Web-Based Literacy Program to Increases Students' Reading Motivation

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Summary of project

This study proposes to help fourth grade students who do not read

enough as compared to their peers due to the low motivation. In order to deal

with the low motivation as an instructional problem and improve the students'

reading performance, three graduate students of the University of Texas at San

Antonio intended to design and develop software that is called *My Story* and

teachers will be involved as facilitators. The hypothesis is: software increases

learning motivation through self-directed with the technology involvement.

Furthermore, the objectives of the project consider the standards of state of

Texas for the fourth grade, which requires the fourth graders to pass the

comprehensive exam. Additionally, constructivism and reinforcement theories

will be merged in his study since the students will learn the applied software

using their prior knowledge and will be reinforced to meet the objectives of this

study for more effective outcomes and successful learning achievement. Since

this project intends to solve the problem of low motivation in reading, our

development team believes that the *My Story* software will motivate all of the

fourth graders, due to the motivating and reinforcing factors that fit the

individual differences for ten year-old students. Based on that, we expect that

the students will like to read more and involve effectively in reading class in the

future.

Intellectual Merit

Through reading literature the researchers investigated the effectiveness of multimedia-based, post-reading activities on 4th grade students' reading motivation and reading comprehension abilities. The *My Story* software program will enhance motivation, engagement, as well as interest when students utilize multimedia programs as well as to improve skills and knowledge. Through audio and video technologies content and stimulated learning are introduced. Likewise it also increases the interest attention, as well as curiosity among students. In this project, test and exploration will be done through formative and summative assessments data collection.

Broader Impacts

This program will leave positive effects in a society since reading is one of the most important acquired skills that leads to a successful and developed society. Continuing with that thought, reading is the key to the doors of various sciences and knowledge is a complementary part of our personal and professional lives. Directly stated, the integration of a technology software helps in shaping student attitudes towards reading. Students demonstrate greater concentration in reading activities that utilizes technology than in the conventional method to class because students at present are fundamentally motivated to using software applications. This kind of technology helps in

enhancing literacy developments; it has a positive impact on reading motivation, it provides greater access to information, it supports the learning of the students, it motivates the students, and enhances their self-esteem in general. The significant improvements in performance for students participating in this program can change the course of learning, opening the door for later learning and success in life. Educators, who are seeking practices that will allow for students to reach their highest academic potential may benefits from the implementation of this program.

Introduction

The existence of technologies has facilitated our lives in a variety of demands and aspects, including learning. One of the most significant uses of technology is enhancing learning in a fun and easy way, especially at a young age due to its positive impacts, such as motivating learners to discover and gain new knowledge. Nowadays, most of elementary students are able to use some electronic devices with the ability of downloading apps and playing games (Prensky, 2001). In fact, readiness for acquiring new knowledge might be generated from merging the use of technology with learning in or outside the classroom. Moreover, Reading and motivation are two fundamental pillars that education is built upon, especially from first to fourth grades (Edmunds and Tancock, 2003). However, students are different in getting motivated to read,

while some need visual experiences others respond to auditory cues and others need hands-on familiarity (Lally, 2001). Given these circumstances, the need of creating software that fits all the learners is a must. This paper proposes a study about the fourth graders using specific software that will be designed especially for them to be more motivated in reading in the hopes that this will increase their performance through self-directed learning. Additionally, this paper will explain the relevance of constructivism theory to this idea as well as mention some possible negative impacts of technology in learning.

TimeLine

In order to create this program in an organized manner, the ADDIE model will be applied through the steps (Peterson, 2003). The program will run completely for approximately two years beginning with analysis of needs and tasks and continuing through the complete evaluation process. Below is the estimated timeline in the format of the ADDIE phases to show exactly what we are doing and the time frame in which we plan to complete the entire program. The first four months will be spent in preparation of the program. We will also start creating the actual software program over the second four months. Then the material will be shown to the stakeholders and will be evaluated throughout the entire two years in order to make sure the program is being implemented correctly and that the goals and objectives are being met. (See Table 1) **The**

developers will consider the motivation theory through the development stage for more support to the program software design. The development of the program needs four months to be completed and approved to implement. School administration, teachers, and 4th grade students will be part of implementing this program. Teachers involved in this program will be trained to use the program to apply it effectively in the classroom. In the implantation stage the role of the teacher will be facilitator to help students use and learn using the software. After that the evaluation will take place based on Boulmetis & Dutwin's evaluation design plan (2005).The purpose of doing this evaluation is to determine whether the goals of this program were achieved.

Table 1 *My Story* **Software Timeline**

Fall 2013 Aug 2- Dec 25	Need analysis and task analysis
	- Collect the Information.
	- Analyze the goals.
	- Determine material that must be used and learners' capabilities and needs.
Spring 2013 Jan 15- Apr 30	Design:
	- Research how to motivate students to read more based on motivation theory and how to apply it on the software.
	- Define objectives.

	- Brainstorm the interface of program.

Fall 2014
 	
Aug 2- Dec 25
	Development:
	
	  - Create the software program based on learning Objectives and theories.
	
	  - Present the program to stockholders.
	
	  - Gather feedback from stockholders.

Spring 2014
 	
Jan 15- Apr 30
	Implementation:
	
	  - Revise the program.
	
	  - Implement the program to test the validity.

Spring 2014
 	
May 1-july 1
	Evaluation:
	
	  - Assess whether goals or objectives are met.
	
	  - Conduct formative and summative assessment to improve the program using data collection: test and survey.

Review of literature

 Needs Analysis

Motivation can be referred to as a theoretical construct used to explain

the initiation, direction, intensity, persistence and quality of goal directed

behavior (Deci and Ryan, 1985). Additionally, over the past 20 years studies

have shown that students' motivation is a major concern of many instructors,

and numerous classroom teachers admitted that motivation is at the root of a

large number of the complications they face in educating children nowadays (Nick, Nicolas, & Les, 2012). Research also has shown that fourth grade students are currently experiencing low motivation levels in reading (Gambrell, 1996; Guthrie, 2007; Wigfield, 1997). Indeed, not being motivated to read decreases the amount of reading a student does, which is considered detrimental since the amount of reading influences a student's achievement and comprehension. Conversely, spending more time reading generates better readers than those who do not. Therefore, motivation exists in children with different levels and types, which are intrinsic and extrinsic motivations. On one hand, the intrinsic is defined as the benefits that a child receives from reading on their own, and it is influenced by internal factors such as a real interest in the subject being taught or the need to feel a personal skill at something (Deci and Ryan, 1985). On the other hand, the extrinsic motivation is affected by other people and factors beyond one's self, and it is acquired after reading through an external source, such as grades, competition, and recognition (Deci and Ryan, 1985). According to Wigfield (1997), if the children have the intrinsic motivation to read, they will read more and understand more of what is read. Guthrie (2007) categorized the main internal motivations, including: interest, perceived control, self-efficacy, involvement, and collaboration. Achievement is always linked to motivation. The major determinants of motivation and task

value are self-perceived competence and task value (Gambrell, 1996). The constraints that designers should consider is that some students may feel pressured and frustrated because of problem with the software design or information searching and the problem of time shortages (Yang and Che,2007). The main goal of the program is increasing students' motivation to improve reading fluency and comprehension. Moreover, the performance objective is the following: after giving the *My Story* software program, the students will get motivated more to read stories from their interest. In order to assess their performance, they will answer the comprehension questions game. For more effective implementation, well organized program and achieved outcomes, ADDIE model will be applied through all stages.

Task Analysis

Based on Gagne's (2005) nine events of instruction task analysis for one situated outcome, which given *My Story* software students will get motivated to read a story and answer the regarding game questions. Using these events provide the important conditions for learning and serve as the basis for designing instruction (See *Table 2)*

Table 2 Gagne Nine Events

Event of Instruction	Lesson Example
1. Gaining Attention	The instructor will show the students a YouTube video of instructional games related to reading content. Shows them visual images of stories and avatars that are captured from the software.
2. Informing the Learner of the Objective	The instructor informs the students that he/she going to show them how to use program software called *My Story* through a PowerPoint presentation.
3. Stimulating Recall of Prior Learning	The instructor will ask: who remembers the first step that was taken while reading a story on the computer?
4. Presenting the Stimulus	The instructor utilizes some methods including PowerPoint and lecture The instructor will install software on their computers.
5. Providing Learner Guidance	The instructor demonstrates how to use *My Story* tools to read the text, add personal pictures , use sounds, vocabulary definition ,etc.
6. Eliciting Performance	The instructor have students collaborate with their peers to use the software
7. Giving Feedback	Provide immediate feedback of students' performance
8. Assessing Performance	The comprehensive questions game will allow students

	to see their scores.
9. Enhancing Retention and Transfer	Teacher asks learners to answer the comprehension question of the story they have read. Teacher also charges learner with teaching another learner how to use

The Design of Program

My Story **software**

Motivating students to read and to be engaged can be challenging, especially during the elementary years when children are more playful and therefore easily get distracted and bored (Guthrie, 2007). However, because of the innovation of technology and software that are used inside the classrooms, it seems that children are becoming more motivated to learn, partly because it is interactive, fun, and most of all informative. This is the reason why the designers have become interested in creating *My Story* software based on past studies to examine the influence of similar technology in motivating learners especially in this age. Adolescent literacy is referring to the skills that learner in Grade 4-12 require to be able to successfully read (Brophy, 2006). There have been new policy reports that stress the requirement to enhance students' reading vocabulary as well as comprehension skills to achieve the improved literacy demands that start in Grade 4 (Drummond, Chinen, Duncan, Miller, 2011).

Recent study conducted by Katia Ciampa assesses an intervention made to enhance elementary students' motivation in reading vocabulary as well as comprehension. The study indicted *Online Electronic Storybooks* integration in reading classes which provides students with oral reading texts, comprehensive questions that also provides immediate feedback. Research-based evidence indicated that this kind of technology can impact the potential success and motivate students to read (Ciampa, 2012). The study explored the effectiveness of online eBooks and multimedia-based, post-reading activities on students' reading motivation and reading comprehension abilities. Eight students were given ten 25-minute sessions with the software programs over 15 weeks. Pre-program, interim-program, and post-program qualitative data were collected from students, teachers, and parents through questionnaires, interviews, provincial report cards, observations, and field notes. The results suggest the promise of online eBooks in supporting students with reading difficulties and low motivation (Ciampa, 2012). It is very nice to see and know that truly the software and online eBooks provide learners a positive effect. It is definitely something designer should consider. The findings and the method of the study is helpful to guide and improve this project.

For this instructional problem, a software based literacy program will be designed to motivate the students to read. The software will feature interactivity,

easiness and savvy in view of the fact that it will accessible for learners at

school and likewise in their house through the school distinct assignment. In

making software, there will be some menu bars included which is registration,

avatar selection, stories and questions game as shown in figure1. To begin,

students will be required to make their personal accounts where they are able to

write their names; then they should place their pictures as avatar with the

options of being able to change it if they want to, because students will be part

of the story since they will put their personal images as the main characters of

the stories (see figure 2).

There are a variety of stories that are suitable for fourth grade students

and based on the Texas Essential Knowledge and Skills (TEKS) from different

aspects such as intellectual, social and scientific aspects. The content is designed

and categorized to different levels beginning with easy in the first month, and

ends with the advanced level by the end of the semester. The stories will be

chosen monthly based on self-selection, choosing a story based upon interests

motivates a student to read more and encourages independent reading practice

and improves reading skills (Jerry,Johns and Lunt,1975) (see Figure 3). The

stories will have different, vivid, and creative graphics for assisting reading

comprehension to entice students read and to facilitate students to read and to

assist learners to learn logical reasoning during the time of reading. Moreover, it

will include options such as audio that helps the student hear the hard words.

Through this feature, the student is able to connect the visual word to the audible

word with the definition to better comprehend and memorize or learn new

vocabulary words. This stage has different feature to motivate and simulate

students such as digital equivalent of animation, audio and pictures and

dictionary (see figure 4).

 In addition, the software includes audio books that allow the users to

listen to the stories, which also help students with reading difficulties. In this

stage the students can control the story such as repeating and quitting, the needs

of this feature is because of the individual differences in which some need to

read more than once or need more time to read (Burby, 2004). The software

allows students to add their comments after reading the story. This feedback

gives student reinforcement through their peers and encourages self-efficiency

of expectation in students according to motivation theory which applies to

student's interaction (Tollefson, 2000). After reading the story, the students will

press "Next" to play comprehensive questions game about the main idea and

new vocabulary that provides immediate feedback for responses. This kind of

reinforcement motivates and encourages students to read more stories. After

finishing the game the score will collected as a stare for each story. The stars

will be collected to measure the amount of stories at the end of the session. (See Figure 5)

 Cook and Finlayson agree that children with low motivation profit the use of technology can offer a safe educational context for their self-directed work (Tumbas, 2005, p.5) . Also, the use of technology for students is well grounded in legislation and professional standards" (Tomei, 274).

Evaluation plan

The evaluation of this program will be conducted based on Boulmetis & Dutwin's evaluation design (2005).The Purpose of doing this evaluation is to determine whether the goals of this program were achieved. In addition, the evaluation plan will help to evaluate the achievement and make a decision if the program is worth to repeat. Also, it helps to identify opportunities for future improvements of the program. This all can be done by using formative and summative evaluations during and after the instructional activities.

Evaluation questions

1. Do the students motivated more by using *my story* software program?

2. Do the students score increased by using the software program?

3. Do the students read more stories using the software program?

Objectives

1. Students will be motivated more to read by using "my story" software.

2. Students will score higher on comprehensive questions game.

3. Students will read more stories using the program software.

Students will be motivated to read because they are the main character of the story. They will be excited to know about themselves and to be able to predict the end of the story. They also will be able to tell their parents that they are a main character in a story and about what they did in the story. Moreover, students will score high on comprehensive questions game because the game gives them automatic feedback. If they answer the questions, the program will give them feedback, either try again or a star for answering correctly. Students also will read more because each month the students have many stories to read. After they finish each story, students can see the amount of stars they have earned and the amount of stories they have read.

Outcomes:

1. Eighty percent of students participating in the program will have higher   motivation score.

2. Eighty percent of students participating in the program will score 70% or higher on   the game test.

3.Eighty percent of students participating in the program will have

higher interaction with the software program through amount of

stories read and time spend

Formative Evaluation

During the program Formative evaluations will be utilized. The

instructors can observe the students' performance through the program in order

to improve instructional program. After reading the each story, students will

press "Next" to answer some comprehensive questions about the main idea and

new vocabulary that provides immediate feedback for responses and grades.

Educators will ask comprehension questions and collect data of games test to

guide improvements in learning context to increase students' engagement in the

learning process.

Summative Evaluation

Students will be surveyed at the end of the intervention to figure out their

satisfaction with the program (see appendix). The software's database will

compile the following data for each student: grades, standardized games scores,

reading amounts of the various activities, and the results of an informal

assessment by the instructor. Progress reports at the end of semester (See Table 3).

The Table below shows Boulmetis & Dutwin's Evaluation Design Format

EXHIBIT 1.1 Evaluation Design Format.

Project _____

Focus (formative, summative, or both)

Evaluation Question	Activities to Observe	Data Source	Population Sample Design	Data Collection	Responsibility	Data Analysis	Audience

The elements of the model are evaluation questions, activities to observe, data source, population sample design, data collection, responsibility, data analysis, and audiences used for the evaluation plan of the program "*MY Story*". Table 3 shows the evaluation plan.

Table 3 Evaluation Plan

Evaluation questions	Activities to observe	Data source	Population Sample design	Data collection	Responsibility	Data analysis	Audiences
Do the students motivated more using "my story software program?	Game test Surveys	Survey Test	4th grade students	Survey	Evaluator Instructor	Test Surveys	All stakeholders
Do the students score increased by using the software program?	Game	Test	4th grade students	Game test stars	Evaluator Instructor	Test	All stakeholders
Do the students read more stories using the software program?	Game test surveys	Test	4th grade students	The amount of stars	Evaluator Instructor	scores	All stakeholders

Qualification

Amal Alshehri- is a graduate student majoring in Instructional

Technology (IST) of the University of Texas at San Antonio. She had her

Bachelor degree in Art including graphic design and experienced teaching Art

for one year in a secondary school in Saudi Arabia. During studying in IST

program, Amal applied multiple learning theories in a number of projects, which

made her feel confident to involve in this project effectively. Additionally, her

role in this project is designer.

Asma Alshaya- is qualified to share in designing this project since her

Bachelor degree was in the Computer Since from Saudi Arabia and have four

years experience in software programing. She earned of completion for PHP and

C++ Programing languages, 2009. She also has designed her graduation project,

which was a Web Site about the Saudi Blood Bank. Asma also applied multiple

learning theories in a number of projects. Asma is a graduate student at the

University of Texas at San Antonio, who expected to graduate in (Fall 2013).

Her role in the project is a developer.

Abrar Ajinah- is currently a graduate student in the University of Texas

at San Antonio. She had her Bachelor degree in Education, and has four months

experience in teaching high school and earned a CDL and other workshops

certifications regarding computers. She finds herself able to be an effective part

of the project since she had already taken the Development of Instructional Design in Fall 2012 which concerned in learning about HTML programing language and Java script .Based on that she designed a WebQuest about Social Justice in Education including video, audio, quiz, and content about curriculum. Her role in the project was the evaluatin pland developer.

 If this program received enough financial support, it will help students to be better readers. That also will encourage the designers of program to develop and create interesting instructional tools. This program motivates fourth grade students to read in interesting ways, and it can have some positive impact on the student's attitude towards the self-esteem, learning and even self-confidence. In essence, such a scenario is evident by the fact that technology has had to improve the attendance and thus, decrease in the dropouts with such constructive influence on the self-determination of students and the feelings of dependability for their learning (Stubbs, 2007). Additionally, it improves the fourth grade students' attitudes towards learning and also on the self-concept. The students also will be remarkably effective when they use their technology, and this is quite due to the designs of software, the roles of teachers, and the level of the right to use technology.

Conclusion

A low level of motivation in reading in the fourth grade is a problem that needs to be addressed. Solving this particular instructional complexity may occur when technological tools intervened since children nowadays can easily get motivated by the positive features of these technologies such as games, videos, and images. For helping the students overcome this problem three graduate students propose a study as a solution. Throughout this proposal, a web-based literacy program called *My Story* merged technology to some learning theories, which are the motivational theory and the constructivism. Moreover, the program will design based on AADIE model that starting with analyzing the needs and task based on Gagne's nine events, and ending up with the evaluation plan that contains both formative and summative methods. During the ADDIE model, the designers consider the timeline of their progress to have every phase done at the time that they are planning.

Furthermore, using *My Story* program may enhance student's motivation in reading by fostering their curiosity when it becomes fun and memorable. All the elements of my software help enforce and implement confidence in the daily reading of fourth graders, decreasing low motivation. Children will easily achieve reading tasks that also entertain them and give them a sense of achievement. Instructors and researchers of the program will also easily obtain

grades, monitor progress and reward children for their efforts. Peers will easily communicate with other students as well. The reading software gives everyone success improving reading performance among fourth grade considering the motivational element is critical to students' future academic success. For this instructional problem, learning software was created that includes stories, questions, and games to help the fourth graders overcome and get high grades in the reading achievement tests. Students will be interested in reading, and the teacher can easily assess and monitor the students' progress and reading levels through this program. When this software is thoroughly implemented, it is expected that the reading habits of fourth grade students will greatly improve and the concept of reading will appear less threatening. The additional purpose is to teach students to acquire and utilize proper reading skills.

Appendix A: <u>Design My Story Software Programe (Using Power Point)</u>

Figure 1

Figure 2

Figure 3

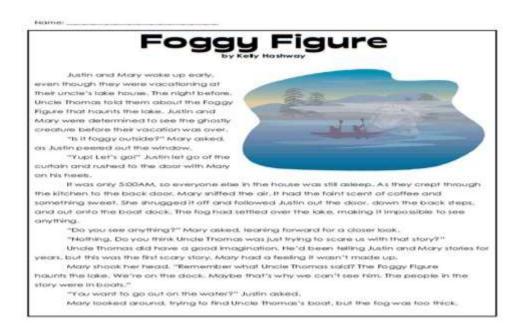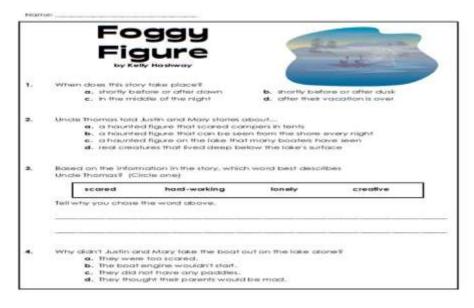Figure 4

Figure 5

Figure 6

Appendix B: <u>4th Grade Sample Comprehensive Questions in Reading</u>

(Source: http://www.superteacherworksheets.com/

Appendix C: <u>Student Learning Survey: 4th grade My Story Software program</u>

Reference:

<u>Student Learning Survey: 4th grade My Story Software program</u>

Student Name: -- Grade: ----------------------

Teacher: ---

Circle your response to the following questions.

1. I like to read about new things.

    a) Very different from me.   b) A little different from me.

    c) A little like me.   d) A lot like me.

2. I am a good reader.

    a) Very different from me.   b) A little different from me.

    c) A little like me.   d) A lot like me.

3. I like being the best at reading.

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a) Very different from me.   b) A little different from me.

c) A little like me.   d) A lot like me.

4. MYSTORY 's stories are fun to read.

a) Very different from me.   b) A little different from me.

c) A little like me.   d) A lot like me.

5. I am happy when someone recognizes my reading.

a) Very different from me.   b) A little different from me.

c) A little like me.   d) A lot like me.

6. I like MY STORY software program when I am part of the story.

a) Very different from me.   b) A little different from me.

c) A little like me.   d) A lot like me.

7. I know that I will continue reading by using this program.

a) Very different from me.   b) A little different from me.

c) A little like me.   d) A lot like me.

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