has a range of visualisations, as shown in Figure 1. These each represent information about a user's competence levels from slightly different perspectives using, for example, colour, skill meters, text size, area. This example shows competencies for facilitating meetings – commonly seen as an important 21st Century skill. As suggested above, accessing their learner model aims to provide a focus for student reflection. If students choose (optionally) to release their learner model to their peers, it may also promote collaboration or discussion.

Table 1 contains some basic statistics of the open learner model usage. During the 2012-13 academic year, the OLM had 338 users (303 students, 35 teachers). These figures include some 'test' accounts that were available to those working with end users to demonstrate the software. The 35 teachers worked with 426 different competencies and in total 3640 items of evidence were added to the learner model in the form of teacher assessments, student self-assessments, peer-assessments, and data from integrated software tools. This is supplemented with 389 text appraisals of student strength and 299 items of guidance that add supporting information that is collated alongside the learner model (but does not contribute to the modelling algorithm). The learner model was viewed on 2567 occasions, and additional items of guidance were viewed on 683 occasions. Teachers and students showed preferences for which learner model views they inspected. The most frequently used for both teachers and students/peers were skill meters (455 and 275 occasions) and the treemap (254 and 217 occasions). The least frequently used for teachers was the histogram (131 occasions) and smileys for students/peers (148 occasions).

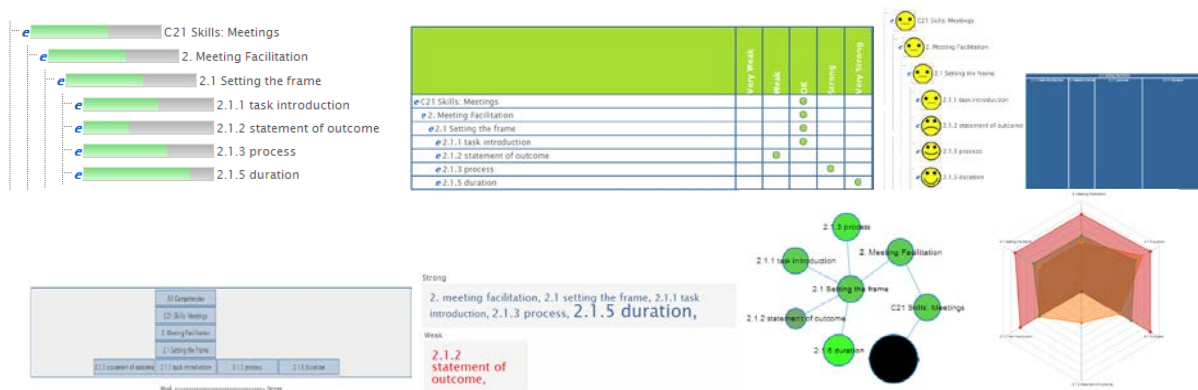


Figure 1: Next-TELL open learner model visualisations

Table 1: overview usage statistics for the open learner model (October 2012 - August 2013)

Statistic	Total	Teacher	Student	Peer	Automated
Student users	303	-	303	-	-
Teacher users	35	35	-	-	-
Log ins	1262	595	667	-	-
Competencies	426	-	-	-	-
Model evidence	3640	2126	632	104	1513
Strength appraisals	389	240	124	25	1
Guidance appraisals	299	196	74	29	0
OLM inspection	2567	1450	1117	56	-
OLM filter amended	6133	4149	1984	-	-
Evidence/guidance	683	578	105	-	-
OLM skill meter	730	455	259	16	-
OLM table	322	173	138	11	-
OLM smiley	148	-	133	15	-
OLM histogram	131	131	-	-	-
OLM word cloud	308	174	134	15	-
OLM treemap	471	254	217	-	-

3. Initial Use of the Next-TELL Open Learner Model

Johnson et al. (2013) gives examples of how teachers might take up their open learner model within their existing teaching practices. The above results suggest that students will use the open learner model when it is deployed on a voluntary basis. In the previous version of the open learner model, the last two visualisations in Figure 1 were not available. In forthcoming work we plan to track their use also. But from the above data in Table 1, it can be seen that of those visualisations that were deployed, both students and teachers did use the complete range – except for the two visualisations that were specific to one of the groups of users only. In addition, all types of information were received and consulted: self, teacher and peer assessments; evidence for model data; and information filtered from the model or seen fully. Thus we aim to explore use and flexibility of use in more detail in upcoming work.

Acknowledgements

This project is supported by the European Commission (EC) under the Information Society Technology priority of the 7th Framework Programme for R&D under contract no 258114 NEXT-TELL. This document does not represent the opinion of the EC and the EC is not responsible for any use that might be made of its content.

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