



## **TELE-SRL**

Tool to evaluate the potential of  
Technology Enhanced Learning Environments (TELEs)  
to Support Self-Regulated Learning (SRL)

Version 1.0

June 12, 2005

Universität zu Köln / Germany  
Vrije Universiteit Amsterdam / The Netherlands  
Universidade Católica Portuguesa / Portugal,  
Aalborg Universitet / Denmark  
CNR Istituto per le Tecnologie Didattiche / Italy  
Nottingham Trent University / U.K.  
Universitat de Barcelona / Spain  
Université de Technologie de Compiègne / France  
Universitetet i Bergen / Norway

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This tool was developed in the project "Self-regulated Learning in Technology Enhanced Learning Environments at University Level: a Peer Review" (TELEPEERS). The project is being carried out with the support of the European Commission (Grant agreement 2003-4710-/001-001 EDU-ELEARN). The content of this project does not necessarily reflect the position of the European Commission, nor does it involve any responsibility on the part of the European Commission.

## Introduction

The term “self-regulated learning” (SRL) refers to a set of cross-curricular skills which allow learners to make the most of their learning by being aware of and monitoring the cognitive, motivational, emotional, volitional and social aspects of their learning activities. According to the literature, different learning environments elicit, facilitate or even foster self-regulation skills to different degrees. Learning environments that support aspects of SRL are more likely to give rise to successful learning experiences.

The development of the TELE-SRL to evaluate the potential of Technology Enhanced Learning Environment (TELEs) to support Self-Regulated Learning was based on two basic assumptions. Our first assumption was that any learning episode may be subdivided into three phases: (1) a planning phase, (2) an execution and monitoring phase, and (3) an evaluation phase. Of course, this is a simple model, and we are aware that many learning episodes are more complex. For example, while executing a specific learning activity, a learner may run into problems and be forced to reconsider his original goals and the means of achieving these. He will therefore have to engage anew in planning activities before continuing with his learning.

It is also important to keep in mind that the planning activity does not only concern the preparation before starting to use the TELE, but also the day-to-day planning that normally occurs in any learning process. Equally, evaluation does not only refer to end-of-course evaluation, but also to the (self) evaluation work that students should constantly carry out during any learning experience.

Our second assumption was that self-regulated learning has four different aspects: (1) a cognitive, (2) a motivational, (3) an emotional, and (4) a social aspect. With this distinction, we wanted to emphasize our view that self-regulation of learning requires more than the self-regulation of cognitive activities. If a learner wants to achieve good results in a specific learning episode, he will have to react adequately when the learning task becomes very difficult and starts to reduce his motivation, induces stress and anxiety or isolates him from his peers or from other persons who might provide help.

Emotion and motivation are related, but they are actually distinct aspects and hence need to be analysed separately. Motivation is related to objectives that a student may have, while emotion is related to the non-rational reaction to events. In this tool we did not include the other aspect mentioned in the literature as relevant for SRL - volition - since this seems to be a more exclusively personal aspect, and not dependent on the use of a given TELE.

In the TELEPEERS project (<http://www.lmi.ub.es/telepeers>) we developed the Peer Review Evaluation Tool to evaluate the potential of a Technology Enhanced Learning Environment (TELE) for supporting self-regulated learning. A TELE may be any learning environment that makes use of ICT tools, along with other components, whose presence and form depend on the teaching methodology and learning situation at hand. A TELE may take the form of a complete course, including a technological platform as well as the setting prepared by the teacher. On the other hand, even a simple multimedia program, used by a student for self-instruction may be considered to be a TELE, and there are many possibilities between these two extremes.

The TELE-SRL is a tool for researchers and teachers. It helps in answering the question whether a specific TELE has some potential for supporting self-regulated learning by providing the evaluator with a structure that enables him to look at the TELE in more detailed and differentiated way. For teachers, the TELE-SRL may be a useful tool if they have to choose between different learning environments. Or if they are already working in a specific learning environment, the tool might help them detect details of the learning environment that could be changed in order to better facilitate self-regulation of the learning activities in their students.

It should be pointed out that the TELE-SRL helps to evaluate the *potential* of a specific learning environment for supporting self-regulated learner. It focuses on the *affordances* of that environment, on the stimulation that the environment offers. Whether a specific TELE does indeed support the self-regulation of learning is a question that the learner who works in that environment has to answer. We developed another tool – TELESTUDENTS-SRL – which can be used by the learner to evaluate if the learning environment in which he worked helped him with the self-regulation of his learning activities (available from the TACONET website <http://www.lmi.ub.es/taconet>).

The TELE-SRL was developed through an extensive bibliographical research on SRL as well as by widely testing it in the academic settings of the TELEPEERS project partners. As far as we know, it is currently the only available tool of its kind.

The TELE-SRL is a relatively simple tool and easy to use. It is divided into three parts:

- 1) Questions asking for general information on the TELE;
- 2) A set of 43 statements on relevant aspects of SRL. Since this tool has been developed for use with any kind of TELE, you may find that some statements are not applicable. In this case, it is sufficient to ignore these statements. For each statement, you are asked to indicate on a 5-point scale to which extent the aspect described in the statement in your opinion supports self-regulated learning.
- 3) Summarizing statements.

In the first part, general information on the TELE to be evaluated is to be filled in. Primarily, this information is used for research purposes to allow for a better understanding of the context in which the TELE was used and to facilitate comparison among TELES.

The second part is organized in several sections which correspond to the three phases of a learning episode, i.e. (1) planning phase, (2) execution and monitoring phase, and (3) evaluation phase. Each section in turn is subdivided into cognitive, emotional, motivational and social aspects of SRL. It is important while filling in the PRET to bear this in mind because some statements seem to be repeated. This is not the case, but a statement tapping for instance emotional aspects in the planning phase might look very similar to a statement referring to emotional aspects in the execution and monitoring phase.

The third part should be a summary of the responses given in the second section, keeping in mind the general impression developed while evaluating the TELE in part B. You may calculate numerical values by averaging your responses in part B across statements ( for instance, across all the statements referring to cognitive aspects in the planning phase). Alternatively, you could try to express your global impression using a numerical value. At the end, you are asked to name factors that contribute to the strength of the TELE as well as factors that represent weaknesses of the TELE and you are asked to make suggestions for improving the TELE.

It might seem difficult sometimes to evaluate a specific detail of the TELE on a 5-point scale since no point of reference is given. A good way to proceed is to try to figure out how an ideal environment of the same kind would behave; this would correspond to 5. This constitutes a suitable reference point to evaluate the TELE at hand.

Statements which might be interpreted in different ways are preceded by comments (in boxes) in order to make these statements less ambiguous. We suggest, analogously, that you add your comments after each statement, explaining the reason for your response. This will help us to revise the PRET. If several evaluators evaluate the same TELE, this procedure might also help to reach a consensus on the potential of the specific TELE for supporting self-regulated learning.

Research on the TELE-SRL will be continued in the TELEPEERS project (until the end of 2005) and in a Targeted Cooperative Network on Technology Enhanced Learning Environments that support Self-Regulated Learning (TACONET). You are invited to join the network (see <http://www.lmi.ub.es/taconet>).

We are working on an online version of the TELE-SRL which will be available on the TACONET web site.

We are also interested in you experiences with the TELE-SRL and would like to ask you to share them with us and other members of TACONET by sending your story to the story corner of the TACONET web site.

## Part A: Description of TELE

<b>Name and short description of TELE</b>	<i>(please describe shortly what you consider part of this TELE, i.e. software used, configuration, use made of it, agents involved, etc).</i>
<b>Institution where it is in use</b>	
<b>Objective of TELE</b>	
<b>Educational model</b>	
<b>Mode of delivery</b>	
<b>Places of learning</b>	
<b>Context</b>	
<b>Level of interactivity</b>	<i>(please mark with <b>X</b> the appropriate item)</i> No interactivity Interactivity with TELE Interactivity with tutor Interactivity with peers
<b>Technological component</b>	<i>(please mark with <b>X</b> the appropriate item)</i> Commercial In house built Open source
<b>Technical requirements for technological component</b>	Operating system (server/client) Hard disk space required Display resolution, colour depth Hard ware components (working memory, processor, sound card, graphics card) External devices Connectivity (e.g. type of browser, band width)
<b>Importance of technology for TELE</b>	<i>(please mark with <b>X</b> the appropriate level)</i>  Low importance    0   1   2   3   4   5   High importance
<b>Accompanying documentation</b>	<i>(please mark with <b>X</b> the appropriate item)</i> User's handbook (printed or in electronic form) for teachers User's handbook (printed or in electronic form) for students Tutorial Guidelines Help function

<b>Transferability (Portability)</b>	Costs  Language  Legal aspects  Technical aspects (see technical requirements)  Limitations in using TELE
<b>Name and institution of person who filled in the PRET</b>	<i>( Please write your name or initials, and a short sentence which characterizes you, e.g. "High-school Teacher in mathematics, Italy")</i>

## Part B: Detailed evaluation of support for self-regulated learning

### (1) Planning

#### Cognitive aspects

- 1 This question refers to the possibility for the student to easily get an overall idea of the content of the course.  
*The TELE helps the learner to structure the learning content.*  
 Not supported 0 1 2 3 4 5 well supported
- 2 *The TELE has an easy and intuitive interface.*  
 Not supported 0 1 2 3 4 5 well supported
- 3 A history shows information such as who has created or edited a file, who has read it, etc.  
*The TELE records a history of learner activities.*  
 Not supported 0 1 2 3 4 5 well supported
- 4 *The TELE allows the student to plan her/his learning with the help of activity plans, personal development plans, progress reports etc.*  
 Not supported 0 1 2 3 4 5 well supported
- 5 For example, a course might have some optional topics, or a program for individual learning might allow the student to choose freely the modules he/she wants to study.  
*The TELE provides the student with the opportunity to choose between different modules.*  
 Not supported 0 1 2 3 4 5 well supported
- 6 This refers to the possibility to tackle topics in different ways; it does not refer to different contents, which is the case with the previous question.  
*The TELE provides the student with the opportunity to choose between different learning paths.*  
 Not supported 0 1 2 3 4 5 well supported
- 7 This refers to the format (written text, voice, video, picture, static or animated) of the learning material, but also to online or mixed modality (if the TELE analysed is a whole course).  
*The TELE provides the student with the opportunity to choose between different modes of delivery.*  
 Not supported 0 1 2 3 4 5 well supported

#### Motivational aspects

- 8 Base your judgment on your teaching/learning experience  
*The TELE is likely to arouse the learner's interest.*  
 Not supported 0 1 2 3 4 5 well supported
- 9 For instance, a communication platform may allow the user to change the organization of the home page or of mailboxes.  
*The TELE allows each student to partially personalize the interface used in the environment.*  
 Not supported 0 1 2 3 4 5 well supported

- 10 Not being aware of personal goals can lead to misconceptions on abilities to develop, and thus to failure and decreasing motivation. This can be avoided if the TELE makes the relationship between activities and abilities clear.  
*The TELE eases the student's becoming aware of personal learning goals.*  
 Not supported 0 1 2 3 4 5 well supported
- 11 *The TELE helps the learner plan her/his activities by pointing out to her/him external resources (websites, help options) available.*  
 Not supported 0 1 2 3 4 5 well supported
- 12 For instance, by giving links to the topics which are relevant to tackle the task at hand.  
*The TELE reminds the learner of her/his own knowledge and skills relevant to the task at hand.*  
 Not supported 0 1 2 3 4 5 well supported
- 13 For instance, by giving clues or examples on demand, without giving solutions right away.  
*The TELE sensitises the learner with respect to how problems might be solved.*  
 Not supported 0 1 2 3 4 5 well supported
- 14 For instance, flags marking unread documents are explicit mechanisms.  
*There are explicit mechanisms in the TELE to encourage the learner to tackle tasks.*  
 Not supported 0 1 2 3 4 5 well supported
- 15 For instance, a calendar with deadlines is an implicit mechanism  
*There are implicit mechanisms in the TELE to encourage the learner to tackle tasks.*  
 Not supported 0 1 2 3 4 5 well supported

### Emotional aspects

- 16 For instance, giving information on the difficulty of a given task and encouraging learners to subdivide it into subtasks  
*The TELE helps the learner to cope with the challenges of the task.*  
 Not supported 0 1 2 3 4 5 well supported
- 17 For instance, the TELE may help the user to move to a level more suited to the user's competence  
*The TELE may be adapted to reach a congruence between the learner's level of competence and the level of difficulty of the task.*  
 Not supported 0 1 2 3 4 5 well supported
- 18 Judge by using your teaching / learning experience  
*The TELE is organised in such a way that the learner is likely to enjoy working in it.*  
 Not supported 0 1 2 3 4 5 well supported

### Social aspects

- 19 *The TELE offers the possibility to set up both public and private communication.*  
 Not supported 0 1 2 3 4 5 well supported

- 20 *The TELE provides the learner with the opportunity to negotiate with her/his tutor/instructor how to organise her/his work.*  
Not supported 0 1 2 3 4 5 well supported
- 21 *The TELE allows the learner to work together / communicate with her/his peers.*  
Not supported 0 1 2 3 4 5 well supported

## (2) Executing and monitoring

### Cognitive aspects

- 22 

For instance, by skipping a section, choosing among different options, etc.
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*The TELE allows the user to make decisions on how to proceed.*  
Not supported 0 1 2 3 4 5 well supported
- 23 

For instance, by giving examples with which to compare her/his work
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*The TELE leads the learner to reflect on her/his own problem solving activities.*  
Not supported 0 1 2 3 4 5 well supported
- 24 

For instance, by providing texts or activities for quantitative self-monitoring
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*The TELE provides the user with the possibility to find out to what extent she/he is achieving her/his learning goals.*  
Not supported 0 1 2 3 4 5 well supported
- 25 

For instance, by allowing students to alternate theoretical and practical work.
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*The TELE allows the learner to switch to another learning strategy if necessary.*  
Not supported 0 1 2 3 4 5 well supported

### Motivational aspects

- 26 

For instance, the TELE might point out the importance and interest of each new task tackled.
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*The TELE helps the learner to maintain her/his motivation.*  
Not supported 0 1 2 3 4 5 well supported
- 27 

For instance, the TELE may point out the possibility to do some different activities related to the fields where failure has occurred.
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*The TELE provides help facilities that aim at strengthening the learner's perseverance in case of failure.*  
Not supported 0 1 2 3 4 5 well supported

### Emotional aspects

- 28 

For instance, the feedback could indicate the importance of the work done in the framework of the learning task at hand.
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*The TELE provides the user with formative feedback that facilitates the maintenance of a positive working attitude.*  
Not supported 0 1 2 3 4 5 well supported

For instance, the feedback could point out the intrinsic difficulty of some point and indicate possibilities of how to cope with it.

- 29 *The TELE provides the user with formative feedback that intervenes at critical points in the learning cycle in order to restore a positive working attitude.*  
Not supported 0 1 2 3 4 5 well supported

### Social aspects

- 30 *The TELE allows the user to contact and receive help from her/his tutor/instructor.*  
Not supported 0 1 2 3 4 5 well supported
- 31 *The TELE provides the user with the opportunity to communicate with her/his peers in order to exchange ideas or to ask for help.*  
Not supported 0 1 2 3 4 5 well supported
- 32 *The TELE provides the user with possibilities to collaborate with her/his peers.*  
Not supported 0 1 2 3 4 5 well supported

## (3) Evaluation

### Cognitive aspects

- 33 *The TELE helps the user to reflect on her/his learning progress.*  
Not supported 0 1 2 3 4 5 well supported

For instance, giving examples of good practice .

- 34 *The TELE encourages the learner to compare her/his present state with the state she/he wanted to be in.*  
Not supported 0 1 2 3 4 5 well supported

For instance, providing self-assessment activities.

- 35 *The TELE provides the learner with the means to assess her/his own achievements.*  
Not supported 0 1 2 3 4 5 well supported

This question refers to the level of knowledge a student wants to assess, e.g., in a language course one might wish to check what level of certificate she/he would pass.

- 36 *The TELE allows the student to select the achievements to be assessed.*  
Not supported 0 1 2 3 4 5 well supported

This question refers to the single competencies, e.g., in a language course one might want to test only his /her knowledge on grammar or on vocabulary, etc.

- 37 *The TELE allows the student to select the competencies to be assessed.*  
Not supported 0 1 2 3 4 5 well supported

### Motivational aspects

The feedback given does not lead the student to think that she/he knows more or less than she/he really does.

- 38 *The TELE provides the learner with feed-back that leads to appropriate self-efficacy beliefs.*  
Not supported 0 1 2 3 4 5 well supported

**Emotional aspects**

The feedback could put the achievements in context with the amount of work done, and, if the case, point out the need to change something in the learning method.
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- 39 *The TELE provides the learner with appropriate feedback on her/his achievements and on the amount of work done.*  
Not supported 0 1 2 3 4 5 well supported

**Social aspects**

- 40 *The TELE provides the learner with the opportunity to compare her/his results with that of a tutor/instructor*  
Not supported 0 1 2 3 4 5 well supported
- 41 *The TELE allows the learner to discuss her/his results with her/his tutor/instructor*  
Not supported 0 1 2 3 4 5 well supported
- 42 *The TELE provides the learner with the opportunity to compare her/his results with those of her/his peers.*  
Not supported 0 1 2 3 4 5 well supported
- 43 *The TELE allows the learner to discuss his/her results with her/his peers.*  
Not supported 0 1 2 3 4 5 well supported

**Part C: Summary evaluation of support for self-regulated learning**

General impressions on the TELE obtained from compilation of part B

**Part C:** Global evaluation of support for self-regulated learning

**Evaluation of support of self-regulated learning**

**(1) Planning**

*Cognitive aspects*

Not supported 0 1 2 3 4 5 well supported

*Motivational aspects*

Not supported 0 1 2 3 4 5 well supported

*Emotional aspects*

Not supported 0 1 2 3 4 5 well supported

*Social aspects*

Not supported 0 1 2 3 4 5 well supported

**(2) Execution and monitoring**

*Cognitive aspects*

Not supported 0 1 2 3 4 5 well supported

*Motivational aspects*

Not supported 0 1 2 3 4 5 well supported

*Emotional aspects*

Not supported 0 1 2 3 4 5 well supported

*Social aspects*

Not supported 0 1 2 3 4 5 well supported

**(3) Evaluation**

*Cognitive aspects*

Not supported 0 1 2 3 4 5 well supported

*Motivational aspects*

Not supported 0 1 2 3 4 5 well supported

*Emotional aspects*

Not supported 0 1 2 3 4 5 well supported

*Social aspects*

Not supported 0 1 2 3 4 5 well supported

**Thematic summaries:**

<b>Planning</b>	poorly supported 0 1 2 3 4 5 well supported
<b>Execution and monitoring</b>	poorly supported 0 1 2 3 4 5 well supported
<b>Evaluation</b>	poorly supported 0 1 2 3 4 5 well supported
<b>Cognitive aspects</b>	Not supported 0 1 2 3 4 5 well supported
<b>Motivational aspects</b>	Not supported 0 1 2 3 4 5 well supported
<b>Emotional aspects</b>	Not supported 0 1 2 3 4 5 well supported
<b>Social aspects</b>	Not supported 0 1 2 3 4 5 well supported

<b>Overall evaluation of support for SRL</b>	Low support	0	1	2	3	4	5	High support
<b>Evaluation of explicitness</b>	Support implicit	0	1	2	3	4	5	Support explicit

<b>Factors that contribute to the strength of the TELE</b>
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<b>Factors that represent weaknesses of the TELE</b>
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<b>Suggestions for improving the TELE</b>
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