

The Case Study of Knowledge Transfer through Computers-Making a Subject Homepage

Abstract

The purpose of this study was to treat the ways of knowledge transfer by computers, and assess the effects of knowledge transfer. One elementary school teacher and five six-grade students agreed to participate in this study; they created a knowledge transfer by making a subject homepage through a nine-week course plan.

Qualitative methods of data collection, interviews, observation, and analysis were used. The findings from this study were: 1) knowledge could be transferred by explanation and practice; 2) good interactions between teacher and students help to transfer the knowledge; 3) through practice, teacher could find students' achievement and difficulties; 4) subject-centered course plans help to integrate the knowledge transferred.

The evidence from this study suggests the experiences of knowledge transfer. Subject-centered course plans were popular among students; students also learned how to integrate subject homepages and apply the knowledge to make a subject homepage. The results of this study could be the reference of subject-knowledge transfer through computers in elementary schools.

Keyword : Knowledge Transfer 、 Subject Homepage

Subject : Computer Application in Information Technology Education

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1. Introduction

In Taiwan, information education was highly valued and combined into teaching; knowing how to use a computer and software was especially emphasized. Knowledge transfer could start through the process of socialization, education and learning. Knowledge might be transferred deliberately, or it may be viewed as a outcome of some activities. (Joshi, Sarker

and Sarker 2004).

While an organization maintains its competition by constantly learning and creating, knowledge transfer had been declared as a vital activity of knowledge management (Joshi, Sarker, Sarker 2004).

Even though the relative documents of knowledge management are extensive, there were little accounting for how to gain, integrate, accumulate, share, transfer, update,

and create the knowledge, not to mention the improvement of information technology and organization culture and put it into practice (曾國鴻, 2003). Therefore, the purpose of this study focused on assorting the knowledge gained and how to transfer it effectively.

Knowledge transfer, reaches its purpose by all kinds of methods and tools via the interaction between knowledge receiver and knowledge provider. In this study, a computer teaching course in an elementary school was adopted as the content of transfer. One teacher and five six-grade students participated in the study to carry out a nine-week course design and teaching plan of knowledge transfer.

This study sought to gather evidence from teacher and students that transfer knowledge through computers. Specific research purposes of this study were:

1. Treat of patterns of knowledge transfer through computers in elementary schools;
2. Treat of the effectiveness of knowledge transfer via making homepages.

2. Foundation of Theory

2.1 The Meaning of Knowledge Transfer

Snowden considers that knowledge is the identification of wisdom and the best management of it. The wisdom includes explicit knowledge and tacit knowledge (2000). In general, the systematic development of explicit knowledge has been sound (Byounggu & Heeseok 2002). Paul posed "The Knowledge Transformation Cycle" (2003):

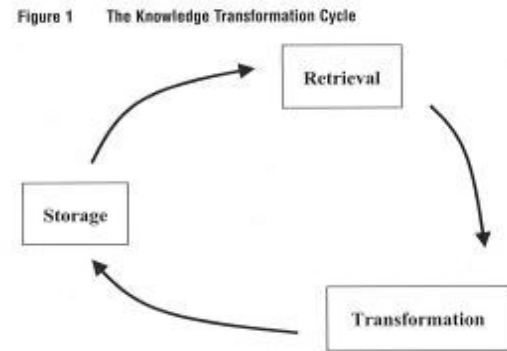


Figure 1 shows that knowledge transformation includes three processes: 1) storage; 2) retrieval; 3) transformation. Storage implies the knowledge that was used through person, groups or organizations or changes the behavior by accumulating knowledge. The main method to retrieve knowledge stands on data research and knowledge gain. In the transformation step, there has been enough strategies to share knowledge, participators must aim for elevating self-effective and knowledge description and point out the transition of knowledge via negotiation.

In the process of knowledge transformation, Paul thinks it important to transfer the knowledge into an acceptable pattern for the receiver (2003). Therefore, knowledge transfer not only emphasizes the character of knowledge but also the absorbency of the receiver.

2.2 Pattern of Knowledge Transfer

Knowledge transfer was thought to be the approach to maintain competition in organizations. There might be differences in the stages of knowledge transfer because of different points of view. Gabriel thinks that there were four stages in the process of knowledge transfer (2000):

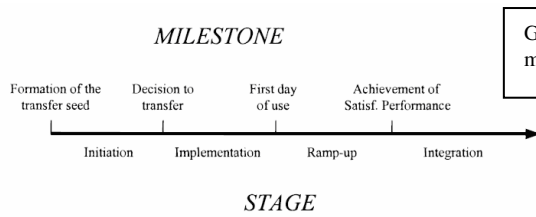


FIG. 2. The process of knowledge transfer.

Figure 2 showed the four stages: 1) initiation : when knowledge transfer occurs, the formation of the transfer seed forms also; 2) implementation : this stage emphasized on how to bridge the gap between information givers and receivers; digital divide should be noticed also; 3) ramp-up : this stage provides necessary aids to achieve the receivers satisfaction; 4) integration : make it a habit of using new knowledge; this habit will formed as a cycle in an organization.

To sum up, knowledge transfer lays emphasis on application of knowledge and the integration ability of the receivers.

3. Research Design

3.1 Process of the research

This study focused on the patterns of knowledge transfer through computers in elementary schools and assesses the effectiveness of transfer. One teacher and five six-grade students participated in the study to carry out a nine-week course design and teaching plan of knowledge transfer. Qualitative methods of observation, data collection, analysis and interviews were used. Students have their prior knowledge in the study. The processes of the research were:

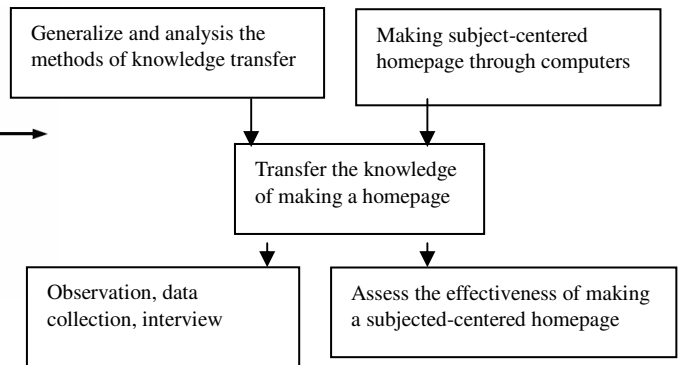


Figure 3 Process of the research

Figure 3 showed the process of research; after the nine-week subject-centered course plan, the results of knowledge transfer and students' effectiveness of transfer could be generalized and analyzed through final data.

3.2 The course plan of making a subject-centered homepage

The course plan of making a subject-centered homepage was showed as Table 1:

Table 1 、The content of making a homepage course plan

Week	Content
1	Introduction of homepage; instruction of software
2	Introduction of facility; allocation of tasks and plans
3	Art designing; homepage designing and data collection
4	Construct of homepage; homepage designing
5	Discussion; modifying homepage; progress adjusting
6	Making branch page respectively; progress adjusting
7	Discussion; modifying homepage; take pictures
8	Finishing branch pages, progress adjusting
9	Modifying homepage; checking website links; finish

Table 1 is the progress report of the nine-week course plan.

4. Results

The study was a case study. It carried out a nine-week course plan of making homepage, one elementary school teacher and five six-grade students were the study samples of knowledge transfer. Qualitative methods of observation, data collection, interviews with the teacher and students were used. Finally, the data collected was generalized to analyze the patterns of knowledge transfer and the effectiveness students achieved. In the study, "T" stands for the teacher; S1, S2, S3, S4, S5 stand for the five students. "T-4-1-1" means the first point of the teacher in the conclusion; "S1-4-1" means S1's point in the conclusion, and vice versa. The results are as followed:

4.1 Knowledge could be transferred by explanation and practice

The facilities needed in the study were computers, digital cameras. It is necessary to instruct students to use the basic software. "T" adopted the approach of traditional teaching to convey knowledge and teaches students how to use the computers. The process was recorded as follows:

In general, I will explain to students the usage of software before using the computer, and tell them to follow my steps. (T-4-1-1)

Students need time to operate and think, hence they know how to apply the knowledge while make the homepage. (T-4-1-2)

The integrating ability showed on making homepage; the abilities needed are basic operation ability, simple word process ability, and art designing ability. Students learned the integrate ability through the subjected-centered course. Students said:

I learned many skills of making homepage and modifying photos. (S3-4-1)

After the explanation, I finally knew

that homepage was consisted of photos and characters, and all files were linked by the so-called "hyper link". (S5-4-1)

The teacher adopted the traditional method to transfer the knowledge of making a homepage. Based on the feelings of learning, it showed that students learned new skills and improved their ability of using software. In the study, teacher transferred knowledge through instruction and practice.

4.2 Good interactions between teacher and students help to transfer the knowledge

In the designed subject-centered computer course, the teacher had a good interaction with the students, hence made the progress go smoothly. Students said:

Teacher promised to take us to Jia-Xian to take photos, and it was a joyful event to us. It was gleeful. (S1-4-2)

Our teacher was the best teacher in the world, no one could beat her, so we were serious while learning. (S2-4-2)

We all did our best while making the homepage and tried not to let the teacher down. We not only had fun and took pictures while making the homepage, the teacher even bought us drinks; that was wonderful. (S3-4-2)

Through observing the interaction between the teacher and students, it showed that students learned gaily. With the good atmosphere, it helps the knowledge transfer easier and also evaluates the learning effectiveness.

4.3 Through practice, teacher could find students' achievement and difficulties

In the process, teacher and students devoted themselves to the class. Students use their leisure making homepage actively. T would give extra instruction while students had difficulty in learning. Once the students wanted to give up, the teacher encouraged them. The interviewed content

was as follows:

I checked my students' learning process and gave instructions moderately. (T-4-3-1)

Sometimes my students lack confidence and thought they couldn't make it. At that time, I usually encouraged them and sometimes gave them prize as the reward. (T-4-3-2)

Based on the opinions mentioned above, students gave their opinions:

The teacher taught us everything we didn't understand! We all have confidence now; I wanted to thank the teacher for her teaching. (S2-4-3)

Everything was worth it while seeing our first fruits; it was an unforgettable experience. (S1-4-3)

According to the students feeling, they had much fun and sense of achievement while making their own homepage. Through the practice of knowledge transfer, we could tell the difficulty of transferring and examine the effectiveness of transfer.

4.4 Subject-centered course plans help to integrate the knowledge transferred

Besides implement stage, integration is more important. In the study, students must have prior knowledge of computers before make a homepage; furthermore they could learn the knowledge of relative software to make a homepage. Students indicated that they had improved their ability and confidence of using computers. Students said:

I didn't know how to make a homepage, but now I knew it. It was thanks to the teacher's instruction. (S2-4-1)

After the homepage making course, I wish to be a game designer; many people like my game software. (S3-4-3)

I was glad that the teacher taught us to make a homepage; I learned a lot of knowledge of making a homepage. (S5-4-3)

Likewise, students' performance made the teacher satisfy and happy, and because of these industrious students, T really appreciated the chance.

These kids were devoted to the class; they were in high spirits while outing for taking photos. (T-4-4-1)

At the first beginning I worried that students might give up, but now I think they were wonderful after seeing the results. (T-4-4-2)

After analyzing the data collected, the experience and results showed by the students indicated that they could use the skills learned to make a homepage and integrate the knowledge gained. In the study, it is obvious that subjected-centered course helps integrate the transferred knowledge.

5. Conclusion

Methods of observation, data collection, interview and analysis were used in this study. The results of this study shows 1) knowledge could be transferred by explanation and practice; 2) good interactions between teacher and students help to transfer the knowledge; 3) through practice, teacher could find students' achievement and difficulties; 4) subject-centered course plans help to integrate the knowledge transferred.

The study suggests the personal experience of knowledge transfer. Subject-centered course plans were popular among students; students also learned how to integrate subject homepages and apply the knowledge to make a subject homepage. The results of this study could be the reference of subject-knowledge transfer through computers in elementary schools.

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