

# eifl

knowledge without boundaries

## *'Play to Study'*

---

Utena A. and M. Miskiniai Public Library

Lithuania

March 2011



*This case study is based on information provided by the Utena A. and M. Miskiniai Public Library in March 2011. EIFL-PLIP has edited the study for the replication process.*

## SUMMARY

### INNOVATIVE IDEA

Librarians were concerned about the numbers of children who were not attending school, especially those who preferred to come to the library to play computer games. They decided to use technology to create a computer game that would encourage the children to reconnect with the school system.

### THE PROJECT

A significant number of children in Utena district do not go to school, but are willing to come to the library. Children who do not attend school are at risk of getting involved in drugs and crime. Working with teachers and school authorities, the library has created a computer game that reconnects children with the school system.

### KEY ACHIEVEMENTS

- Successful creation of the learning game, and testing the game with children.
- Attracting children – 983 children and youth are playing the game. The game has attracted children who do not attend school as well as children who are at school, but who want to improve their grades.
- Winning the confidence of school teachers. This was essential, because teachers had to believe in the value of the game as a learning tool and be willing to include points earned through the game in the children's formal school assessment.
- Motivating 13 schools to take part, and 13 teachers to volunteer to administer the game.
- Attracting the attention of the local and national education authorities – including the Ministry of Education – who are also interested in the game.



## CASE STUDY – ‘PLAY TO STUDY’

### INTRODUCTION

There are 47,611 inhabitants in Utena District, which is in northeastern Lithuania. The district is served by a public library that has 25 branches in towns and villages. The new building of the main library was opened in 2008. The number of visitors, including children, is growing. They are attracted by the bright, comfortable atmosphere, modern technology and free services.

There are 6,368 pupils learning in 17 schools in Utena District. However, not all pupils succeed, and failure is one of the main reasons why children do not attend school. Other reasons for non-attendance are problems at home when parents do not take care of their children; learning content is not interesting, and some children have behavior problems. Children who are not at school are at risk of addiction to drugs or alcohol, and may become involved in crime.

Internet and computers are becoming popular with children, and in Utena’s libraries the number of children using computers is increasing rapidly. Their interest is positive, but librarians are concerned that many children play computer games in the library during their school time and may tell lies when asked about going to lessons. Penalties and prohibitions were tried, but were not effective. The librarians came to the conclusion that combined action by schools and libraries was necessary.

### PROJECT DESCRIPTION

The aim of the project is to use technology to enable children to study better and to prevent school non-attendance. This involves engaging problematic children in activities that motivate them to learn, to seek approval, to appreciate school and to attend classes. It involves changing attitudes to the importance of libraries in formal education processes, and the cooperation of schools.

The main objective of the project is to create a learning game that can be played on computer so that children can develop knowledge and skills related to their school programme, and by playing the game, earn points towards their formal school assessment.

People involved include children who avoid school; teachers; staff of educational institutions who are involved in child problem prevention programmes; librarians, and parents who are responsible for their children’s behaviour

### ACHIEVEMENTS AND RESULTS

- The tasks of the game are associated with the school programme for 5th-7th grades. Levels in the game correspond to school grades. There are five subject games: mathematics, Lithuanian language, history, nature sciences and practical knowledge. English language is integrated into the other subjects. In each level of the game, children can play a tournament which combines all subjects.
- The game involves speed and competition. Children can compare results and points earned with other players. This motivates children to put more effort into the game.

- The content of the game is dynamic. Some tasks are always changing, and this makes children curious. Other tasks repeat and help the children to memorize.
- We have created a wide range of tasks (1,900 tasks) so that children will not become bored.
- We have integrated special elements that encourage children to go to school and communicate with teachers. Children can only find solutions and complete some tasks with help from teachers.
- The points gained while playing the game are added to the official mark in school. To realize this, we have created a playful method of communication between teachers and children. Children are given stickers for the points they earn and paste them into to special 'day books'. The children show the day books to teachers as proof of achieved results.

*'I learnt many important things in biology, and my knowledge in Lithuanian language got a bit better. It was great to check my knowledge. This game helps me to remember easier! It helped to improve my results in the trimester – we play to study!'*

- Tautvydas, 6<sup>th</sup> grade.

Thirteen schools are taking part in the project and have developed ways of integrating the game's results into the school evaluation system. At each school a volunteer game coordinator (a teacher) is administering the players through a remote administration process. The coordinator communicates with the children and acts as an intermediary between the children and subject teachers.

## IMPLEMENTATION ISSUES AND CHALLENGES

Before implementation began, it was difficult know what the game would finally be. We developed the game through consultation with teachers, psychologists and education experts and discussion during the implementation phase. We found that:

- We needed to create more tasks than originally planned so that children would not get bored playing the game. We decided to create more tasks and to install them at different stages.
- We changed the structure of the game after taking the advice of training experts and psychologists. The advice was to arrange tasks in a non-traditional way, as subject games, level games and tournaments, to make the game more challenging. We integrated English-language tasks into other subject games, because teachers' experience has shown that children with learning problems assimilate foreign languages more easily in association with other subjects and practical tasks. To link the learning to real life, we added an extra subject for practical application of learning.

## STRATEGIES, TACTICS AND TOOLS

**Efficient relationships with all partners were essential** – especially with the Utena Education Centre, which is responsible for implementation of innovations into schools and improvement of teachers' qualifications. When implementing an innovation that involves teachers, it is important to have support from an institution which they trust. Utena Education Centre helped explain the game to the teachers, and without their support, implementation would have been complicated or even impossible. For us to succeed, teachers had to be convinced of the benefits of the innovation.

**Teamwork** – librarians, educators, psychologists, social workers and programmers all worked together. By combining knowledge and expertise, we were able to create a game that would be educational, that would motivate children and that would help solve behavior problems.

**Initiative of teachers and their voluntary work** – 13 schools in towns and villages are taking part. In each school, teachers are volunteering to act as coordinators.

**Flexibility of the game** – the tasks of the game can be renewed, changed or deleted at any time. In addition, there is a remote administration system which helps teachers to follow children's participation in the game.

## KEY BENEFITS

Our intended target group was children who were not successful learners, who had behaviour problems and who were not attending school. In district schools there are about 1,590 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> grade pupils, and only some of them are problematic. We therefore planned that the game would have about 300–400 users. However, statistics of the game's administration system show that we now have 983 users: 309 5<sup>th</sup> graders, 228 6<sup>th</sup> graders, and 263 7<sup>th</sup> graders. (183 users have not said which grade they are in.) Our results show that the game is attracting a variety of children of different ages.

### What the children say

Asked why they play, children give many different answers:

*'The game saved me from having a negative mark in trimester. Because of the game my teacher of Lithuanian language wrote me 10 and I got 4 as a final mark.'*

- Gvidas, 5<sup>th</sup> grade.

*'It's interesting. I'm learning and playing at the same time. We try to compete among ourselves in the class and see who knows more. I succeeded to get better marks in the end of the term. I play more now to get even better marks. When I told my classmates about the game, everybody got interested. Now we go together with friends to play in the library. Sometimes we go to consult with teachers.'*

- Deividas, 7<sup>th</sup> grade.

*'History! The game helped me. The final mark in the trimester is better!'*

- Gytis, 7<sup>th</sup> grade

*'I found out about The Challenger from my younger sister who heard about it in school from her teacher and started to increase her marks by playing it. I'm already in the 10<sup>th</sup> grade, but I was curious to try the game because it was something new – we didn't have anything like that before. It's fun and easy to learn. You never get bored, because you always get new tasks and there is a time limit so you have to be fast. I like most the tournament, because there are tasks from all*

*subjects and there's always something I don't know, so I play over and over again. Although the tasks are for younger graders, I've learnt some things also. The game helps me to remember more easily – I have finally remembered all the colours of the rainbow, I know how Roman warriors look and even more interesting things! Some of my friends also started to play and sometimes we compete among ourselves to see who will get more points. I don't get bad marks in school, but sometimes I miss just one or half of the point to receive a better mark. It would be good to have some additional points like my sister has, but I play without registration because the game is only for younger students and my teachers don't accept the results of the game. I hope that there will be a new version for older students soon as well!*

- Julija, 10th grade

---

At this stage, we are uncertain how many of the children who are playing are among the problem group, for two reasons: (i) it is illegal to survey the children, and (ii) the objectives of the game are not being declared to the children. However, we will find ways of clarifying this with the teachers and others as time goes by.

When creating the game we anticipated that good students might also become interested. However, we did not expect that so many would start playing. Another unexpected result was that youth (older teenagers) became interested.

### **What the teachers say**

Staff of Utena educational institutions and teachers took part in various aspects of the project. They prepared the game's concept, scenario and tasks, administration and evaluation system. In addition to 13 volunteer teachers who are coordinating the game, 53 math, history, Lithuanian language, nature sciences and English language teachers are taking part by approving results of the game and by encouraging the children to play.

The role of teachers is very important, as the children's motivation depends on whether the teachers approve the results. Most teachers have given positive feedback about the game, but there are some who disagree about approving results.

In order to deepen our understanding of teachers attitudes, we conducted a survey in Vyturiai basic school. Here is a summary of the results:

In Vyturiai basic school there are 611 students and 49 teachers. Ten of the teachers of 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> grades integrated the game into their subjects: maths (3 teachers), nature science (1 teacher), history (1 teacher), Lithuanian language (3 teachers) and English language (2 teachers). The other teachers are not taking part because they teach different ages groups, or teach subjects that are not included in the game. The majority of non-participating teachers (23) say that they would join if the opportunity was provided; the remaining 16 teachers were more hesitant.

Our survey asked:

1. What are the successes of the game?
2. What are the weaknesses of the game?

3. What kind of children are the most active participants, and why?
4. How has the project helped teachers?
5. How did they evaluate children?
6. What are the suggestions for future?

#### Successes:

Teachers said many children had started to play, providing new opportunities for evaluating children with learning difficulties. Teachers also said the cooperation with libraries was a success.

Teachers liked the playful system of collecting stickers. They said it was important that the tasks were differentiated according to age and that there was integration across different subject areas.

#### Weaknesses

Teachers said a weakness was limited access of teachers to the administration system of the game (only volunteer coordinators have access – one teacher per school). Most of the teachers said they would like to follow their own students' efforts and progress.

#### Most active children

Teachers said children with different abilities were involved. Although the aim was to attract problematic children, all who wished could play. According to teachers, most of those playing, and the most active, were willing and good learners (70% of willing and good learners). Fewer more resistant or problematic children were playing (60% of problematic and resistant learners).

Teachers believe that children's level of activity within the game depends on their motivation to learn. Children who care about evaluation and learning will be most active, and those who lack motivation and are more diffident will need greater encouragement. Teachers noticed that for a problematic child, the most important thing was to start playing. If the child starts playing and is encouraged, s/he quickly understands that the game can help.

#### How does the game help teachers? What do parents say?

All the teachers were interested to see how the game would improve children's results. Teachers also presented the game to parents. The teachers said parents were generally positive, but some were worried about the many hours their children were spending in front of the computer. However, because the game encouraged children to go to libraries, and there were teachers evaluating progress, they felt the time spent online had value.

#### Evaluation

Teachers responded that the points evaluation and the stickers systems were acceptable. They liked the fact that teachers' personal assessments and views were still included.

#### The future

Teachers suggested that the game needed more tasks and greater variation of tasks. They also said 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> graders would like to have a similar game. They all said the game should be included in school libraries.

*'5<sup>th</sup> grader, Anna, found out about the game from the librarian. She became so interested in the game that she hurries to the library every day, and also on Saturdays. Every time she plays, she gets to know more and to remember more. She follows the lessons more attentively so that it will be easier for her to play. History and math are the most problematic subjects for her. When she succeeds in the game of these subjects, she feels happy and proud. The game is really useful for the girl: it helps her to concentrate, and evokes a wish to learn more. Anna is distracted, inconsistent, while playing she concentrates better on what she's doing. The girl is glad about each achievement and I'm glad to be able to evaluate her efforts.*

- Teacher (the name of the child has been changed to protect her identity.)

---

### **What the librarians say**

Utena library has three branches in town and 22 in the villages, and a total of 65 librarians. Children, especially in villages, are the most common visitors to libraries. In 2010 there were 3,048 children registered in district libraries who made a total of 89,849 visits. The large number of children in the libraries is sometimes a problem for librarians, as the librarians feel there are not enough activities for teenagers to express themselves in the library.

Librarians said the project and the game helped them to solve this problem, because:

1. They can offer a game for children who cannot find alternative activities in the libraries. When playing, they make less noise and don't disturb others.
2. By contributing to prevention of non-attendance at school, the game means librarians can avoid extreme actions that they do not believe are good or fair – like ousting children from libraries.
3. The game encourages better communication between librarians and teachers by showing teachers that the library can be important in the teaching and learning process.
4. The game is valuable and is an alternative to other computer games which have less value.

To understand the difference the game made for librarians, we conducted a survey of 17 librarians (7 working in town and 10 in the villages). Here is a summary of responses:

#### Strengths and weaknesses of the project and of the game

All librarians said a success was that the game had attracted even more children to the libraries. 12 librarians said the biggest problem was lack of computers for children to play, especially in the villages where there are only 2-4 computers in the libraries. Many children had put their names on waiting lists to play. Village librarians also said that the news of the game had reached the villages later, and so there were start-up delays in the villages.

#### The children who play

The librarians said good students were more active than problematic ones. In the bigger libraries, librarians said it was difficult to know the exact number of good or problematic

children playing. However, in the village libraries, where the libraries know the children personally, librarians said the majority of players were good students. They said special efforts were needed to encourage problematic and resistant children.

#### Additional work for the librarians

Librarians said they did not need to put extra effort into interesting the children in the game. Many children got to know about the game from friends and teachers. In the village libraries, where the game arrived later, children even told the librarians about it and encouraged the librarians to introduce it!

#### Understanding the game

All librarians indicated that children understood the rules of the game quickly and easily; librarians did not need to explain and help much. However, both the children and the librarians found it difficult to understand the points scoring system and the way the evaluation worked.

#### The use of books

Librarians said children were not using books to find answers and solve problems arising out of the game, but used guesswork or learned to remember the right answers. Also, children spoke amongst themselves, helped each other and used the Internet – usually Google – to do research.

#### Changes in behaviour

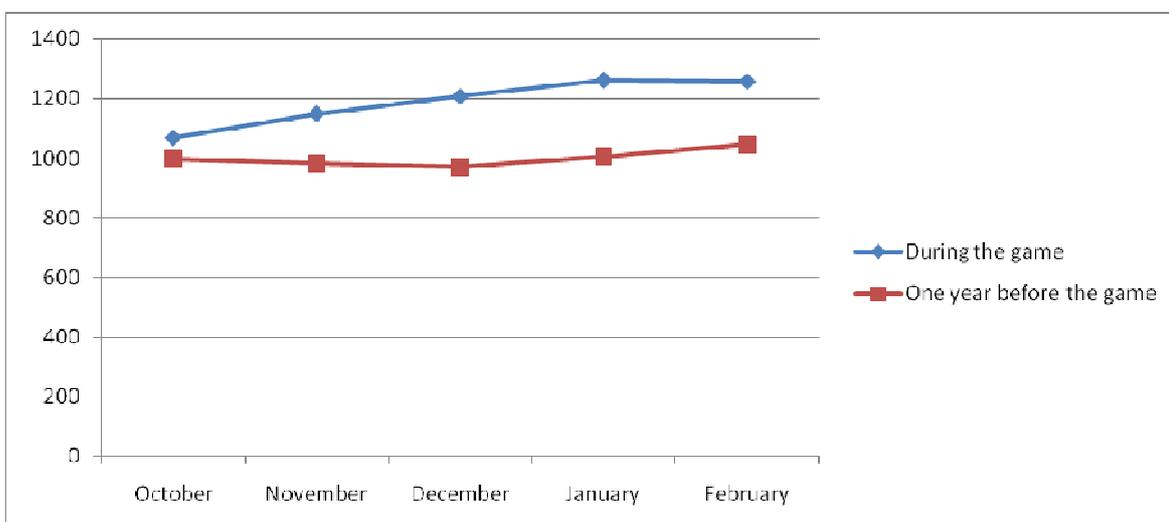
The librarians observed that fewer children were playing computer war games and other online games.

#### What the librarians learnt from the project

Answering questions about their own learning, librarians said the key learning was cooperation with schools and other partners.

### **Increased computer usage**

Children hurry to play the game after school. Often they have to wait, because there aren't enough computers for each child. The popularity of the game is demonstrated by the increase in the number of children using computers since the launch of the game (November, 2010). The change can be seen in the graph below:



The results of the project so far have exceeded our expectations – there are many more children participating than we intended.

## LESSONS LEARNED

*The Challenger* became a challenge not only for children, but for librarians as well. While playing together with them we learnt and understood that:

**Strong partnership in this kind of project is necessary.** It is especially good when there is an authoritative institution – that is, one that is both trusted and has expertise – among the partners. In our case, it was important because the project was innovative and we had little time. Many teachers had to be convinced that the game would produce valuable results, that were worthy of school approval. The participation and opinion of an institution which has an important role in the teachers' professional community was essential to convince the teachers.

In a project like this, when creation and development of technologies are expensive and the budget is limited, **a lot depends on participants initiative and enthusiasm.**

For projects where implementation is impossible, without clear explanation and communication with children and teachers **more time is needed.** The creation of the concept, tasks and system took seven months. The game was implemented in the main town library and in its branches in the villages and it took a while for the game to reach all children. We need more time for implementation to properly assess the impact of the game. The work was very intensive, and we had to hurry. But in a project which aims to have an impact on children's lives, it is necessary to think about each step. Even at this early stage, we can see what changes need to be made, but we are happy to say that early results show that there are no substantial mistakes.

## SUSTAINABILITY

The game has attracted wide interest. Not only local, but also national level education and training institutions and Ministry of Education and Science are interested in the game and its methodology. When presenting the project, we **always look for new partners and ways to improve and expand the game.** Presenting the game to government and professional educational agencies is at the centre of our sustainability strategy.