

For Whom the Painting Application is Made

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1. Introduction

Painting applications are one of the commonly-used applications on many digital devices. These are used in many usages as drawing, painting, graphic design, note taking and others. Consequently, these have many various users including professional and amateur both. However, many painting applications have been made for professional use. For example, Adobe Photoshop, one of the most famous photo retouch and painting application has many advanced functions for professionals. The same can be said for other painting applications. Therefore, the applications become complicated and difficult for amateur to use. In fact, these applications are not satisfactory for amateur.

In this paper, we propose a guiding principle to build an intuitive painting application for amateur to be easy to use, which guide to design the user interface. Especially, we focus on the analog painting materials equipment as DAB [Baxter 2001] did, and we examine to design the user interface modeled on the analog equipment. To get user's reviews about analog-like interface, we experiment using test applications, and we present the guiding principle based on the experimental results. Finally, using the principle, we make and show a sample application which have customizable interface for amateur.

2. Test Application Design

We build test painting application which has a user interface modeled on the analog equipment. For example, in a watercolor painting, the equipment mean brushes, pigments, palette, brush washer, paper, and other usual tools. Many users are familiar with these analog materials know-how, and we utilize the usage experience to build a user interface on painting application. We implement two test applications which have different features interface, and we observe user evaluation of the applications for comparison. We introduced the following two applications.

2.1 "YUMEIRO NO ENOGU"

One is the "YUMEIRO NO ENOGU"(which means "the paint of dream color") modeled on watercolor painting materials. Using the application, users obtain drawing results similar to watercolor painting. In addition to this, the user interface equipment is composed to imitate the watercolor material as possible. In this application, some general functions such as filters, masks and layers are not adopted, which are equipped for many painting applications. Fig.1 shows the user interface where all functions are deployed.

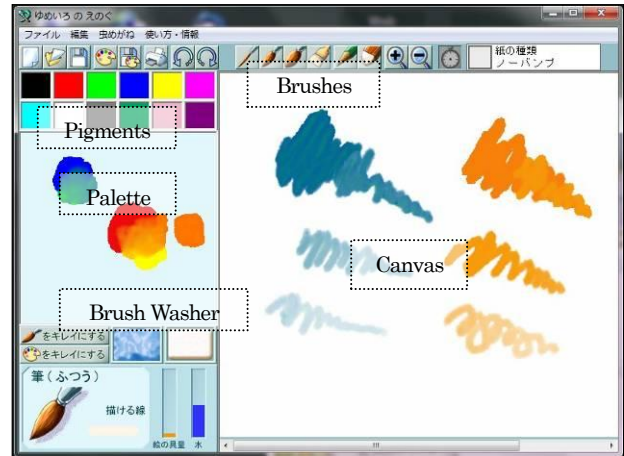


Figure 1: Screenshot of "YUMEIRO NO ENOGU". This screen includes all functions.

2.2 "Colored Pencils for iOS"

Another is the "Colored Pencils for iOS" modeled on colored pencils materials, and like the "YUMEIRO NO ENOGU", this application can output drawing results similar to colored pencils. But unlike the "YUMEIRO NO ENOGU", this application not only imitates the colored pencils equipment, but also equipped with some functions such as layers, brushes history, and favorites color (Fig.2).

3. Experiment and User's Review

Using above two applications which have different user interface, we made a user evaluation experiment for comparing. And then, we examined availability and requirement about these applications. User's reviews obtained by the examination are shown below.

3.1 Review of "YUMEIRO NO ENOGU"

Amateur's reviews are as follows:

- It's usable application for child and senior who are not used to computer.
- It's available application without documentation, because equipment is similar to the watercolor.
- This application is nice to get watercolor-like drawing result.
- When they become used to this application, they get tired of it because of a lack of advanced functions.

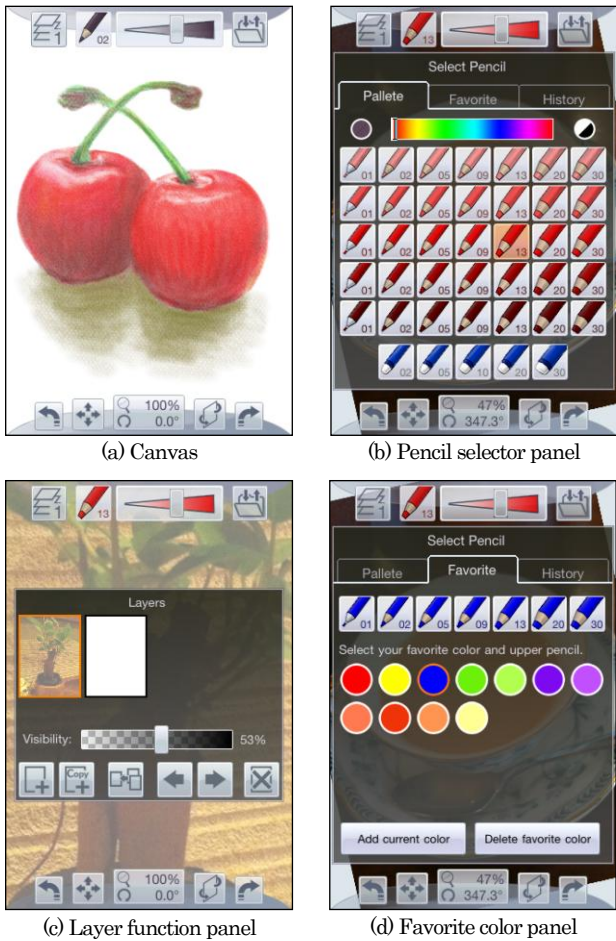


Figure 2: Screenshots of “Colored Pencils for iOS” have a lot of control panels for each function.

Professional’s reviews are as follows:

- This application lacks useful functions. They require layer, select region, various brushes and more.
- This application is unavailable for business use, because it can draw only in watercolor style.

3.2 Review of “Colored Pencils for iOS”

Amateur’s reviews are as follows:

- This application has easy-to-use interface that only select one from colored pencils.
- They can’t use complicated functions which are difficult, such as layer.
- They become to enjoy using advanced functions when they are used to the application.

Professional’s reviews are as follows:

- It is available application for professional to use such as rough sketch for design and other.
- They require making the layer function more advanced.
- They require various drawing tools in addition to colored pencils.

4. Discussion

The above results indicated a tendency that the preferring interface is different depending on expertise with digital painting. Particularly, digital-painting amateurs strongly preferred analog-material-like interface. On the other hand, we found that professionals usually require more advanced function without regard to user interface. Therefore, we found it’s effective to provide analog-like interface and drawing results for amateur. However, when the amateur users gained the experience, they are changed to prefer the interface to have more advanced functions.

As the results, it’s concluded that the painting application for amateur has two important requirements to build. One is providing a simple and familiar user interface such as analog materials and another is making a structure which can append new advanced functions to the application later. For this reason, it is advisable that we build a basic interface imitating analog equipment, and provide a structure that makes the user choose favorite functions from many functions freely in the entrance of the application such as Fig 3.

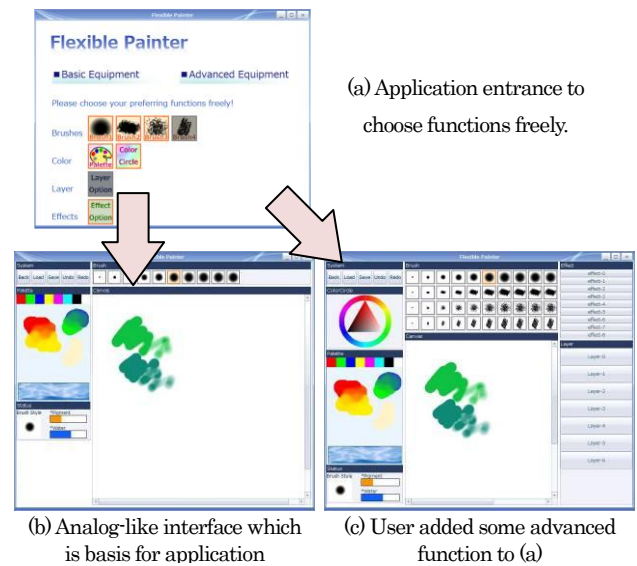


Figure 3: Sample application based on our guiding principle

5. Conclusion

This paper proposed a guiding principle to build a painting application for amateur. We built test painting applications modeled on analog material equipment, and made experiments by using it. As the experimental results, we obtained two principles which are useful to build a painting application for amateur. In the future, we will develop and release new painting application based on our guiding principle.

References

[1] Adobe Photoshop <http://www.adobe.com/products/photoshopextended.html>
 [2] W.Baxter, et al.: DAB: Interactive Haptic Painting With 3D Virtual Brushes, Proc. SIGGRAPH01, pp.461-468 ACM(2001)