CHAPTER 6

CONCLUSIONS

6.1 Introduction

The objective and steps to achieve the objectives of the research that has been fulfilled is summarized. It will state the achievement of the research based on the objective stated earlier in Chapter 1. Furthermore, this chapter also details out the thesis constraints in achieving the objective. It also states about future enhancements of the research.

6.2 Contributions and Achievement

The research has fulfilled the objective that has been mentioned in the Chapter 1. The prototype Jawi application called 'Mari Belajar Jawi' for preschool education on palmtop like HP iPaq Pocket PC H1910 was build and developed.

In building and developing the prototype Jawi application for preschool education on palmtop, the research has achieved 8 steps taken in fulfilling the objective.

The research has achieved 8 steps as below :

1. The data about the palmtop and its architecture in comparison to the suitable type of platforms for implementation is collected. This is shown in Chapter 2. The data about palmtop and its architecture like Operating System,

microprocessors and LCD Display is discussed. Thus the HP iPaq Pocket PC H1910 was selected as the type of palmtop in this research because of its portability compared to other brand.

2. The research identified the compatibility of the authoring tool with the palmtop such as Macromedia Flash 5.0 in integrating the multimedia elements. It is showed in Chapter 4 where Macromedia Flash 5.0 is the kind of authoring tool that is suitable for producing high quality graphic, animation and interactive multimedia application. In addition, the Macromedia Flash Player 5 for Pocket PC 2002 lets designer or developer to reach the content for mobile devices like palmtop. Thus it is compatible with the palmtop in integrating the multimedia elements.

3. The research also identified the Jawi software that can translate the roman script to Jawi script, Jawi Multikey program. It is showed in Chapter 2. This software is a text-based program where user can just used the normal keyboard to get Jawi script. It is also proved in Chapter 3 and User Manual, user can see the Jawi script using Jawi Modern Khazan from 13 choices of fonts given in Jawi Multikey Software.

4. The information about government policy and syllabus on preschool education especially for Jawi syllabus was collected. In Chapter 2, the Malaysian government policy about preschool education is mentioned. It also

states the syllabus of Jawi for preschool education taken from the National Preschool Curriculum provided by the Ministry of Education (MOE).

5. The result analysis and discussion of preliminary data and requirements gathering on Palmtop, Jawi and Jawi application was done. It is discussed in Chapter 3 - the questionnaire result for parents and preschool teacher and, the structured interview result for preschool pupils are discussed.

6. The prototype Jawi application for preschool based on syllabus for Jawi in preschool education was developed. It is shown in Chapter 3, user can see the interface and the navigation of the application.

7. The implementation of prototype Jawi application called 'Mari Belajar Jawi' on HP iPaq Pocket PC H 1910 was achieved. It showed in Chapter 4 where steps of implementation are discussed. Chapter 4 also gives 4 examples of interface of 'Mari Belajar Jawi' on palmtop.

8. The evaluation result, analysis and discussion of prototype Jawi application on palmtop based on the interviews of preschool students, preschool teachers and parents were also done. Those form parts of Chapter 5.

6.3 Thesis Constraints

In the development of any multimedia application, we cannot avoid from constraints and problems whether we expected it or not. Furthermore, the prototype 'Mari Belajar Jawi' is the first version of Jawi application for preschool pupils that implemented on the palmtop. The constraints are stated as below :

1. The 'Mari Belajar Jawi' system has to be developed using desktop computer before its being transferred to the palmtop. For the time being, palmtop Pocket PC only support files that have Pocket PC format like Microsoft® Outlook 2000, Microsoft® ActiveSynch 3.5, Word, and Excel and Windows Media Player[46]. Initially, Macromedia Authorware 6.0 was selected as authoring tool with assumption that every packaged application can be run on every platform. 'Mari Belajar Jawi' application is packaged after 2 and ½ months. Unfortunately, the real problem occurred when on 21st March, after implemented on the HP iPaq Pocket PC h1910, the 'Mari Belajar Jawi' executable file cannot be recognized by the Pocket PC format. Furthermore, for the moment, there is no standalone Macromedia Player that can play the application directly unless the shockwave file is embedded in the HTML tag. Then the resources that have been integrated using Authorware 6.0 have to be transferred to Macromedia Flash 5.0.

[46] http://welcome.hp.com/country/us/eng/prodserv/handheld.html

2. In addition, not all the functions used in a PC are applicable on Pocket PC. For example, the audio tool tip can be done by using personal computer. However when it run on the palmtop, the audio is not clear and just played for a fraction of second. This is due to the input devices used by the Pocket PC itself where it does not use mouse as an input device. While in the Pocket PC, stylus pen is used as input device. Thus the mechanisms are different and have a specific interaction technique (Paelke and et.al, 2003). The evaluation result in Chapter 5 shows that 76.9% of the parents and preschool teachers gave negative response about the audio tool tip on palmtop. They thought that the audio tool tip in the palmtop is not working properly.

3. According to the evaluation result on preschool pupils, most of them (66%) could not see clearly the writings and pictures on the palmtop. It is tally with the parents and preschool teachers opinion where 65.4% of them gave negative response about the interface design on palmtop. Parents and preschool teachers thought that the prototype interface design was not suitable for the palmtop screen. This is due to the small display size and limited resolution (Paelke and et.al, 2003).

4. The prototype of Mari Belajar Jawi on Palmtop is not provided the interactive and animated 3D graphics because of limited processing power

as Volker Paelke in his paper, A Visualization Repository for Mobile Devices stated :

> *The limited processing power of mobile devices severely limits the use of interactive real-time animation and the generation of complex graphical displays. Especially the creation of interactive, animated 3D graphics is currently severely limited because existing mobile devices have no hardware support for 3D rendering. These constraints limit the applicability of several 3D based presentation techniques and the use of distortion based layouts. (Volker Paelke, 2003,p.58)*

As the application is only a prototype, the content and information provided still need to be added and expanded.

6.4 Future Enhancements

1. An advance function to give users capability to write on palmtop can be added to the application. Users should have the capability to write the alphabet in the writing module where the animation and static picture also shown. By allowing the user to write on the palmtop, it will give them more satisfaction because they can learn by practice on the palmtop itself.

2. The interface design for 'Mari Belajar Jawi' should adjusted to the palmtop screen area. Different designs should be tested on the palmtop to get the suitable and proper design for the small screen device like

palmtop. Thus, the enhancement on methodology should be considered in the future.