

# Development of Fun Learning Application for Preschoolers

Leilani A. Gonzales

**Abstract:** *The researcher of this study proposed a game system which is called as Fun Learning to provide a fun and informative game for children. The study will provide a computer game, wherein the preschool students can enjoy while learning. It will aid to lessen the teachers' visual aids, it will keep the students' interests in learning, enhance and transform their educational experience, exercise and challenge their critical thinking through different mind games, and utilize the students' growing interest in technology in a beneficial way. Rapid Application Development was utilized to create the application. Direct observation and interview were done in the Olympia Daycare Center to have a clear understanding on what is the scenario in a preschool classroom. The program must be uploaded in android system such as phones, tablets or any other electronic gadgets so that kids can bring it anywhere for learning and exploring. Through the change of technology, utilizing the Fun Learning application will be of great help to students and teachers.*

**Keywords:** *Rapid Application Development, technology, preschooler.*

## I. INTRODUCTION

Technology has indeed become the present trend for people regardless of their age. People nowadays find leisure through their electronic devices such as smart phones, tablets, laptops and more. They do their everyday task using computers and cellphones. That they could not live a day without these devices. Even a child of a very young age can easily adapt the interface of the games provided by various game developers through mobile applications. Due to this progress in people's lifestyle, young people tend to get bored easily when they are asked to do a task that does not require any of these gadgets especially when they prefer to play on their electronic gadgets or put their attention on interactive games instead.

Children nowadays are motivated to play and explore, and play is one of the main ways they learn [14]. They have an inherent need to exercise their emerging abilities and to make sense of their experiences. Play provides opportunities for exploration, experimentation, and manipulations that are essential for understanding basic concepts and constructing knowledge. If materials for play and learning, including digital games, are designed to serve children's interests and abilities, their desire to play and explore, and their internal need to know, young learners will be more likely to develop and strengthen their initiative, curiosity, attention, self-direction, industriousness, competence, and love of learning [12].

The researcher of this study proposed a game system which is called as Fun Learning to provide a fun and informative game for children.

The purpose of this proposed educational game system is to maintain the orientation of preschoolers as they enter the school since they are still playful and might refuse to pay attention to the lessons. Fun learning has different kinds of interactive activities made for preschoolers. The mentioned education game contains interactive programs which acquire interesting objects and topics for the aspired audience such as shapes, numbers, letters, and colors, parts of the body, kinds of sense, and various mind games.

The chosen pilot area for this proposed educational game system is the Olympia Day Care Center. This program can help the students to enjoy and have fun as they learn at the same time in school. The target audience age ranges from four up to six years old since the graphics and objects used for the proposed educational game are made suitable and intended to obtain the interest of the children aging within the given range.

One of the daily challenges that the teachers from Olympia Day Care is keeping the children's attention and interests on the lessons. It is indeed a difficult task to deal with the student's mood especially when they prefer to play rather than to pay attention on what is being discussed by the teacher. Olympia Day Care Center is not the only one to experience this kind of dilemma, this lack of understanding by not listening and not paying enough attention to their teacher's discussion might occur in other schools [4].

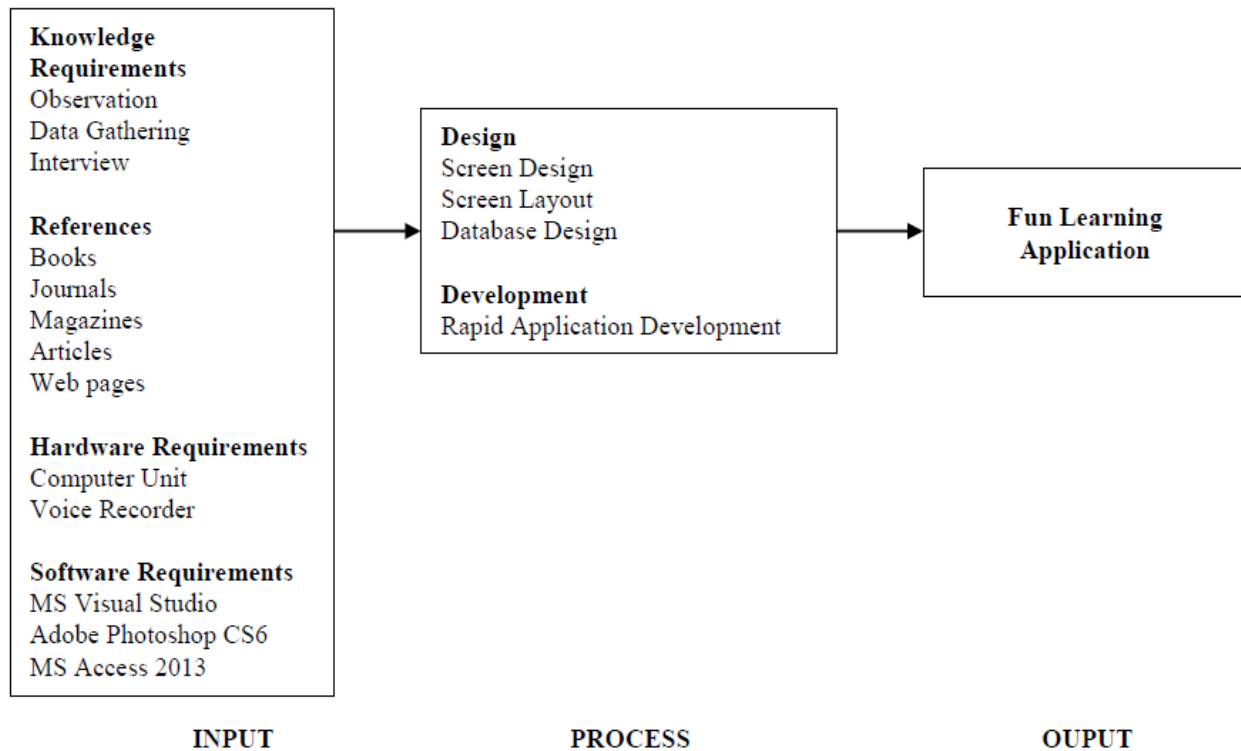
In this scenario, the preschoolers' chance to learn are halted or disturbed which leads to poor performance in school. The teachers will be affected by experiencing stress and anxiousness on the preschoolers' low performance. The output of the research might revise this situation through Educational Gaming. Based on the searched references it can provide the learners with rich worlds and complex narratives that could enhance and transform their educational experience [3]. This system includes shapes, numbers, letters, and colors, parts of the body, kinds of sense, and various mind games that the children can play and learn from.

The study will provide a computer game, which is the Fun Learning, wherein the students can enjoy while learning. Specifically it will aid to: (1) lessen the teachers' visual aids while teaching; (2) keep the students' interests in learning; (3) enhance and transform the students' educational experience; (4) exercise and challenge the students' critical thinking through different mind games; and (5) utilize the students' growing interest in technology in a beneficial way.

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**Figure 1. Conceptual Model**

The Fun Learning Application development plans to make a system that can help the students on their learning through the use of computers with learning games for schools. Figure 1 shows the conceptual model on how to develop the Fun Learning Application, data will be gathered through researches, studies, and online references that are related to the topic. The references can be found from books, journals, magazines, articles, and web pages. A computer unit and voice recorder are the hardware equipment's used and Microsoft Visual Studio, Adobe Photoshop CS6 and Microsoft Access2013 helped them to work it out. Screen Design was made to catch the attention and interest of the end-users as strategy for the preschoolers, minions will be used as a design and for the sound of the application.

In today's high-tech world, it is clear that the more comfortable your child is with technology, the better equipped he will stay on top of the fast moving tech world [6]. Educational videogames can provide learners with rich worlds and complex narratives that both enhance and transform their educational experience. Harnessing this potential calls for understanding the principles underlying successful games, and how to apply them in classroom [11].

The fact that many video games can offer an enriching, even educational experience for children in today's high-tech world, it is clear that the more comfortable your child is with technology, the better equipped he will be to stay on top of the fast-moving tech world. But what can a parent do to make gaming an enriching and worthwhile experience. There were possible chance that kids can be smarter in playing games and there were also a chance that, they will become violent and lazy. Being smart while playing games is when you played games that is hard and mind games can build your critical thinking and logic [6].

Roe and Mujis studies showed that heavy use of computer games is associated with negative rather than positive outcomes in terms of academic achievement, self-

esteem and sociability [16]. A LISREL model is tested which assesses the contribution which school-related factors, in interaction with gender and socioeconomic status, make in accounting for the varying amounts of time that children spend playing computer games.

Preschoolers focus on absorbing the world around them. Their minds are developing problem solving skills and using language to negotiate. They are also learning how to coordinate their bodies to do things. Preschool aged children naturally to have great imaginations. Kids practice patience in taking turns and learn to accept the workout. Physical games help sharpen the brains motor coordination [1].

Interactive learning is a big impact to those who will create a program to preschool. Learning with such interactive design can help to attract kids. For this kind of program, they can learn more about Science and Health which is much needed by children [15].

Using games for assessment is about more than a tracking point [17]. The past years have seen a lot of growth in the digital games and assessment field, developing data collection engines that use sophisticated tools to measure student learning and provide teachers with targeted feedback. But one of the most common misconceptions they have run across is that all good learning games must assess learners within the game. The truth is that assessment happens around a game more often that it happens inside the game, and teachers must still design and provide authentic, useful assessment tasks for students. Game-based learning is more than just picking the right game for your classroom.

At this point in the evolution of education, it is critical that we expand our conception of literacy to include more than just words [7]. In fact, we may need to reimagine how we nurture early literacy to make sure we provide a foundation not only for reading.

Schools today contribute to our massive inequality by providing the rich with a good education and a poor test-prep to fit them for future service jobs.

## II. METHODS

The researcher utilized the Rapid Application Development (RAD) to create the application. In general, RAD approaches to software development put less emphasis on planning tasks and more emphasis on development. It is especially well suited in developing software that is driven by user interface requirements [8].

The locale of the study were the preschool students of the Olympia Daycare Center ages four to six. Direct observation and questionnaires were used to obtain data. Actual observations in the classroom were conducted to see the present condition of the students as well as the teachers. Conducting an observation in the area will give the

researchers the definite impression on what's happening in the classroom.

## III. RESULTS AND DISCUSSION

Figure 2, shows the context diagram of the system, the students will use the program to help them increase their knowledge through this system they can choose the challenges, enjoy different videos and get their score in every games they play in different categories. Teachers are guiding them how to use the program and introduce them the use of every module and forms inside the said system. They will be trained by the developers of the system on how the program will run, what students can learn about the application and in what way this program may help the teachers get their work easily and get their work easily and get their students attention and interests while learning.

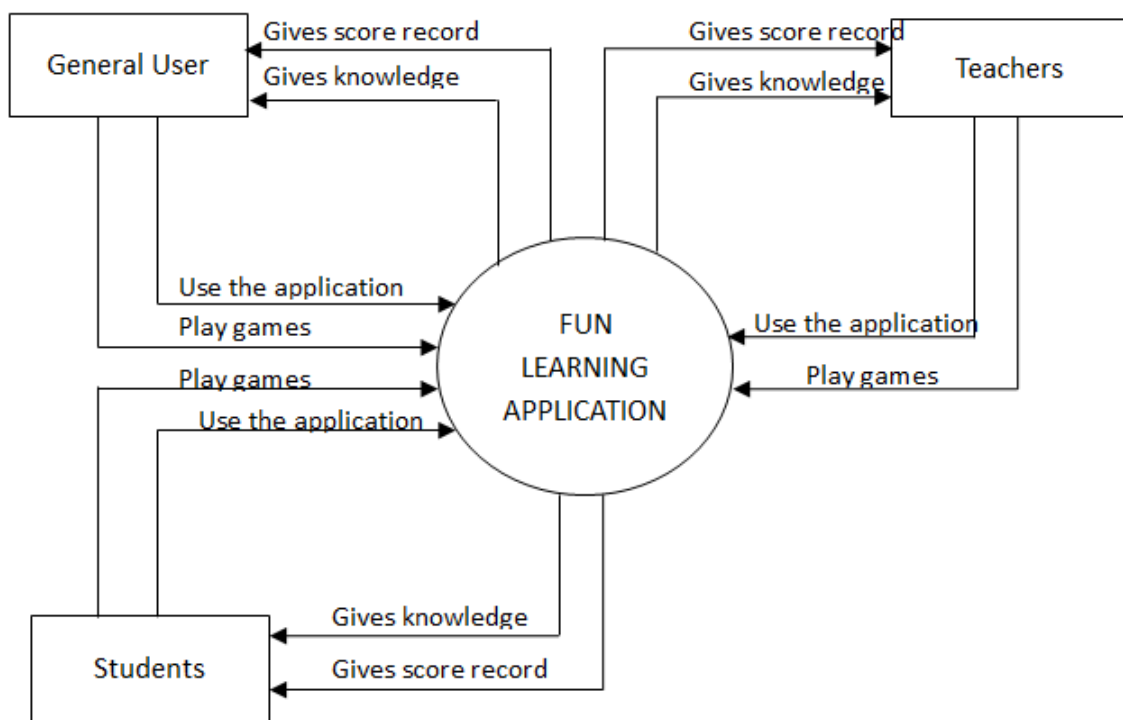


Figure 2. Context Diagram

Primary users of the application are the students. They are the one who will play and enjoy the program, for they are the ones who is suitable for learning and exploring every module inside the Fun Learning Application.

The teachers are the secondary users. They need to be familiar with the program because they are the one who need to control, operate, and guide the students in using the application. They are the one who will first use the program for they need to familiarize their selves before letting their students use it.

The administration is the one who assess the program for the primary and secondary users must know the flow of the program and guide them into every module of the said system. The guidance or school council can also use the application as entrance activity for incoming preschool students. The application has an automatic recorded scores placed in the database. Results on each activity are recorded automatically.

The Fun Learning Application have six modules to explore and enjoy while learning. They can choose from these Activities, Challenges, Draw and Color, Mind Games, Videos, and Scores.



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Figure 3. Start Page and Main Menu

As shown in Figure 3, challenges that contains entertaining games for preschoolers. It includes the Shoot Them game, where they need to shoot a banana to the evil purples before they can get near on the minion. The other one is the Maze, which is an ordinary game like others that you have played. Draw and Paint can be enjoyed by following the illustrated steps, connect is to draw by connecting lines between the random arrangement of numbered dots to produces a design and a color for users to choose if they want to put color on the image. Mind Games need to use the different senses so as to exercise and challenge the students' critical thinking. Videos function for students to watch and enjoy different kinds of video. And lastly the score module is where all the taken activities, games and exercises are recorded as their score in every kinds of game they play inside the Fun Learning Application.

Table 1 Survey Result

Software Criteria	Highly Effective	Effective	Less Effective	Moderate	Not Effective	Weighted Mean	Rank
	5	4	3	2	1		
<b>Efficiency</b> – the system is well done and easy to use	16 64%	8 32%	1 4%	0 0%	0 0%	4.60	3.5
<b>Functionality</b> – the system provides what the user needs	17 68%	7 28%	1 4%	0 0%	0 0%	4.64	2
<b>Reliability</b> – user can trust the system from functionality and security aspects	15 60%	8 32%	2 8%	0 0%	0 0%	4.52	8
<b>Reusability</b> – the design should reuse internal and external components and behaviors. This can reduce the need for users to rethink and remember	16 64%	7 28%	2 8%	0 0%	0 0%	4.56	5.5
<b>Modification</b> – the system can be enhanced	16 64%	8 32%	1 4%	0 0%	0 0%	4.60	3.5
<b>Effectiveness</b> – the system is very attractive to the users	14 56%	10 40%	1 4%	0 0%	0 0%	4.52	8
<b>Portability</b> – the system can be used anywhere	13 52%	10 40%	2 8%	0 0%	0 0%	4.32	10
<b>Error Handling</b> – Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action	15 60%	8 32%	2 8%	0 0%	0 0%	4.52	8
<b>Flexibility</b> – speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions	15 60%	9 36%	1 4%	0 0%	0 0%	4.56	5.5
<b>Correctness</b> – the system provides good source of information	19 76%	5 20%	1 4%	0 0%	0 0%	4.72	1



Table 1 shows the survey result of the respondents in utilizing the application. With regards to efficiency, 64% of the respondents says that the software is highly effective and 32% says that it is effective, meaning that the system is well done and easy to use. With regards to functionality, 68% of the respondents says that that the software is highly effective and 28% says that it is effective, meaning that the software provides the user what their needs. With regards to reliability, 60% of the respondents says that that the software is highly effective and 32% says that it is effective, meaning that the system can be used anytime. With regards to reusability, 64% of the respondents says that that the software is highly effective and 28% says that it is effective, meaning that the system can be used by all. With regards to modification, 64% of the respondents says that that the software is highly effective and 32% says that it is effective, meaning that the software can be enhanced. With regards to effectiveness, 56% of the respondents says that that the software is highly effective and 40% says that it is effective, meaning that the systems is very attractive to the user. With regards to portability, 52% of the respondents says that that the software is highly effective and 40% says that it is effective, meaning that the software can be used anywhere. With regards to error handling, 60% of the respondents says that that the software is highly effective and 32% says that it is effective, meaning that the system is error free upon using. With regards to flexibility, 60% of the respondents says that that the software is highly effective and 36% says that it is effective, meaning that the software can be enhanced in a given period of time. And with regards to correctness, 76% of the respondents says that that the software is highly effective and 20% says that it is effective, meaning that the system provides good source of information.

Based on the above software criteria, correctness ranked 1 with a weighted mean of 4.72, followed by functionality with a weighted mean 4.64. And the criteria which are least favored are portability with a weighted mean of 4.32, followed by reliability, effectiveness, and error handling with an equal weighted mean of 4.52

As the testing of the program was done at the Olympia Daycare Center, the researcher observed that the students were able to learn and most of them have and have their full attention on the activities using the Fun Learning Application. The teachers also enjoyed the activities while they are able to teach the lesson for the day. Thus they are not stressed and anxious about their students' performance. Therefore this study was able to change the situation in a preschool classroom. Based on the searched references it can provide the learners with rich worlds and complex narratives that could enhance and transform their educational experience. This system includes shapes, numbers, letters, and colors, parts of the body, kinds of sense, and various mind games that the children can play and learn from.

The researcher was also able to interview the teachers and they commented that the application is really of great help to them because they can easily manage to give lessons to their students. The interview with the kids is fun as what they are telling the researchers that they have enjoyed and learned new things by utilizing the application.

#### IV. CONCLUSIONS

Through the observation and interview done by the researcher it is evident that this study were able to provide a computer game, wherein the students can enjoy while learning. It also aids to lessen the teachers' visual aids while teaching, keeps the students' interests in learning, enhance and transform the students' educational experience, exercise and challenge the students' critical thinking through different mind games, and utilize the students' growing interest in technology in a beneficial way.

#### DIRECTIONS

In the light of the above findings and conclusions, the following recommendation are hereby endorsed. The Fun Learning Application can be used by the preschool teachers for them to keep their students' attention through learning their lessons and to keep their interests on their topic. The system can also serve as a visual aid for the teachers. Thus the preschoolers should utilize the application for growing interest in technology in a beneficial way. The application can be modified and upgraded by adding features such as reading subjects so that the students will be able to learn comprehension and mathematics for numbers and counting.

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