



DXII.1

SCY Demonstrator

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Science Created by You (SCY)

(Project number IST-212814)

Date: 30-10-2011

Dissemination level:

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Executive summary

This document is a description of the SCY-demonstrator, also known as the mini mission. In order to demonstrate the achievements of SCY, an SCY-mission is created in which users learn more about the effectiveness of energy drinks. The title is Run For Your Life! The SCY-demonstrator is open for the public. The SCY-demonstrator can be used as a first acquaintance with SCY, just out of general interest of a user, but also for training purposes of students and teachers. A representative collection of SCY-features are part of the SCY-demonstrator. Users can leave comments on the SCY-website.

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1 Introduction

SCY has created four extensive missions in which all the achievements of the project come together and which are being used to test the different goals of the project. In 4 large projects taking 8 hours or more, students learn about sustainability, health, ecosystems or forensic DNA research.

From the start of the project it was clear a much shorter mission was needed to demonstrate all the achievements to a wider audience and give people insight in the ideas behind SCY. Therefore, in the last project year, it was planned to develop a SCY-Demonstrator that is open for the public. This report describes the development of the SCY-Demonstrator and briefly summarizes the content.

2 Developing the SCY-Demonstrator

2.1 Starting points

The initial starting points for the SCY-Demonstrator were described in the Description of Work of the SCY-project. The SCY-demonstrator was described as follows:

In order to demonstrate the achievements of SCY, an open SCY-mission will be created based on one of the missions created in WP VIII that is open for the public. Requirements to this demonstrator are:

- Open access to all material
- Web-based access to the learner control centre.
- A domain that is well known, no specialist knowledge required
- Short time span – major ideas must be conveyed in less than an hour.

These requirements mean that the mission that makes up the demonstrator is considerably smaller than a typical SCY-mission. Nevertheless, it will be possible to create a demonstrator that displays the major SCY features.

The web presentation of the demonstrator will contain embedded evaluation in the form of feedback forms. These forms will be used both for formative and summative purposes.

These requirements were followed with a small exception. We didn't base the SCY-Demonstrator on one of the missions. It was generally agreed that the different missions were too specialised and integrated that it would be difficult to develop a suitable SCY-demonstrator. We therefore selected a topic that in our view suited the requirements better (see section 2.2).

2.1.1 Connection with WPXI: Training

In Workpackage XI, which is the workpackage about teacher training material, there was a need for a short mission for training purposes. We saw this as a great opportunity to connect WPXI and WPXII, since the SCY-Demonstrator could serve such a role; it is short and suitable for demonstrating the SCY achievements, but also to introduce teachers (and students) to the SCY principles and material, before an actual mission is started. Given that we decided to use the

SCY-Demonstrator in both Workpackage XI and XII, we brought people from both workpackages to discuss issues concerning the structure and content of the SCY-Demonstrator. WPXI has implemented the SCY-Demonstrator in teacher training workshops.

2.2 The topic

The SCY-Demonstrator has as a title: Run For Your Life! In this mini-mission students (and others) learn more about the effects of energy drinks. The challenge is as follows:

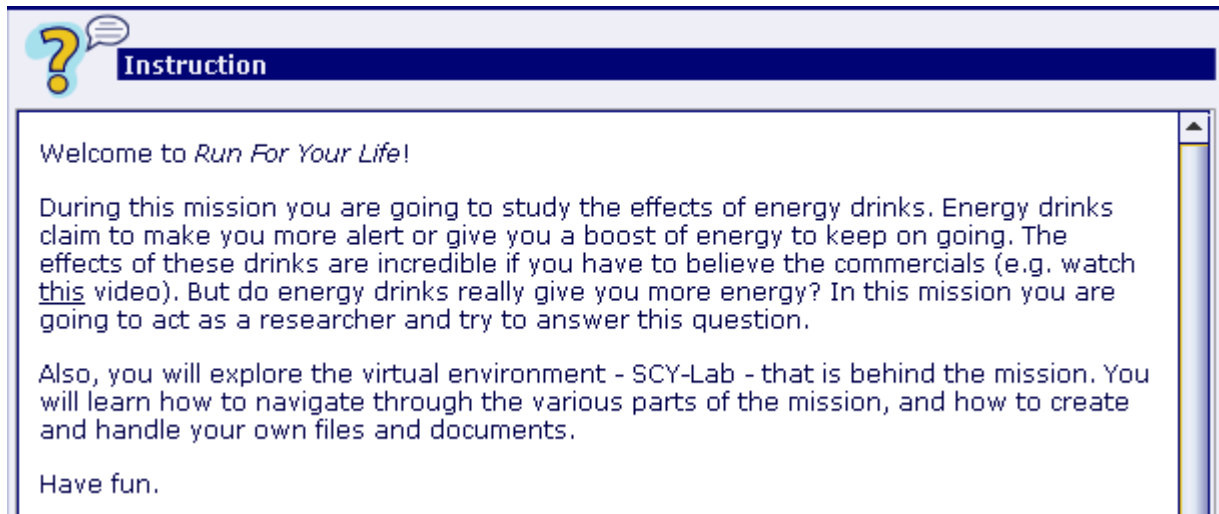


Figure 1: The challenge of Run For Your Life!

2.2.1 Learning Goals

Run For Your Life! gives insight in some basic biology, but no prior knowledge is needed. It is aimed at ages 14 and up. This mini-mission has the following learning goals:

Content:

Students learn about:

- which types of food contain glucose
- what carbohydrates and glucose do in your body
- how glucose is taken up in the body
- the effects of glucose intake on the concentration of glucose in the blood
- the difference of the concentration of glucose in your blood with or without exercise

Skills:

Students learn:

- how to formulate a hypothesis based on information they have learned before
- how to describe their simulations
- how to outline the main findings of their research
- how to present their work

2.3 Scenario

To display the major SCY features in a short time span we have used a simple, linear scenario with only 4 LASs and a limited number of ELOs. An attractive topic, combined with a simple scenario is in our view the best way to demonstrate the achievements and make the SCY-Demonstrator usable for training purposes.

An overview of the scenario is as follows:

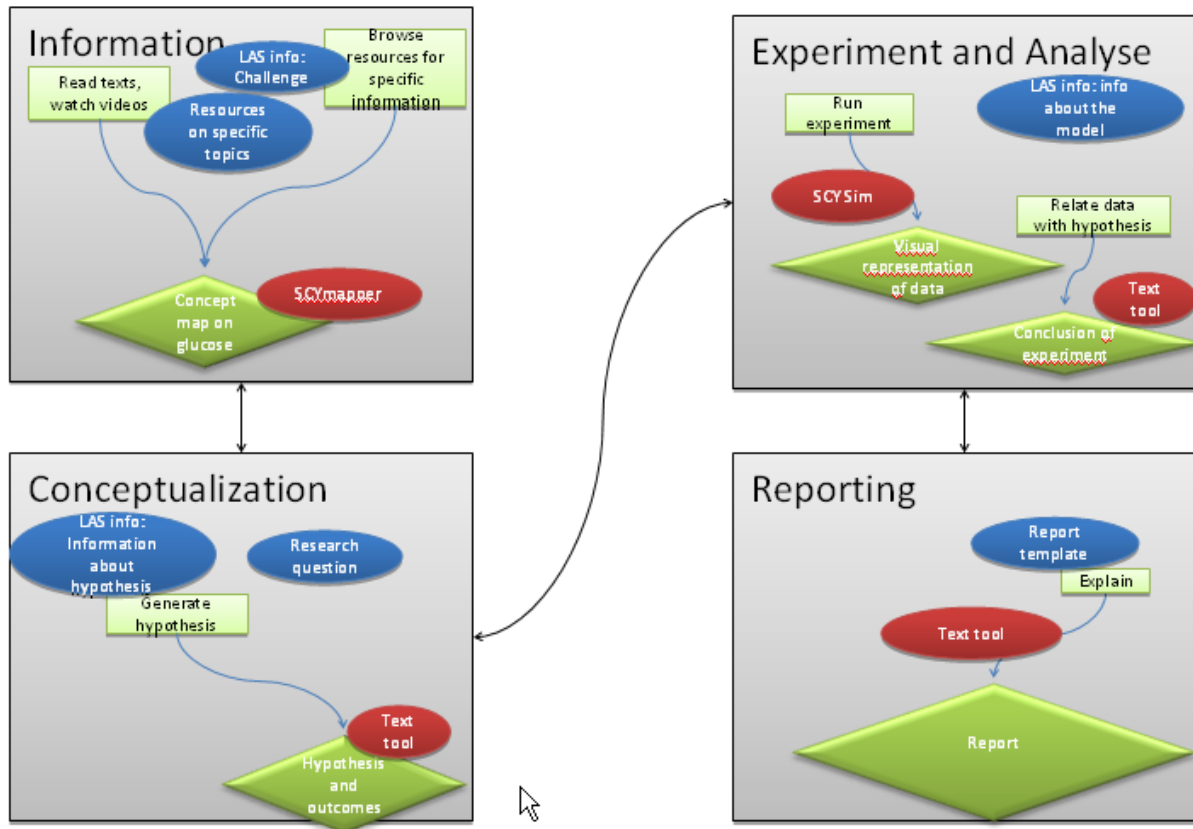


Figure 2: The scenario of Run For Your Life!

In Run For Your Life! students work through 4 LASs: Information, Conceptualization, Experiment and Analyse, and Reporting. In the first LAS: Information, learners make a concept map on glucose with the SCYmapper. To do this they read texts and watch videos on the role of glucose in the human body. In the second LAS: Conceptualization, learners formulate a hypothesis for two closely related research questions using the concept map on glucose. The research questions are: 1. what are the effects of glucose ingestion on blood glucose concentration and 2. what are the effects of exercise on blood glucose concentration. In the third LAS: Experiment and Analyse, learners test their hypothesis using a virtual model in SCYSim of the effects of glucose intake on the blood glucose concentration (with or without exercise). After the simulations they use the data to answer their research questions. In the fourth and last LAS: Reporting, learners explain their findings and present their work in a report.

2.4 SCY features

One of the main goals of the SCY-Demonstrator is to display the major SCY features. And for the largest part all SCY features are part of the SCY-Demonstrator. On the SCY homepage (<http://www.scy-net.eu>) SCY-lab is described:

SCY-Lab is the learning environment in which learners work on SCY missions. Learners move through SCY by moving through a mission map which presents them with an overview of all the main learning objects (ELOs) that they must produce. To produce these ELOs learners use dedicated tools (such as a concept mapper to make concept maps). Learners can share ELOs and collaborate in the creation process. To get information on what they can do they have access to resources that are specifically created for them or are publicly available via websites. When learners work in SCY-Lab, agents watch their work and can support learners when necessary. Learner may ask their peers for feedback on their ELOs and can assess other learners' ELOs. All ELOs produced and the final assignment can be saved in a portfolio for grading by the teacher.

The features described in the text are embedded in the SCY-Demonstrator. Of course, ELOs are being produced with the help of dedicated tools (such as SCYMapper and SCYDynamics). Learners have access to resources and SCY-Lab agents can support learners when necessary.

Other features like feedback and assessment are possible, but left to the discretion of the user (e.g. a teacher). We can imagine that the SCY-Demonstrator will be mainly used by people who want to see what SCY-Lab is all about or to get a feel for it. They will probably work individually without a need for feedback or assessment.

This also applies for collaboration. Like feedback and assessment, collaboration is possible in the SCY-Demonstrator, but we have developed the assignments to be carried out by individual learners. In Run For Your Life! there is no group formation. As explained before, learners will mostly work individually and such group formation will be superfluous and perhaps even confusing.

2.5 Web-based evaluation of the SCY-Demonstrator

Whatever the purpose is for using the SCY-demonstrator, it will most likely be the first actual encounter of the user with SCY-lab and the SCY-philosophy. We are of course very interested in the experiences and opinions of these first time users. We therefore want to give people the opportunity to comment upon the SCY-demonstrator.

On the SCY website together with access to the SCY-demonstrator we open up a forum with two dedicated threads. The categories of the threads are as follows, including the message to the user of the SCY-demonstrator:

1. Content:
 - a. If you have a question or want to leave a comment concerning the content of Run For Your Life! you can do that here. With content we mean the domain and the assignments of this mini mission.

2. SCY-lab

- a. If you have a question or want to leave a comment concerning SCY-lab you can do that [here](#). With comments on SCY-lab we mean the features of this mini mission and other missions, like tools, agents, collaboration, assessment, etc.

Questions and comments will be reacted upon by the webmaster within the same forum thread. Next to that comments will be collected regularly to analyse if any of the comments deserve further action.