

Tallinn University
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Digital Learning Games

CONCEPTUAL DESIGN OF A DIGITAL READING DIARY

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Declaration

I hereby declare that I have written this thesis by myself and without support from any other person or source, and that I have only used the materials and sources indicated in the list of work cited. Neither I myself nor any other person has submitted this to any other institution for a degree or for publication.

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Introduction

It is a general belief that one learns to read by reading. According to the national curriculum (RÕK 2011) of teaching Estonian language in the first stage of studies (grades 1 - 3) a student has to read minimum twelve books. That is four books per year which obviously is not enough to develop excellent reading habits nor excellent vocabulary. Several studies have confirmed a positive connection between reading amount and reading competence and of reading competence growth (Schaffner, Schiefele & Stutz, 2016).

Not being familiar with reading books or having to analyze texts has however left our society rather shallow minded. Finnish researcher Ilkka Mäkinen claims that today's reader is not willing to read texts longer than an average Wikipedia article and that the love for reading may be vanishing in nowadays world (Mäkinen, 2014).

Unfortunately, the decline in reading motivation among Estonian students has been discussed more than once in Estonian media publications. In 2013 it was found that due to the changed reading habits, students' vocabulary has shrunk and the understanding of a full rich text has become more complicated for them (Bobõlski, 2013). Changing reading habits is a global issue. A study conducted In the United States says that overall reading has become very unpopular, showing significantly lower rates than 10 or 20 years ago (National Endowment for the Arts, 2007).

One method that mainly primary school teachers use to track students' readings is a reading diary (also referred as reading log, reading journal, response journal). Students reflect their understanding on the book and add their opinion about the book. The choice of paper version reading diaries on the market is wide. However, the approach is shifted more towards private usage and the reading diaries do not allow tracking how far one has come with reading a book. This research proposes that students having overview of their performance while using an interactive gamified reading diary will increase their interest in reading books.

In recent years, several educators and researchers have been trying to find solutions to the problem related to reading motivation (Hurst, Fisk & Wilson 2006, Lyutaya 2011). These studies conducted have been testing reading diaries' different versions - online journal, blogging and a regular on paper diary (Curwood & Cowell 2011, Lee 2012, Grisham & Wolsey 2007, Monaghan 2016).

Evidence suggests that social and digital interactions positively affect the development of today's youth. The MacArthur Foundation (2011) conducted a study where according to the results three out of four administrators say mobile learning devices are beneficial for increasing student engagement in school and learning, and one-half of those surveyed say mobile devices can be used to extend learning beyond the school day.

The aim of my research is to find out how to support teachers to motivate their students to read more by using a digital reading diary. This research presents a conceptual design for a reading diary that is put together based on the case study group interviews with primary school teachers. To reach my goal following research questions were posed:

- Would a digital reading diary be a desired tool/method in classrooms?
- What kind of qualities should a digital reading diary possess?
- How teachers use gamification to motivate their students?
- How gamification through a digital reading diary would help students to read more books?

This thesis consists of six chapters. The first chapter views what type of students have entered school systems and how the systems and teaching methods should differ from the current ones. The second chapter is about gamification and game-based learning - why using these methods in teaching would be beneficial in learning. Third chapter looks into reading motivation. The fourth chapter gives an overview of different reading diaries in Estonia, Taiwan and USA. The fifth chapter represent the methodology and sixth is describing the results alongside with discussion.

21st century learner

In 2001 Marc Prensky, an American writer and speaker on education, came up with new terms to describe the members of society. He divided people into two groups: digital natives and digital immigrants (Prensky, 2001). He focused on the first group because they are the generation (1980-1994) who according to Prensky have been immersed by technology since birth and therefore their learning skills are different. He claimed that society needed completely new methodologies in all subjects in all levels.

As our culture keeps transitioning from analog society to a digital one, tech strategist and researcher Alexandra Samuels suggests new terms to describe nowadays youth. She divides children into three groups: digital orphans, exiles, heirs (Samuel, 2016). Digital heirs possess, according to Samuels, the biggest advantage in the group. Digital heirs have great technological skills thanks to their parents and teachers. The complete opposites are the digital exiles who have been raised, on purpose, with minimal technology. Samuel claims that these children will either have problems finding balance in their online lives or continue to live in the exile just like their parents. The third group - digital orphans - is someone in between the heirs and orphans. Their parents have given them nearly unlimited access to technology yet very little guidance, which in the future may cause issues.

The generation of digital natives needed new methods in classrooms and so do the new generations. For years educators have been working on developing 21st century skills (critical thinking and problem solving; communication; collaboration; creativity and innovation) among their students so that they would be able to create, evaluate and effectively utilize information, media and technology (NEA, 2013). Abdullah and Hendon (2016) theorize that because students already live a digital life from a young age, they may have already acquired the skills needed for the 21st century learning outside the classroom.

Learning process should always be, with or without technology, engaging. However using technology in classrooms allows learning to be interactive and it is not limited by space and time. Researchers (Abdullah & Hendon, 2016) suggest that without

keeping up with new teaching methods may lead to demotivation and boredom in classrooms.

Gamification and game-based learning

Both, gamification and game based learning are to do with games, of course. However, there is a distinct difference. Definition of gamification varies widely but overall it involves the use of game elements in tasks players would not usually find attractive. Game based learning means that there is a game play with defined learning outcomes. In most cases, the game is a digital one but it does not always have to be (Homer, Kinzer & Plass, 2015).

Modern education mainly faces problems like students lacking motivation to participate actively in learning process or not being engaged to it fully. Gabe Zichermann is the world's foremost expert on gamification and he strongly recommends games as part of children's lives. He (2011) suggests that the reason why nowadays children do not perform so well at school is that the world moves too slowly for them, they need a world where things move at a faster pace and where collaborative play has a key role in everyday actions. In addition, they want that their actions would be followed by different rewards, which do not have to be particularly cash but meaningful access or power rewards (Zichermann, 2011).

Gamification

The term gamification rose as new hot topic in 2010 and has been popular ever since, and not only in education. Adam Penenberg from Forbes Magazine states in an interview that more or less all of Fortune's 500 listed companies apply gamification in the form of internally used games, virtual cash systems, point and rank systems (Buck, 2017). Examples of successful gamified apps are Swarm, Duolingo, Khan Academy, Nike etc. Ever since gamification reached popularity, more than 350 businesses started gamification projects (Karagiorgas & Niemann, 2017).

Gamification uses game design rules in a non-game context. Even though gamification employs the same aspects of a video game (Karagiorgas & Niemann, 2017), it is still not a video game - contrary to many parents' fear. Gamification usually follows five commonly used elements: points, badges, levels, leaderboards, and challenges. (Kiryakova, Angelova & Yordanova, 2014)

Using gamified activities in classrooms has not only helped teachers make their lessons interesting and fun but gamification is strongly related to improving motivation and leading to higher level of commitment. Ways to achieve those desired goals in learning process is to reward students' efforts and achieved results (Kiryakova et al, 2014). One can argue that grading students is also rewarding but applying gamification allows the rewards to open new doors to the next challenges, which in turn keep students' interest on a specific topic.

Despite being able to motivate students to be persistent in the learning process, it has to be noted that gamification is not directly associated with knowledge and skills. It is rather a tool or a learning medium to affect students' behaviour, commitment and motivation, which could lead to improving knowledge and skills. (Karagiorgas & Niemann, 2017). In addition, gamified learning can be difficult, challenging and stressful because it is a serious approach to accelerating the experience curve of the learning, teaching complex subjects, and systems thinking (Buck, 2017).

Collaboration is considered a significant element in learning process. In addition to being an important element in gamification, collaboration is one of the 4C's (communication, collaboration, critical thinking, creativity) of 21st century skills (NEA 2013). Zichermann refers to collaboration in his Ted Talk (Zichermann, 2011) more than once. He says, "*learning is fun and learning is multiplayer*". Rather than focusing on making students compete with each other, educators should emphasize the aspect of working together and overcoming challenges.

Game-based learning

Another possible way to engage students in classrooms is using digital games. However, educators have to be able to make sure that the technology used for informal learning would be trustworthy. Assured pedagogical approach is required to develop a successful educational game (Albert, Conlan, Kickmeier-Rust, Peirce, Schwarz & Verpoorten, 2007). Otherwise, there is a chance that players are immersed and highly motivated to play but the learning objectives will not be achieved. The other sad scenario trending among educational games is having very clear and strong learning goals but lacking gameplay. While the focus is on moving further away from classical textbooks it should be reminded that e-learning is also interactive rather than just reading a PDF file or watching a movie or a video.

It is claimed that the strength of digital games in classrooms is laid out in high level of intrinsic motivation. Players are motivated to play, continue playing and through that to learn. However, an ongoing storyline and characters support learning. Important parts of a fun game are challenges, fantasy and curiosity (Albert et al, 2007). It is essential for a good educational game to have the following qualities:

- Clear goals and rules
- Meaningful learning context
- Engaging storyline
- Immediate feedback
- Interactivity
- Challenge and competition
- Elements of surprise
- Rich learning environment

Elisabeth Hanson Smith (2016) contemplated on why gaming is good for teaching and what motivates students to play (video) games repeatedly. In the end, she reports that games may lead the student from extrinsic motivations toward intrinsic motivation because gaming leads to the satisfactions of achievement and mastery. She also notes

that games may not make anybody particularly smarter or better at multitasking, but they can provide more satisfaction, which is very important part of life.

Reading motivation

Being motivated means to be moved or inspired. Motivation has been defined in many ways and reading motivation is said to be a complex construct. It has to do with motivation constructs (interest, freedom of choice, collaboration, involvement, and efficacy), text genres, specific or general contexts and self versus others evidence sources. At least nine components of motivation have been distinguished, of which the first four are attributed to intrinsic motivation and the last five to extrinsic motivation (Deci & Ryan, 2000):

- Curiosity
- Challenge
- Involvement
- Self-efficacy
- Competition
- Recognition
- Grades
- Social interaction
- Work avoidance

Intrinsic motivation is related to curiosity. A child is just “motivated” and wants to read because it is fun and entertaining. Intrinsically motivated readers consume literature more and experience more desired outcomes (higher reading self-efficacy) through reading and this in turn makes them read even more (Deci & Ryan, 2000).

Buckley and Doyle (2014) identify three types of intrinsic motivation. First, the intrinsic motivation to know. It is described as to want to learn because of the pleasure learning offers. Second, the intrinsic motivation towards accomplishment that means wanting to learn because of wanting to defeat a (difficult) challenge. Third type is the intrinsic motivation to experience stimulation through learning. Stimulation can be sensory, aesthetic or emotional pleasure.

Extrinsic motivation however is often to do with rewards (also not getting a reward). While intrinsic motivation is associated with better reading comprehension then extrinsic motivation has been found to be non-significantly or even negatively related to understanding a text (Deci & Ryan, 2000).

As there are three different types of intrinsic motivations, so we can describe also different types of extrinsic motivation. One of them is external regulation, which refers to meeting an externally set standard or avoiding punishment. The other one is introjected regulation. In that case, learning activities are performed to maintain self-esteem or to avoid the feeling of guilt. Finally yet importantly, there is regulation through identification, the most autonomous form of external regulation. The person's identity is connected to an externally prohibited behaviour and that person acts to instantiate that identity. (Buckley & Doyle, 2014).

Two researchers from the United States conducted a two-month study on mandatory reading assignments and reading logs among 112 second and third grade students (Pak & Wesely, 2012). Their study focused on students' motivation. According to their findings, they suggest that mandatory reading assignments, which include keeping a log, may lead to decrease in children reading motivation. Their research claims that school reading generates negative attitudes towards reading and that this is troubling. In addition, they claim that the previous studies have found the connection between surveillance, pressure, control, deadlines and negative attitudes towards an activity. The author of this thesis disagrees with the mentioned results and would like to point out that labelling mandatory actions (e.g. reading) with negative emotions by adults is more troubling than their findings.

In school, students first have to learn to read so that later they could read to learn and the best way to achieve that is to practice reading. Perhaps the authors of the research should focus on recommending ways how to turn reading into a fun activity not on how mandatory reading should not be part of curriculum. In life there are several activities adults regard to highly negatively (e.g. paying taxes) but they do it because it is necessary.

Overview of existing reading diaries

Reading diaries have been used all over the world in different forms, either the classical paper version or it is being set up online. A classical reading diary contains an overview of a book, moral of the story and readers opinion about the book. In addition, space for drawing a picture is on part of the task. That sort of setup is not always set in stone and so the tasks may vary. The teacher can suggest components in different difficulty range. The tasks may require from finding information, analyzing or synthesizing information to making and defending an opinion (Lyutaya, 2011). Here are some examples of the tasks given inside a log:

- Guess what the book might be about
- Comment on a passage or sentence from the text
- Make a poster featuring one of the characters in the story
- Write down questions and answers
- Speculate about information gaps
- Read a review (and reply to it)
- Write a letter
- Imagine filming the story
- Provide your own ending
- Give opinions about the story
- Write down aspects of the culture reflected in the story

There have been discussions about the benefits of keeping a reading diary and as a result, there are several highlighted effects what using a diary may deliver for students. Reading and keeping a diary is said to promote critical thinking in addition to improving writing skills (Lee, 2012). Lee (2012) describes in his research how a reading diary plays an significant role in group and class discussions which in turn can first help students to understand the book better and second enhance skills necessary for discussions.

Tatiana Lyutaya (2011) from Nizhnevartovsk State University of Humanities in Western Siberia, Russia explains how she has used reading logs in her English (as foreign

language) classes to increase vocabulary skills. In her article she claims that people do not learn things in one pass and that according to some researchers a person needs to come across a word 17 times to learn it. Nation (1997) states that in order to remember a word, a student has to notice the word by reading in large amounts and/or engage in language-focused activity, such as making notes on new vocabulary.

Classical reading diaries in Estonia

In Estonia, bookstores offer many varieties of reading diaries from different publishers. According to one of the biggest bookstores, Rahva Raamat, Nutivihik (Figure 1) publishes the most popular reading diary. It offers three different versions for a student to analyze readings and has space for 12 books (Nutivihik, n.d.). On a positive side, each page guides students to understand his reading through answering questions. One question is meant for the author of a book but how a student will get an answer from the author remains unclear.

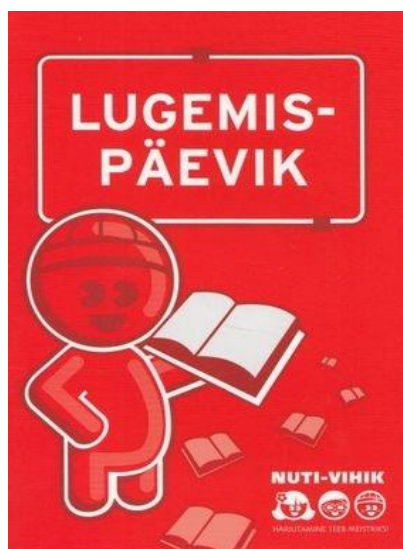


Figure 1. A reading diary by Nutivihik.

Sulemees (Figure 2 & Figure 3) have published another very classical reading diary. It is a very basic diary where a student can write down a summary and draw a picture.

It comes in two different colours - blue and pink, assuming that the publishing house wants the reading diary to be appealing to both boys and girls.

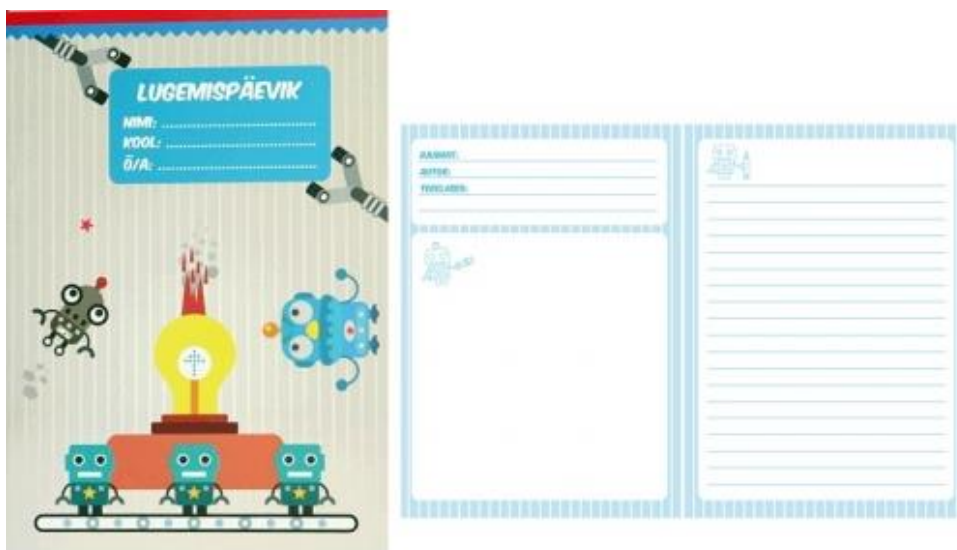


Figure 2. Reading diary by Sulemees



Figure 3. Reading diary by Sulemees

The previously mentioned type is widely popular also among other publishing houses. However, one very specific collection of reading diaries differs from the other significantly. Publishing house ILO AS has created reading diaries that contain worksheets for a certain list of children books. Students have to solve crosswords, word puzzles, drawing assignments and more. Furthermore, there are empty pages for books that are not listed. Reading diaries are divided into three parts: 1st to 4th grade, 5th to 7th grade and 8th to 9th grade.

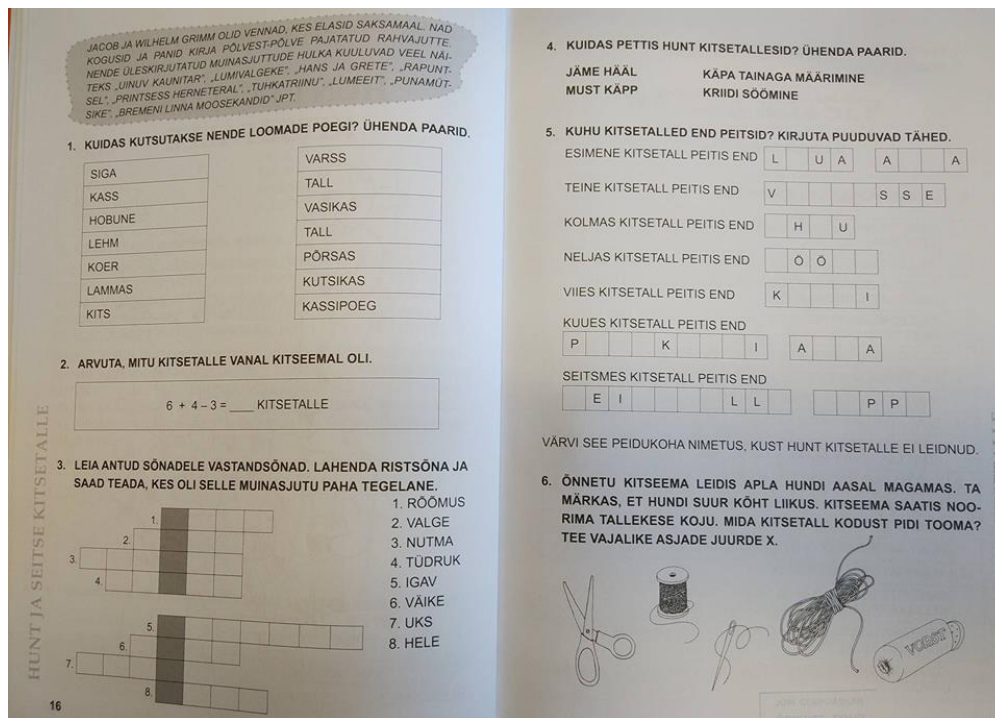


Figure 4. Example of worksheet in ILO AS reading diary

It definitely makes a teacher's work a lot easier to have pre-made worksheets and tests but the list of books the diary suggests limits students' options. In addition, the diary itself costs about six times more than the very simple regular ones by Sulemees or Nutivihik. Furthermore, it is debatable how up-to-date is the given list and if today's children really should read the books their parents did in their childhood.

Online reading diary in Taiwan

A reading log has been used also in Taiwan. Another English teacher decided to create a platform for online reading log for her students throughout one school year. One of the reasons for opting for an online log comes from the fact that, in Taiwan, the age group of 16–20 years old had the highest percentage of internet users, at 98.90% or 1.57 million people (Taiwan Network Information Center, 2006). Other substantial reasons why electronic journals promote reading and writing are as follows:

- Developing ICT literacy

- Peer collaboration
- Innovation
- Creating non-threatening environment for learning
- No time or space limitations (versus classroom environments)
- Otherwise low-achieving students get engaged in learning process
- Students' development is easily recorded
- Easier for teachers to assess students' work

The results of the journal were stated to positive saying that the electronic journal is a beneficial and engaging method to use for meaningful reading and writing activities. The author of the research claims that since the students could write about their personal emotions and feelings in the journal it supported “reading for interest” (Lee, 2012). Another research done in the United States among elementary school students proves that reading and journaling without pressure increases interest in both reading and writing (Pak & Weseley, 2012). Another study in the US found that digital technologies have helped students to achieve better results as well. For example, students who have often do not succeed in traditional literacy practices (print based reading, writing) were successful in the higher-level literacy practices that were carried out online (Curwood & Cowell, 2011).

Blogging as a reading diary in USA

Blogging or personal web log is another good example of how keeping an online reading diary would have effect on children's' reading habits. A few dissertations in the US take a closer look on blogs as reading diaries.

While learning is a social activity then blogging offers a great opportunity to get fast feedback from peers and teachers. It allows online discussions, which can lead to collective knowledge because of working together. Researchers have used online discussion over literature among high school students and their findings were quite similar to many other researches (Grisham & Wolsey, 2007). According to Wolsey

and Grisham, students tend to think more critically about their responses to literature and to their peers during online discussions compared to writing opinions in a paper journal or during a face-to-face discussion. In addition students developed more critical literacy skills because the collaborative discussion gave everyone an opportunity to each other's' point of view.

Adrienne A. Monaghan (2016) claims that after conducting a study with two groups of fourth graders, where one group was using blogging as reader response journal and the other used traditional on-paper journal, there were no significant differences when it comes to comparing reading motivation. Yet children who used blogging were more motivated to write posts about literature outside school even though it was not formally assigned. In addition, her dissertation points out that blogging created a stronger sense of classroom community and improved critical thinking skills. Her findings suggest that blogging is a valuable teaching tool.

Social reading systems

Travis Alber, a venturer of several startups, came up with a concept of BookGlutton in 2007. BookGlutton, ReadUp and ReadSocial are all social reading systems that allow readers to communicate in real-time chats while reading (Alber, n.d). BookGlutton represented an innovative way to read and publish books. The idea was that readers has a chance to leave comments on paragraphs chat inside chapters. BookGlutton had 140 000 monthly unique users and 20 000 members (Alber, n.d).

Today BookGlutton and ReadSocial do not exist anymore but ReadUp is very much active. ReadUp gathers readers in small groups where they discuss what they read. It uses Twitter for sharing thoughts and inviting friends to read. When the reading schedule expires, the ReadUp disappears. Even though it was initially created for adults, many teachers have been interested in adopting the system in their classrooms.

Methodology

Objectives

Part of this thesis is conducting a research among primary school teachers to find out their preference on the design of a digital reading diary. This part of the work focuses mainly on the carrying out the research and on the teachers' feedback.

To conduct the research the author of this thesis decided to use case study interviews. Yin (1989) defines a case study as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”. Case study interviews are often unstructured and based on informal discussions, which create a stress free environment for the participants (Yin, 1989).

Reading diary can be a useful tool for a teacher and therefore they were the main target group in the current research. All participants were informed about recording the interviews and they gave their permission beforehand.

Research questions about the reading diary

Would a digital reading diary be a desired tool/method in classrooms?

What kind of qualities should a digital reading diary possess?

How teachers use gamification to motivate their students?

How gamification through a digital reading diary would help students to read more books?

Design and description of research procedure

A study was conducted with 12 female teachers aged 26 to 61. The procedure was divided into two parts:

Part 1

Introduction of the process and the idea itself.

Part 2

Semi-structured interviews and discussions in groups on reading diaries and motivation.

The participating teachers are working in a municipal school outside Tallinn with 1172 students. Among the participators, the teacher with the longest experiences in educational field was 25 years and the shortest 8 months. All participants are primary school teachers. One of them is teaching students with special needs and there are only four students in her classroom.

Main idea of the interviews was to collect original ideas and data on how a digital reading diary would look like ideally for teachers. It is a known fact that usually younger students use apps and internet pages that their teachers introduce them. For that to happen an online environment has to be appealing to teachers first.

Interviews were intended to turn into a stress free informal discussion, which they also did because participants knew each other. As an interviewer, it was important not to show my opinion or attitude so that the collected answers would not be biased.

Case study semi-structured interviews were recorded to avoid missing important data. Duration of each group interview and discussion varied from 35 minutes to 53 minutes. Duration of conversations depended on how fast participators could brainstorm different ideas (versus taking a lot of time to think through ones answers) but also how much group members agreed or disagreed with each other's opinions.

The group interviews and discussion were held in groups of 4 - 5 teachers. They were asked to discuss the following questions:

- Please tell me how many books your students read?
- What do you think motivates your students to read?
- Do you ask your students to keep a reading diary? Why?
- What is the purpose of a reading diary in your classroom?
- Would you use a digital reading diary if possible? Why?
- In case of a digital reading diary, how should the following components be organized?

-logging in

-managing students and books that are read

-feedback

-discussion area

-visuals

- Please describe what kind of gamified challenges would you like your students to participate in a digital reading diary?
- What kind of skills do you think a digital reading diary would enhance?
- Additional thoughts and ideas on a digital reading diary?

Results and discussion

This chapter describes the results of three group interviews. To present the results a qualitative content analysis was created. In case of a qualitative content analysis the aim is not to appoint frequency of data units but it allows to focus on the importance of the text (Kalmus, Linno &Masso, 2015). Results and discussion are presented in the same chapter together.

Teachers who participated in my research differentiate two categories in reading: mandatory and free of choice reading. The first one is a very certain list of books or authors, sometimes it is just a number of pages (varies from 100-200 pages per book). The second one contains books that students choose themselves and read after they have completed the mandatory list. Teachers admit that they are willing to make changes in the lists when students approach them because autonomy is very important part of motivating children to read.

Despite the predescription in the national curriculum, the participating teachers give their students more books to read. Overall, the principle is “one month, one book” which makes it up to nine books per school year; the average is 6 - 7 books. However, it was also noted that as students get older they have more and more to study and therefore they read less. Reading less after primary school is not considered as a problem because it is the primary school where reading and understanding text is being learned.

Coming back to Ilkka Mäkinen’s opinion how nowadays reader only reads texts as long an article in Wikipedia then the representative range of teachers prove him somewhat wrong. However, it is very important to know that when teachers announced the amount of books their students read, they meant the books students have to read. The difference is between “willing” and “having to”. In average, it is 6-7 books per year a student has to read but how many they are willing to read extra, teachers do not mention. In the following paragraphs it is explained how teachers try to make their students read more than they have to, how a reading diary is used and what is their attitude towards the idea of a digital reading diary; how do teachers imagine it to be.

How teachers motivate their students

During the discussions, teachers described several ways how they keep track of students' readings. Most of the possibilities are to do with visuals or an actual prize.

- Name of the book is added after student's name on the wall or on cupboard. It creates a moment of competition among children - everybody wants to be first so they do not give up on reading. However, a teacher who managed that system said that last school year [2016/17] it was a huge motivator for children to read but this year only few students are interested in such competition.

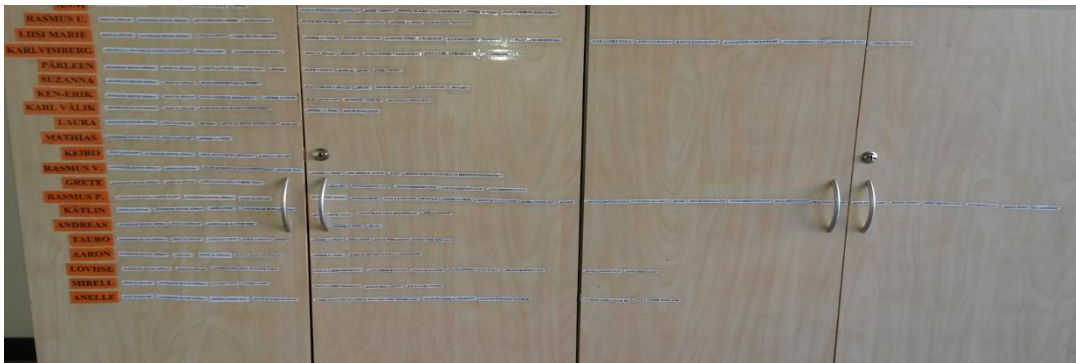


Figure 5. Students' names and the books they have read.

- Every student has an empty ice cream scone on the wall (Figure 4) and whenever he/she reads a book, he/she can add an extra scoop of ice cream on top of it.



Figure 6 Ice cream scoops piled on the wall

- Every student has an “empty bookshelf” on the wall (Figure 5). He/she adds the name of the book that he/she read on the wall and can color the side of the book so that it would create contrast with the uncoloured/unread ones.

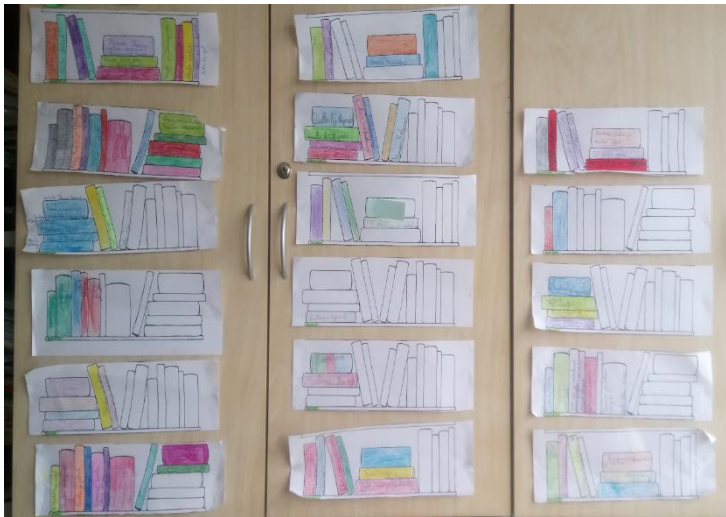


Figure 7. Empty and coloured books on the shelves.

- The “One Kilometer Club”. Students who want to become a member of the One Kilometer Club are supposed to read books worth 1000 pages. Those children will also get public acknowledgment and a small prize from their teacher.

In addition to reading competitions, children enjoy meeting authors and having a chat with them. In addition, advertising new books have made them read something. Another way to go is constant explanation why one should read books and what are the benefits of reading (increase in vocabulary, better grammar, and general knowledge about the world).

In contrary to the pleasant activities there are other methods that make children pick up a book from the library. For example, grades or command from the teacher, which according to the participants still works in primary school. These methods are definitely not the best options for nobody involved in the process but as it was mentioned during interviews repeatedly - only few children will read books voluntarily - followed by explanation that all groups are very different and the overall attitude among children determines whether books are popular or not.

As seen schools mainly focus on extrinsic motivation: reward, competition, reading diaries, as it becomes evident in the next subchapter, are connected to grades. Most of the reading is to do with competing and then relying on children's guilt that he/she is not as good compared to another classmate. *"If he sees that he only has one ice-cream ball and next to his scone somebody has, I don't know 15 of them then he feels bad and starts reading more"*. Buckley and Doyle (2014) describe that kind of extrinsic motivation as introjected regulation where a student tries to keep up self-esteem and avoid guilt.

There is one exception among the examples the teachers gave - the "One Kilometer Club". It focuses more on intrinsic motivation by offering a personal challenge for each student. Furthermore, it was not obligatory for everybody. Students have only themselves to compete because they want to prove themselves that they can read 1000 pages. Of course success is followed by a prize (extrinsic) and eliminating competition from such endeavour entirely may be tricky and small children often want to please their parents but the sole idea has much more value than the simple competition "Who reads more?".

During conversations between participants, none of them described any other gamified possibilities than the examples above. Nor did they mention playing games with students after everybody has read a book.

Using reading diaries - how and why?

Reading diaries are widely used in primary schools, especially during the first three to four years of school. Teachers mainly ask students to buy classical reading diaries where they write down the name of the book, characters, draw a picture and give an overview of what they read. That kind of activity serves practicing analyzing skills and being able to express ones thoughts on paper. Controlling and tracking students' progress is also something teachers do through reading diaries.

Reading is not like mathematics where there are right and wrong answers, thus grading is very complex and should be always positive. *"For some students reading is very hard. If he reads a book then it is already a lot for him. And when he writes down what happened there - well, that is a major thing!"* Reading and keeping a diary should not be punished with a negative grade because a lot of effort goes into that work in most cases. That is why most of the teachers only give grades "4" or "5" if a student presents his diary. In addition to the reading diary, there is usually a test about the book and when the test does not go so well then the grade from reading diary will act in student's favor.

Having to fill in a diary and taking a test and participating in a group work can be seen two ways. Either the teachers want students to really understand what the book is about or they do not trust them. *"If he doesn't succeed in the test then I can see that he didn't actually read the book", "I don't always know if my students wrote the text in their reading diary themselves"* were said during the discussions. None of the participants argued nor even noticed that perhaps controlling and testing students may be one factor that takes away joy of reading.

Statistically only two out of 12 teachers do not ask their students to keep a reading diary. Another one allows students to use it but has not made it mandatory. *“I just don’t like to read them. They are awful!”* said one teacher, pointing out that children do not know how to write overviews and generalize texts. The reason behind that lays in their stage of development - they are simply not there yet and writing overviews just like any other skills need to be practiced. *“Without guidance children will only write “I like it”, “It was nice” “added another teacher with an ennuied voice.*

Opinion on digital reading diary

When asked if participants would use a digital version of a reading diary I got three different answers and attitudes. “Yes!”, “Depends on how user friendly it is”, “I’m not sure”. Overall, the idea of a digital reading diary rather created interest and was well perceived.

Teachers who answered a firm “yes” expressed their interest in developing computer skills among their students, offering interactive environments to their students and having a tool that would simplify their own work. In their minds, schools should emphasize using computers and enhancing ICT skills more and the earlier it is done, the better. *“At the moment we are standing still, there is no development. We don’t have our students using computers in primary school but assume that they will be able to write a research independently on computer in 8th grade”.*

The second type of answer represents teachers who do not use ICT tools in their classes very often. In addition, they seemed to be more worried about how they themselves would pull off using computer. Thus, the reading diary should be very simple and even somewhat primitive. Another point they made was that the efficiency should be bigger than now which refers that teachers with a rather modest attitude are pleased with the current system.

Third group were teachers who favor writing with a pen. They were very conservative and hesitant when it comes to leaving old habits behind. If they could choose, they would use a digital reading diary the earliest in 4th grade because by then handwriting is well developed. Other aspect they mostly relied on was that typing in 1st grade is very slow which is a major hindrance. Also drawing was very essential for them - could a child draw online? That was then argued by a tech savvy teacher who noted that many students find drawing on a paper very annoying but when they learned how to use Paint then they could not get enough of it.

When asked which skills a digital reading diary would enhance among students then the only answer that was given was “computer skills” - how to work with mouse, how to log in, how to type, learning about internet. On the other side handwritten reading diary helped to improve text analyzing skills according to the participating teachers. None of the teachers mentioned reading skills or that a reading diary could potentially raise interest in books overall.

Suggestions for a gamified digital reading diary

One of the aims of this research is to find out what teachers expect from a digital reading diary. Therefore they had a chance to be part of a participatory design method. Teachers were asked to imagine and describe how they would vision certain parts of the reading diary’s gamified environment. Participants’ answers can be divided between these following five game elements

- Collaboration
- Competition
- Rewards
- Theme/aesthetics
- Time

In addition to the outlined elements teachers repeatedly stressed that first of all the gamified environment has to be very user friendly - easy to log in, very clear and organized set-up, an introductory clip or tutorial how to use it. The first contact for a

user is logging in. One group agreed that logging in should be connected to Studium/eKool where students are supposed to have their own account. The other group was pro Google account despite the safety risk and the fact that Google only allows to register a user at a certain age.

Another important section that seemed to repeat and create questions among participants was drawing - how and if students can draw inside a digital reading diary. From outside the educational system this may seem somewhat odd but teachers often use drawing as a tool to get to know more about their students. It also makes it easier for some children to communicate while drawing. In a reading diary, a drawing completes the story and gives students an opportunity to express themselves a little more creatively.

Even though it was possible to collect different ideas and data from teachers, they still struggled to express their thoughts at times. For example, a reading diary means writing a summary of a book. While there were suggestions for some additional activities (an online test, arrange sentences or characters, make a comics) it was often asked *“So there won’t be a summary for each book, or!?”*. Although some teachers acknowledged that simply typing in a text is boring and that there should be other ways to tell a story they could not come up with alternative ideas.

Collaboration

Wolsey and Grisham (2007) paid attention to collaborative learning in the form of blogging and open online discussion saying that it is developing critical thinking. Teachers involved in this research did not all agree that there should be a discussion area in a digital reading diary. These teachers thought of it as an extra obligation when they should manage discussions. *“But who would manage it then? Somebody says “Pippi Longstocking sucks!” and the other adds, “Yeah, she does!” Hm, rather not”*. Using vulgar language was seen as a hole in the plan. However, other participants

thought that if a teacher is involved then students would not become vulgar and would more likely learn how to communicate politely online.

A discussion board was overall seen as a positive tool but only if it's not mandatory. Otherwise, it would create negative feelings and students would grow tired of it soon. However voluntarily sharing thoughts could be rewarded with extra points (in case there is a point system). Discussion board could also serve the role of advertising books to each other.

Competition and challenges

As it was previously stated that most of the reading is built on competitions. When participants were asked about challenges, they started talking about competitions. It can be only assumed that teachers find competitions as a great tool to succeed in their work.

As the school they work for has a yearly reading competition, the participants thought it would be a great idea to take that event online - it would make it easier to calculate the pages and would save environment (paper waste). Having a program that calculates the number of pages students read makes it simple to announce best readers in school but also in classrooms, maybe even based on age number. In addition, it would be possible to compete with other schools.

Even though competition is popular among teachers, they do admit that it is not suitable for all students. There were discussions if a reading diary should present rankings of students based on how much they have read. It was agreed that maybe only up to fifth or tenth place, the ranking could present names of students because there are children who are not so good at reading and publicly standing as last makes them feel even worse.

Nonetheless, ranking could also be presented mysteriously. Whenever a student logs into the reading diary he sees only his own ranking and the other names are only in the form of x-s or dots. According to teachers this may offer excitement and again make students read more because the next time he logs in he might have a higher ranking.

Rewards

In school, the main reward is a grade. However, teachers give actual prizes at the end of the school year to students who managed to read most pages. It is usually candy, some souvenirs, or a book. Another teacher argues that one school year is too long for such competitions and that rewards should be given at least twice a year, otherwise the whole idea may fade.

When teachers were asked to brainstorm how to reward students in a digital reading diary, either they had many ideas or they had almost none. In the last group, one teacher had heard of badges, but very vaguely. She added that for her a badge would not be enough and she worried if a badge would give a full meaning to child's effort.

The ideas teachers offered for rewards were as followed:

- Diplomas on the “wall”
- Cups on the “shelf”
- Stars - every exercise/activity is rewarded with a star. A certain number of stars (e.g. five) give students something bigger
- Levels - another/new world opens up when student reads certain number of pages/solves tasks
- After reaching a goal students can change theme or add something on their page, play a game
- Collecting points could allow students buy something
- Rewards exist in the “real world”, it could also be public acknowledgment
- No homework when the entire groups reaches their goal

For the rewards to be effective, they should be attached to moments of surprise. Students should not always know to expect.

Theme/Aesthetics

When we think of a game or an app the first thing that comes to our minds is how it looks like. Also for children, it is crucial to see nice colours and appealing characters. Based on the interviews the ideas are presented from superficial simple suggestions to specific visions.

First of all the layout should be empty so that children themselves could design their own reading diary - choose background, font. It would give them the chance to personalize their page. Furthermore, since there are children who cannot handle varicoloured themes have then the possibility to go for gray or whatever colour they find acceptable.

A little more specific version was that a student chooses from the given themes and through that also creates an avatar for himself. For example Harry Potter or Pippi Longstocking theme. The author of that specific idea however made it to conclusion that copyrights exist and it may not be possible offer such solution.

Teachers agreed that the idea of a digital reading diary is to attract students therefore the diary itself has to be attractive. When asked to describe it more specifically teachers admitted they did not know what attractive exactly was. They vaguely suggested “interactive”, “has many possibilities [for activities]”, “simple and clear buttons”.

One of the participants had the idea of a bookshelf. Teacher has a list of students and whenever he/she clicks on a student’s name, a bookshelf appears. That bookshelf holds all the books a student has read. After clicking on a book teacher sees what the students thinks of the book and how he understood it. This of course limits students’ creativity, as it is only the summary he can present.

An overall idea was that students should see suggestions what to read - names of books, authors, maybe even photos of authors. Another thought was to collaborate with Estonian Children's Literature Center since they always have the most updated information on children literature.

Sometimes all it takes to motivate students are some small praises and positive thoughts. Therefore, one of the design elements could be welcoming messages. When a student logs in after a longer pause, he could see "*Great to have you back!*" or "*Keep going! Not all is lost yet!*" When a student is a very active, he could see "*You are a very devoted reader!*" Also keeping track where students are with their readings could motivate them. In case the reading diary includes levels then students could receive messages like "*You are on Level 2. To make it to the next level you should read 40 pages*".

Time

Deadlines were considered one of the most important aspects in handing out reading lists to students. Teachers claimed that without deadlines only few students would read anything throughout the school year. One of them announced that not only students need time frame but also parents who then know how to guide their children at home.

In teachers' minds student would see on the screen how many days, hours and/or minutes he has left to finish a book. The other way to go is that a student could enter the number of pages he reads per day/week and the program calculates how many days/weeks it will take him to get through a book.

Conclusion

There is no doubt that reading will remain the most important skill learned in primary school. First we learn to read so that we could read to learn. According to the research this thesis presents, children in primary school have a lot of literature to handle during the first four to five years. As it was discussed previously in this thesis, the problem does not lay in the amount students have to read but would they to so when not controlled.

Even though teachers do not want to be forcing students to read and probably subconsciously thrive towards intrinsic motivation, they so far offer mainly extrinsic motivators. Most of the reading is based on command and competition. It was surprising to find out that gamification or even simple games are rare phenomenon when it comes to reading books.

One of the research questions of the current thesis was about finding out if teachers would even need or use a digital reading diary in their classrooms. Despite the fact that the representative range was limited to teachers working in the same school it was found that such tool would however add value to lessons. In addition, a digital reading diary would not only be about reading or reading motivation but its one facet is about teaching ICT skills. However, it has to be noted that still in nowadays digital era not all teachers are keen to leave pen and paper behind.

As this study focused on teachers' opinion it is also necessary to get information from students because they would be the ones using a digital reading diary. In addition, as this research proved, adults often cannot express creativity in such extents as children would. Ideas should in the future also be collected through having children testing a reading diary digitally.

Kokkuvõte

Pole kahtlustki, et lugemine on ja jääb ka edaspidi kõige tähtsamaks õpitud oskuseks põhikooli esimestel aastatel. Me õpime kõigepealt lugema, et hiljem lugedes õppida. Vastavalt uurimusele, mida antud magistritöö esitab, on õpilastel esimese nelja kuni viie aasta jooksul rohkelt kirjandust läbi võtta. Nagu eelnevalt töös on ka mainitud, siis probleem ei lasu raamatute koguses, mida õpilased peavad lugema, vaid selles, kas nad seda teeksid ka siis, kui õpetajad loetut ei kontrolliks.

Kuigi õpetajad ei tahaks sundida õpilasi lugema ning ilmselt alateadlikult soovivad liikuda sisemise motivatsiooni suunas, siis hetkel pakuvad nad õpilastele peamiselt väliseid motivaatoreid. Enamik lugemisest põhineb kas käsul või võistlustel klassis. Oli üllatav leida, et mängustamine või lihtsad mängud on harvad nähud, kui teemaks on raamatute lugemine.

Üks uurimuse küsimustest antud töös soovis saada vastust küsimusele, kas õpetajad üldse vajavad ja kasutaksid digitaalset lugemispäevikut oma tundides. Hoolimata sellest, et valim oli piiratud ühe kooli õpetajatega, võib üldistades öelda, et selline töövahend annaks õpetajate arvates tundidele lisaväärtust. Digitaalne lugemispäevik ei sisalda endas ainult lugemise või lugemismotivatsiooni elemente, vaid üks selle tahkudest oleks ka IKT-oskuste õpetamine. Siiski tuleb märkida, et isegi tänapäeva digitaalsel ajastul mitte kõik õpetajad ei ole koheselt valmis loobuma paberist ja pliiatsist.

Kuna antud töö keskendus õpetajate arvamuse kogumisele, oleks vajalik saada ka informatsiooni õpilastelt, sest just nemad oleksid digitaalse lugemispäeviku kasutajad. Lisaks, nagu töö ka tõestas, siis tihti ei suuda täiskasvanud väljendada loovust sellisel määral kui lapsed seda teeksid. Tulevikus peaks ideede kogumist korraldama läbi lugemispäeviku testimise õpilastega.

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Appendix 1

Interview with group 1

Interviewees: Eleri, Kairi, Linda, Merke, Sigre

Interviewer: Sandra Taimre

Date and duration: 16.04.2018 [35:59]

Location: Jüri Gümnaasium

Link to the audio file:

https://drive.google.com/open?id=1U_5t8kPPmOOH7X7yR44qDP4tOh8M1DWW

Interview with group 2

Interviewees: Anett, Mari, Tiina

Interviewer: Sandra Taimre

Date and duration: 19.04.2018 [35:53]

Location: Jüri Gümnaasium

Link to the audio file: https://drive.google.com/open?id=1BSsizrFsy_U-zhyOFlmAEKlkFhOggkpiw

Interview with group 3

Interviewees: Kristin, Marika, Monika, Rita

Interviewer: Sandra Taimre

Date and duration: 19.04.2018 [53:09]

Location: Jüri Gümnaasium

Link to the audio file:

https://drive.google.com/open?id=1mSbVPebYdsoJZ4AT3AdDSV_udFls-UgH