

Title	デジタル環境下での 効率的な色識別能力支援システムの研究
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Citation	
Issue Date	2017-03-24
Type	Thesis or Dissertation
Text version	author
URL	http://hdl.handle.net/10119/14173
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Abstract

The purpose of this research is developing an efficient support system for improvement of color recognition skill in digital environment. There are several training tools to improve Color recognition skill, but there is no training system for improving this skill from the perspective of doing efficient learning.

In this research, we define Color recognition skill as ability to understand a color difference between two different colors. Color difference is expressed by Hue, Chroma, and Value difference. If we have color recognition skill, we can modify a color to an ideal one. There is a difference in Color recognition skill for each person, but we can improve this skill by training. However, it is difficult to do an effective training for this skill by an existing training tool. There are two reason. The first reason is that understanding own skill level is difficult. The second reason is that we have to select training questions by ourselves. Because of these reasons, it is necessary that some system presents optimal training question to learner for efficient training.

We thought color recognition skill training is skill learning, and examined ways to efficient skill learning. In supporting skill learning, it is important to locate the learner's wrong part and modify it. Accordingly, we have to make a system that can find learner's weak part of color recognition skill. In this research, we make an overlay model to find learner's weak part in color recognition skill training. This overlay model is composed by combination of three attributes of color, color type, and difficulty level. This model is able to express all part of color recognition skill's learning area. Furthermore, this model can find out learner's weak part by comparing learning area and learner's degree of accomplishment in this skill.

Based on this idea, we propose a training system for improvement of color recognition skill in digital environment. Using overlay model, this system can issue high priority problems. This system is for beginners who have never experienced color recognition skill training and are not Congenital color vision abnormality. Questions handled in prototype is made in reference to Digital version HVC color training's question.

In addition, we designed this training system and implement prototype program. This prototype has two function. First is pretest mode. In this mode, prototype will issue twenty-seven questions. There are nine questions in all, and are qualified three times. Also, the difficulty level of the questions is all level two After this pretest, prototype determines the initial state of overlay model which is corresponding to examinee. Second is training mode. In this mode, twenty questions will be presented. Also, a question to be chosen on the basis of an overlay model.

We conducted an experiment using this prototype and existing training tool, Digital version HVC color training. In the experiment, subjects are divided into two groups. First, we done the pretest for both groups. Second, one group conducts training using existing training tool. Another group trains with prototype. After training, we did the posttest for both groups. After, We conducted a questionnaire and compare the test results of two groups. Result, the group which use training system took higher score than another which use existing training tool. Furthermore, the group trained by prototype felt a change in color recognition skill compared another.