blueSTAR - Final Report

1 Planned activities

BlueSTAR is a preliminary feasibility study aimed at developing and evaluating an online story platform prototype and its didactic concept for supporting primary school teachers in teaching environmental education (water education in particular). To this end, we have planned the following activities:

*Investigating the state of the art* for the topics (digital) storytelling in education, water education, interactive teaching platforms and gaming.

*Designing a narrative concept* for teaching water sustainability in primary schools.

*Identifying requirements for the online story platform:* What may be useful and practicable for teachers and pupils? Which functions should the platform provide? Which risks and potentials do we have to take into consideration (i.e. safety and privacy issues)?

*Developing a paper prototype* of the story platform and evaluating its usability: Do potential users find their way on the platform? Does the platform offer all important functionalities? What is missing from the user's perspective? Etc.

*Preparing a project submission:* identifying potential funds, contact potential partners in industry, building a project team etc.

2 Resources

a) Manpower
   - **FFHS** (lead)
     - Nicole Bittel, Team eCollaboration (IFEI) – 11.5 WD
   - **SUPSI**
     - Andrea Rizzoli, IDSIA – 7.5WD
     - Luca Botturi, DFA – 8.5WD
     - Vanessa de Luca, LCV – 7.5WD

b) Start/End of activities
   - State of the Art investigations: December 2014 – February 2015
   - Design of didactic concept and platform requirements: March 2015 – June 2015
   - Prototype development: May 2015 - August 2015
   - Prototype evaluation & user tests: September 2015 – October 2015
   - Preparing project application: November 2015 – December 2015

c) Grant FFHS fund
   Requested fund: CHF 18'800, IDSIA: 6'000 CHF; DFA: CHF 6'800 CHF; LCV: 6'000 CHF

3 Deviations

The project team could realize the feasibility study as planned. We could achieve all milestones and there were no bigger deviations. However, with respect to the needs and expectations of future industrial project partners as well as the strategic focuses of the educational project team (SUPSI, FFHS), the research subject may be adapted for the final application. Currently, we plan to develop an online story platform not only for primary

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1 Estimated working days.
schools (as in this feasibility study) but also for higher education in order to foster (virtual) collaboration.

4 Results

Throughout this study, we’ve carried out the following main outcomes:

State of the art reports. We investigated the state of the art. Hence, a report about each of the below mentioned topics is available:
- gaming for sustainability
- digital storytelling
- technologies for supporting storytelling
- methods for teaching sustainability
- story sharing platforms

Further, we composed a final document, summarizing the key points of each report.

Designing a narrative concept for teaching environmental education in primary schools. The concept presents two narrative approaches, blending storytelling with water education. They can be understood as complementary:

1. Storytelling as a reporting in discovery-learning: stories help pupils to reflect what they have learnt during experiments, excursions etc. To this end, two rivaling characters (good – bad, smart – dumb, knowing – not knowing etc.) stand at the beginning of the story. Pupils complete the story by showing these characters “in action”.

2. Storytelling as discovery-learning framework: here, all significant elements of a scientific topic are framed into a story. Teacher and pupils collaboratively create a story on the scientific topic by defining a challenge, protagonists, the story process, closure etc.

For both approaches exchange in terms of dialogue among teachers and pupils is fundamental. Besides, the possibility to integrate multimedia in the story creation process allows new and additional layers of learning and meaning. Thus, we wanted to develop an online platform that supports the process of interactively creating stories and blends digital and physical resources (see next section). Finally, we produced user guidelines, helping teachers to apply these narrative approaches and the platform in class.

Identifying requirements for the online story platform. Based on the didactic approaches, we identified some basic platform functionalities. These include e.g.: simplicity, flexibility & interactivity (functions to arrange, down- and upload and share content).

Developing a paper prototype of the story platform, including the following sections:
- homepage: entry page (see fig. 1)
- explore stories: already existing stories can be browsed, read and filtered
- create a new story by using a drawing tool, templates or the upload function
- sign in: two separated areas for teachers and pupils to log into the platform
- my stories: section for registered users only. Here, a new story can be created and already existing stories and story-related activities can be managed.
- read a story: similar to PowerPoint, the completed story can be shown in a slide show mode (see fig. 2).
By developing the platform, we gave high priority to privacy issues of pupils. For instance: to access the platform kids only need a class code. With other words, there is no individual registration required for pupils.

Running first user tests. Finally, we could run first user tests with primary school teachers. We demonstrated the platform prototype to them. They gave their critical feedback.
considering usability, comprehensibility, practicability etc., which has been integrated into the final version of the paper prototype document.

*Preparing project submission.* In the last step of this study, we started to identify and evaluate various research funding possibilities. Furthermore, we contacted potential partners in industry who might be interested in a collaboration. Based on these investigations, we decided to submit a project proposal to CTI. Right now, we are in contact with Samsung Switzerland, which might be interested in becoming an industrial partner. IDSIA, DFA, LCV (SUPSI) & IFeL (FFHS) will complete the project team.

5 **Next Steps**

We will clarify the possibilities of a collaboration with Samsung Switzerland. Based on that, we will adapt the thematic focus of the application to match the expectations of the industrial partner, the educational project team as well as the CTI funding requirements. We plan the project submission for 2016.

Brig, 10.02.2016
Nicole Bittel, Team eCollaboration (IFeL)

6 **Further documents**

A selection of project related documents (such as state of the art reports, paper prototype of the platform, didactic concept etc.) is accessible on SwitchDrive here: [http://tinyurl.com/bluestarfondo](http://tinyurl.com/bluestarfondo)