Features of Creating Flash Card Materials for Reflecting on Learned Contents

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Abstract: It is important that reflecting on contents learned during a class is done at the end of each class. However, it is difficult for many to invest in the human cost in time to prepare for such reflection time. This research suggests creating flash card materials using pictures that teachers have taken during class to reflect on different elements of the class. This study introduces the Skitch application tool as a useful application for providing reflection scenes of the class to students belonging to the Graduate School of Education. The tool was evaluated according to its availability during class and from the perspectives of "learning content," "notes," and "creativity" in a descriptive questionnaire. Results revealed that Skitch is a tool that can utilize flash card materials created at an earlier time in the class. The study also reveals features of creating and using flash card materials taken during class.

Keywords: ICT, Reflection, Flash Card Material, Materials development, Skitch

1. Introduction

It has become possible to reflect on the contents of a class using different types of multimedia, such as video, with advances in Information Communication Technology (ICT). However, there are issues about Reflection of class use video by Many cost about human and time (KONNO et al. 2009). Empirical research into the use of ICT to reflect on class material focuses on using video(MURAKAMI et al. 2010). Such research has neglected the use of other types of technology in the class. It is important that students reflect on the contents of the class before they forget the class. Therefore, reflecting on class content must be done quickly at the end of every class. Thus, using materials such as flash card materials (FCMs) by taking pictures of scenes during the class by the teacher is a valid form of content reflection. Takahashi (2011) defines FCMs as digital material used to repeatedly present questions quickly as a "Flash Card." There are also several different types of activity associated with the use of FCM, such as 1) Reading the word written, 2) Giving the name of a picture, figure or symbol, 3) Answering a quiz with three choices, 4) Giving a "yes" or "no" answer, 5) Filling in the blank. Therefore, it can be said that FCMs are still a tool used most frequently in questioning. However, sometimes the target of questioning is unclear because of the large amount of information that can be contained in one still image, particularly if the FCM is a photo which has inserted a shape such as an arrow to clearly depict the target in question. In doing so, it can create FCMs for reflecting scenes from the class. If necessary, it is also possible to take pictures and insert a shape such as an arrow during class. Therefore, advantages are in reducing planning time as much as possible, and ease of operation.

This study focuses on the Skitch application, which has a reputation for speed and simplicity of photo manipulation. Because, Skitch is one of tools which can shoot and modify easily and quickly.This study reveals the possibility of creating practical FCMs in Skitch. In addition, it reveals the features of creating scenes as FCMs with Skitch.

2. Survey-1 : Whether the practical use of Flash Card Materials

2.1 Survey Methods about Whether the practical use of Flash Card Materials

Figure 1 demonstrates that Flow about FCMs by Skitch for Reflection to Learning Contents. The time taken in creating FCMs in Skitch was investigated, as well as the possibility of practically creating FCMs by Skitch in Survey-1. A questionnaire survey was conducted in which 19 teachers of elementary schools were assessed for the duration taken to create FCMs using Skitch in class. Questions in the survey included the maximum allowable time for the creation of FCMs (Stoppable time). This questionnaire is in a description format. The duration taken to create several different images in Skitch was measured: 1) The duration to take a photo, 2) The duration needed to take a picture and add an arrow, 3) The duration to take a picture and add a mosaic, 4) The duration to take a picture, add an arrow and mosaic. Participants in this part of the study were graduate students of 16. The experiment consisted of taking and editing photographs of four character idiomatic compounds that were written onto a whiteboard. Equipment used in the experiment included a tablet PC with Windows8 installed. The creation time of a flash card was calculated as being the time between pushing the shutter button in Skitch and pushing the save button.
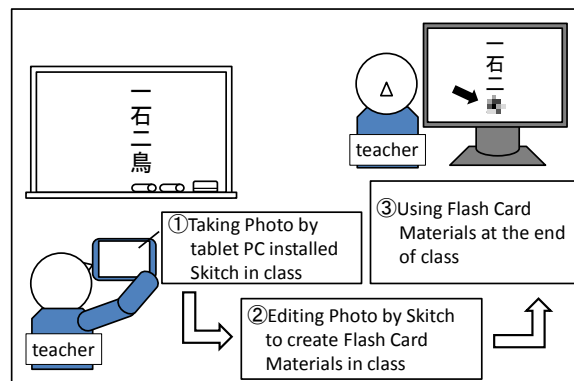

Figure 1 : Flow about Flash Card Materials by Skitch for reflection to learning contents

2.2 Survey Results about Whether the practical use of Flash Card Materials

Figure 2 show the relationship between the number of people and length of stoppable time which teachers think. Results into the average speed of creating a flash card was 112.1 seconds (SD: 70.6). The maximum amount of time taken was 300 seconds, whereas the quickest time was 30 seconds. Results into the amount of time to create an FCM in Skitch were as follows: 1) The average time of taking a picture was only 10.6 seconds (SD: 2.8), 2) The average time of taking a picture and adding an arrow was 13.7 seconds (SD: 3.5), 3) The average time of taking a picture and adding a mosaic was 13.6 seconds (SD: 3.7), 4) The average time of taking a picture, adding an arrow and mosaic was 14.7 seconds (SD: 3.8). In addition, the maximum time taken to create a picture in variable 4 (taking a picture, adding an arrow and mosaic) was 26.0 seconds 2,3,4 in four pattern was creating works of FCMs due to works including to edit ware 2,3,4 in four pattern. The average time across all four variables for creating FCMs was 14.0 seconds. Therefore, the time it takes to create an FCM in Skitch is an average of 14.0 seconds, with a maximum of 26.0 seconds. However, this does not consider the time spent on set up and troubleshooting before and after the pictures are taken.
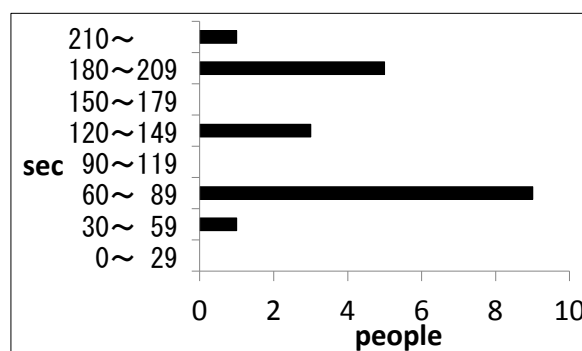

Figure 2 : Relationship of the number of people and stoppable time

3. Survey-2 : Feature for creating scene of Flash Card Materials by Skitch

3.1 Survey Methods about Feature for creating scene of Flash Card Materials by Skitch

A survey was conducted to reveal the features of creating FCMs on Skitch in Survey-2. This questionnaire is in a description format. This survey's participants were the same graduate students who participated in the investigation in Survey-1. There were 17 questions included in this data because one question was added regarding the subject of the survey. The contents of this questionnaire survey included questions such as; 1) "What do you think about the types of lesson contents that can be used?," 2) "What do you think about the notes provided when the flash cards were created?," and 3) "What do you think about the notes provided when editing?." Furthermore, the questionnaire was organized to categorize the information obtained in the questionnaire.

3.2 Survey Results about Feature for creating scene of Flash Card Materials by Skitch

  The survey was conducted in the form of a questionnaire following the description format found in Survey-2, and the results were categorized in the same manner. For example, in question 1) "What do you think about the type of lesson contents that can be used?," results were classified into three groups; "passive," "active," and "experience." There were many answers about knowledge acquisition in "passive." There were many answers about sharing, thinking, and behavior in students in "active." Specifically, examples included "Work of a child," "Content of a notebook," "Scene of activities," and so on. There were many answers regarding the difficulties of preparing materials beforehand in "experience." Questionnaire results about the question 2) "What do you think about the notes provided when the flash cards were created?" were classified as "subject," "how to copy," "content," and "other." Answers included comments on accessibility and also on concerns about the privacy rights of portraits including children. There were many answers about the manner in which the camera-works, as well as answers clarifying the purpose and object. Questionnaire results about question 3) "What do you think about the notes provided when editing?" were classified into "focus," "design," and "amount." There were many answers about adding marks to objects under "focus." In "design" answers mostly included comments on the simplicity and ease of viewable colors, as well as many answers about what many mark as unnecessary in "amount."

4. Conclusion and Discussion

  Survey-1 is not sufficient to reveal the average time it takes to prepare flash cards because preparation time for teachers largely differs among individual. However, as previously mentioned, the average time for creating FCMs on Skitch was 14 seconds, with a maximum creation time on Skitch of 26 seconds. On the other hand, the average preparation time was 112.1 seconds, and the minimum time was 30 seconds. Therefore, it is considered that almost all teachers at elementary school can create FCMs on Skitch during class.

  Survey-2 revealed more qualitative data about creating FCMs on Skitch. The results showed the following; A Skitch application tool can be adapted to feature "passive," "active," and "experiential" class content, covering reasons as to why some teachers may want to use FCMs on Skitch. Traditional FCMs are created in advance by teachers. Therefore, Traditional FCMs cannot be used in class for "active" and "experiential" learning, which has not been a previously predicted progression of the class. On this basis, it is suggested that FCMs by Skitch are more effective in class for providing a review of "active" and "experiential" type materials, which would be difficult to provide by means of traditional FCMs. In considering the classifications of features such as "subject," "how to copy," and "content" notes when creating FCMs on Skitch, these features were considered to be the same as traditional FCMs regarding "content." However, it is important to note the differences which were revealed concerning the "subject" and "how to copy" when taking pictures. In particular, if participants raised concerns about the publicity rights and privacy rights of the "subject." When considering features such as "focusing," "design," and "amount" in editing FCMs by Skitch, results revealed similar results for Traditional FCMs regarding the same topics. However, Traditional FCMs are easy to see in the original form because they are created from a blank, whereas FCMs on Skitch can be difficult so as to find a target for, because they are created from photos. In conclusion, it is important to be clear about the target and not to include too much additional information in each picture. Therefore, it is necessary that the expression should be easy-to-understand and one which keeps additional information to a minimum when creating FCMs on Skitch.

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