Android Game for Typing Skill Evaluation

Pranadya Bagus Imansyah[a,1,*], Aji Prasetya Wibawa[a,2], Triyanna Widiyaningtyas[a,3]
[a] Universitas Negeri Malang, Malang, Indonesia
[1] pranadya.imansyah@gmail.com, [2] aji.prasetya.ft@um.ac.id, [3] triyannaw.ft@um.ac.id

Article Info	ABSTRACT
	As social beings, humans basically need does communication to express his wishes. As the technological progress, the developers are competing to create applications that facilitate communication relationships in both personal and group. In use, it is often found that a classic problem called 'typo' that has led to the misunderstanding in socializing. With the development of game applications based on Android, it will generate data in the form of feasibility and development typing ability of before, after, even when usage by counting the number of letters that can be solved also see the speed of words per minute users that aims to train the speed and accuracy of the type which may be impact on the ability to type in a user's social media.

I. INTRODUCTION

In this life, there are two kinds of communication, which is speak and write. Oral communication is verbal, while the writing is communication through print media. On the application of written communication is divided into two kinds, which is conventional such as letters, notes, belonging without technology while e-mail, instant messaging, social media and chat classified as a technology that enables direct communication over long distances. The growing use of technology is very influential on the style of communication, especially in the national secondary education policy on the application of technology can give impact to the quality of school education. In the technology interactions, there is often the thing that makes misunderstood (Elmunsyah, 2014). The most common error occurs is a typo. Typo resulted reader or recipient of the message mistakenly interpret a sentence that can be a fatal error. Typo resulted in a misunderstanding, even more danger again such as: loss of appreciation, affected by malware, bankruptcy and other embarrassing moments.

Many researches has done various ways to encounter this problem. Kane, Shaun K. Wobbrock, Jacob O Harniss, Mark Johnson, Kurt L. created a system called TrueKeys. The application automatically corrects typing errors, employs models of word frequency, keyboard layout, and typing error patterns to identify and correct typing mistakes (Kane, Wobbrock, Harniss, & Johnson, 2008). Used non-interactively, the TrueKeys algorithm performs better than several common spell checkers. Used interactively, TrueKeys significantly increases typing accuracy for both motor-impaired and non-impaired users, although it can slow users down somewhat. While Y. Huang and Y. Murphey builds multiple knowledge bases to detect and correct typos, and a neural network classifier to select good candidates for correcting typos. Experiment results show that their system outperforms state-of-art spell checking systems.

All developed systems are focused on the typo auto correction (Huang, Murphey, & Ge, 2013). None of them discussed on improving the users'typing skills. If the skill can be improved the mistake might be decreased. Thus, this research trying to find a way to train typing in order to reduce typos that occur (12/976,834, 2012, 13/366,225, 2012, 12/753,744, 2011; Gupta, 2015; Lai, Topaz, Goss, & Zhou, 2015; Nejja & Yousfi, 2015; Zhou, Jing, Huang, Liu, & Zhang, 2012).

To cope typo often happens, the developers create applications workout type, such as desktop-based typershark deluxe by PopCapGames and android as Ztype by phoboslab. Of the few games mentioned above have been carried out a study of 16 games android average has advantages: (1) Look attractive; (2) Score visible during play; and (3) Button for share your scores. While the drawbacks are: (1) Direct to the gameplay; (2) Scores are not kept; (3) There is no gradual stages; (4) There is no window. With the facts, it would be better if the game was developed by adding features. This article will discuss the features, processes and the development of a typing application, application effectiveness in reducing typing errors.
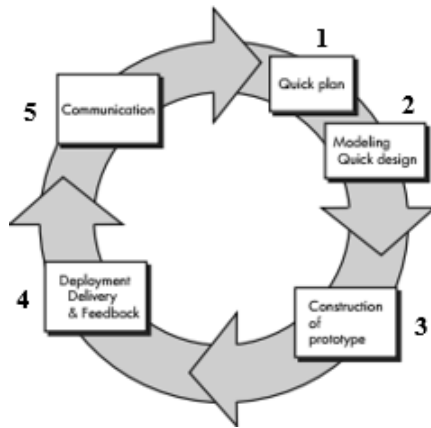
II. METHOD

Fig. 1. Prototype Method

A. Introduction of Prototype

The method used and discussed in this article is the prototype method (Pressman, 2010). The prototype allows developers to explore the user's convenience also allows users to give an opinion on the use of experience. Games should always be developed using a series of prototypes whereas safety critical control systems require a complete and analysable specification to be developed (Sommerville, 2006).

B. Discuss Stages.

Prototype method consists of five stages: (a) Quick Plan; (b) Modelling Quick Design; (c) Construction of Prototype; (d) Deployment Delivery & Feedback; and (e) Communication.

C. Describe the stages

On The first stage is Quick Plan, design and planned systems. Then in the second stage is the Quick Modelling design, realize the things that have been designed at the stage of the Quick Plan. The third stage is Construction of Prototype, unify / make appropriate software modelling stage. Then the fourth phase is Deployment Delivery & Feedback, and then release it to the public requesting user opinion. Communication is the last stage five, held talks outcome evaluation software that has been released for the improvement/further development appropriate user experience.

D. Weakness and excellence

Prototype has weaknesses excellence. Weakness contained in this method is the stage that will always be repeated every revision / prototype. While excellence is the accuracy of the workmanship in every prototypes and minimize errors that accumulate in the end.

E. Closing

Prototype method is suitable for the development of games that require the use of experience as discussed in this article.

III. RESULT AND DISCUSSION

A. Prototype 1

This is the first product to be done on developing a prototype. In accordance with the steps contained in the method, the first prototype was done.

1) Quick Plan

Done with planning materials design and gaming systems initial observations based. Figure 2 shows the main menu as a product of the first prototype.

It planned include: an overview of the background design, buttons, and character. While the planned system are: making value or score.

2) Design Quick Modelling

This is an advanced stage of the first phase. At this stage of planning is realized using Data Flow Diagram, Entity Relationship Diagram and User Interface plan.

3) Construction of a Prototype

This is the stage that makes the software as two early stage. At this stage of game development is done using unity by aligning material design and gaming systems into a coherent whole and finally ready to be released.
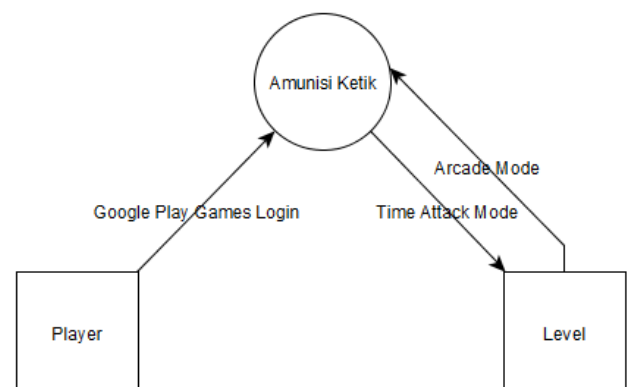

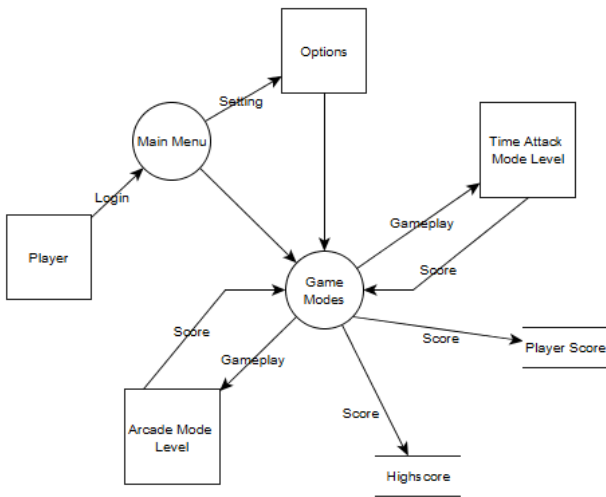Fig. 2. Main Menu

Fig. 3. Data Flow Diagram Level 0

Fig. 4. Data Flow Diagram Level 1

4) Deployment Delivery & Feedback
on (date) this stage the game is released, used and consulted after use. The polls conducted by interviewing randomly.

5) Communication;
This is the stage of discussion on the feedback given user. At this stage, the draft adjustments to the second prototype. The DFD level 2 is not discussed in this paper.

B. Prototype 2

This is a continuation of the prototype first product to enhance the things lacking. Interviews and communication on the prototype 1 is very influential on the prototype 2. Figure 5 shows the gameplay as a product of the second prototype.

1) Quick Plan;
This is to redesign the existing system design and the prototype 1.

2) Design Quick Modelling
To realize the things that exist in prototype plan quick stage 2.

3) Construction of a Prototype
To make a plan of appropriate software and modelling stage quick overall design.

4) Deployment Delivery & Feedback
To remove the game back to the same user, then prompts the user to wear and give opinions in line with experience of use.

5) Communication
Re-discussing things that need to be evaluated and maintained in subsequent products.
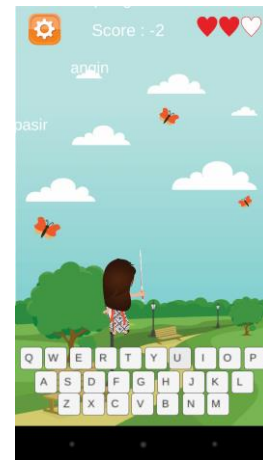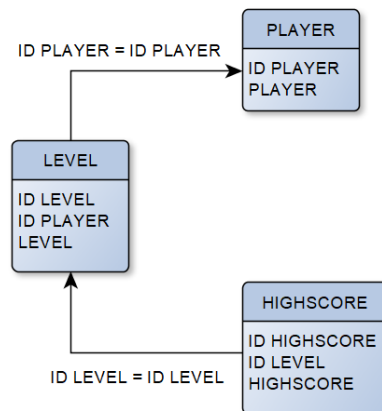

Fig. 5. Gameplay

Fig. 6. Entity Relationship Diagram

C. Prototype 3

This is a continuation of a prototype product on a prototype 3 2. Product does not eliminate things that exist in prototype 1 and 2. Figure 7 shows the final score as a product of the first prototype.
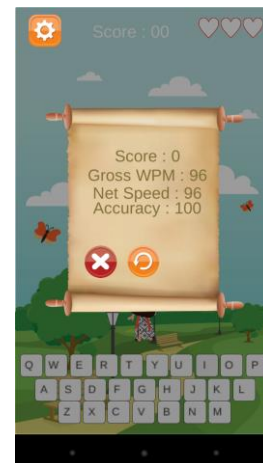

Fig. 7. Final Score

1) Quick Plan;

To refining the design and the existing system on the prototype 2, with due regard for the prototype 1.

2) Design Quick Modelling

This stage realize the things that exist in prototype stage plan quick 3.

3) Construction of a Prototype

Make a plan of appropriate software and modelling stage quick detailed design appropriate stages 1 and 2 on the prototype 3.

4) Deployment Delivery & Feedback

Remove the game back to the user, and then ask for the opinion after using the game.

5) Communication

This is the final stage of the prototype method. Prototype stopped if the user has to say in accordance with the game developed.

There is 36 people reviews this game on play store. The detail was 26 peoples rate 5 stars; 6 peoples rate 4 stars; and 4 peoples rate 3 stars.

For example, user who rates 5 stars wrote review that "the game was like typing shark deluxe (developed by PopCapGames for PC). This game can educate (retreat) students or colleger that have typo behavior.

It is true that the game idea was inspired by typing shark. However, it has been modified by providing selected characters.

User who rates 4 stars wrote review that "it is good for education that was interactive and interesting. I save 1 stars because sensitivity and respond was slow, and some word was looping for a times. For me, the exit button features is so important. Overall is very good.

The keyboard was so depend on device sensitivity. As, result, it can be improved unless the user replace his device, so developer cannot effort anymore for the sensitivity.

User who rates 3 stars wrote review that "it can be interested if you adding back sound and sound effect to the game. Set keyboard widely, so the keyboard on the game similar with android keyboard. Adding effect for word when player completed words. I hope exit button was added.

Developer has been agreed with opinion, adding more back sound, sound effect, exit button and setting keyboard widely can improves the game more interesting.

IV. CONCLUSION

After executing three phase of prototyping, the users feel happy on using this game. Therefore, this game validity is considered. For future research, the features will be developed. One of future innovation is creating multi player, adding more characters, and levels. This application will be more developed in order to improve typing skills.

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