Application of alphazzle writing for basic school children base on android

Hartatik1,*, P Pratiwi1, A Purnomo1 and R Hartono1
1Departement of Informatics Engineering, Faculty of Mathematics and Natural Sciences, Sebelas Maret University, Surakarta, Indonesia

*E-mail: hartatik@mipa.uns.ac.id

Abstract. The education process is one of the human activities in which the motivational function in the education process is to generate encouragement to do activities in education. Activity can produce changes in cognitive, psychomotor and affective students. This applies to every learning in the teaching and learning process. Student learning success is determined by several factors that support the success of the teaching-learning process, including the existence of innovative learning techniques in this case is learning to write. Android games are an alternative software that is chosen, with the reason Android tends to be used on mobile drivers such as smartphones and tablet PCs. In the current technological development, children tend to be more familiar with various gadgets, even children under five are now exposed to various gadgets. With the existence of android games and supported by attractive features, it is expected that children know computer technology, lessons for following directions and rules, problem solving and logic exercises, motoric nerve training and spatial skills, can help parents to teach their children in a fun way.

1. Introduction
One alternative to help increase interest and ability in learning to write is to use learning media in the form of software (software). Android games are an alternative software that is chosen, with the reason that Android can be used on cellphones such as smartphones and tablet PCs. In addition, Android games are chosen because making gadgets or smartphones kids prefer playing games only. Even more game applications today contain elements of violence. This can be worried that it can damage a child's mental and psychic because in childhood there is a tendency to imitate the style he sees. As well as a habit that is feared to reduce the child's interest in learning to write [1,2].

Games are often accused of negatively affecting children. In fact, the game also has a function and positive benefits for children, including: children know computer technology, lessons for review follow directions and rules, practice problem solving and logic, train motor nerves and spatial skills, establish communication between children and parents when playing Together, and also provide entertainment. In fact, for certain patients the game can be used as a healing therapy [3].

2. Experimental
The method used in this study is observation and then build applications according to user needs in the field of education. Based on the initial survey found that 80% of respondents stated that for Paud's children, kindergartens and elementary schools need applications to learn to write and read [4].

Based on the survey, the Alphazzle Application has an educational concept that is packaged in the form of an application on an Android device. In each game it has a simple way of playing so that it can
be easily understood by children in preschool age. Children only need to follow a tracing board with dots that will form letters, numbers, or words from the selected image[5]. Then there is a puzzle game from what has been learned, in addition to eliminating boredom in the learning process can also train children's memory. In this game, besides being an educational media, it can also be an entertainment medium. This game can also be used to train the child's motor and brain system. For detail the stages of this research can be seen in Figure 1.

3. Results and Discussion

Gameplay of the education games from this research are describe the concept of the Alphazzle application is an educational theme about how to write for preschoolers. In the Alphazzle application it has 2 main scenes, namely Education Scene and Learning Menu Options. With the games, players are provided with 4 (four) learning menu options, namely Alphabet, Numbers, Pictures and Puzzles. To select a player, you only need to press one of the selection buttons.

Beside that, user can be Choice of Alphabet. When choosing the alphabet learning menu, the alphabet A-Z will be displayed. Players only need to choose one of the alphabet choices by pressing it. Third option from this education games is Choice of Numbers, in this menu user choosing a number learning menu, the numbers 0-9 will be displayed. Players only need to choose one of the number choices by pressing it.

Playability is a general measure of the quality of gameplay, the ease of play can be played, and the quantity or duration of the game can be played. The following are the playability attributes in this Alphazzle application covering Satisfaction, Learning, Efficiency, Immersion, Motivation. The following are the interface results of the educational game design in Figure 2.
To design the level of the Alphazzle application, if you choose the alphabet learning menu, the A-Z alphabet will appear, the player only needs to select one of the alphabets and a tracing board appears to be played. In the learning menu the numbers will be provided with numbers 0-9, players also only need to choose one of these numbers. The game concept is the same as the previous alphabet learning menu. The following for the selected alphabet images can be seen as Figure 3 and for tracing board display can be seen as Figure 4.
For games on the picture learning menu, an image will be provided at the bottom and at the top there is a tracing board from the name of the image. For how to play it is the same as the alphabet and number learning menu.

When pressing the Play button, it will enter Level Select. Select level is the display used to select the game learning menu. There are 4 learning menus in this Alphazzle application, namely: Alphabet, Numbers, Pictures, and Puzzles. The implementation of Level Select can be seen in Figure 5.

![Figure 5. Implementation of select level.](image)

This script is used to create Splash Screen. This splash screen will start at the beginning after opening the Alphazzle game application. This Splash Screen will display the logo used by the game. The code used to create the Splash Screen can be seen in Figure 6 [7,8,9].

```csharp
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using UnityEngine.UI;

public class Loading : MonoBehaviour
{
    public Transform loadingBar;
    [SerializeField]
    private float currentTime;
    [SerializeField]
    private float speed;

    void Update()
    {
        if (currentTime < 100)
        {
            currentTime += speed * Time.deltaTime;
            Debug.Log("frame: "+currentTime);
        } else
        {
            Application.loadLevel("Awal");
        }
        loadingBar.GetComponent/Image().fillAmount = currentTime / 100;
    }
}
```

![Figure 6. Script of splash screen.](image)
The application is tested in general to 101 respondents and most of the respondents stated that it is very helpful for students to learn to write which is 60% said that the application is very helpful in figure 7 and Figure 8 [10,11].

![Figure 7. Public test results for need of application.](image1)

![Figure 8. Public test results for usability of application.](image2)

4. Conclusion
From the results of the creation and testing of the Alphazzle game, it can be concluded that the Alphazzle Game has been successfully created using the Unity 5.6.6 game engine which uses the C# programming language and the script writing uses MonoDevelop.
References
[1] Sillalahi U 2005 Social Research Methods (Bandung: Unpar Press)
[2] Izhar S 1998 Pre-school Education Unit (Jakarta: PT. Gramedia Widiasarana Indonesia)
[3] Zimmerman E 2003 Game Design Fundamentals (Cambridge: The MIT Press)
[4] Safaat N H 2011 Android Programming Mobile Applications for Android-based Smartphones and Tablet PCs (Bandung: Informatics)
[5] Henry S 2010 Smart with Games (Jakarta: PT. Gramedia Pustaka Utama)
[6] Agarwall, B.B, et al. 2010 Software Engineering & Testing (London: Jones & Bartlett Publisher, LLC)
[7] Niwan A 1996 Programming Animations and Professional Games (Jakarta: Elex Media Komputindo)
[8] I Made Astra, Hadi Nasbey and Aditiya Nugraha 2015 Eurasia J. Math. Sci. Technol. Educ. 11(5) 1081-1088
[9] Hermawan S 2011 Easy to Make Android Applications (Yogyakarta: Andi Publisher)
[10] Nilwan A 1998 Animation Programming and Professional Games 4 (Jakarta: Elex Media Komputindo)
[11] DiMarzio J F 2008 Android Programmers Guide (United States: McGraw Hill Professional)