

# **The interaction among students for engaging off-classroom learning : the case of Kansai University Senior High School using iPad**

Ryota YAMAMOTO  
Graduate School of Kansai University  
ryota0719@gmail.com

Tsuneaki EMORI  
Kansai University Senior High School  
emori@kansai-u.ac.jp

**Abstract:** This paper reports the off-classroom activity utilizing iPad to engage the student to learning. The school curriculum conducts not only classroom learning but also off-classroom learning opportunities. This study focuses how we can support off-classroom learning, because nowadays in Japanese schools conduct off-classroom learning as integrated learning opportunities. Students learn from various off-classroom experiences, however, it is not enough to engage learning, because students are difficult to find meaning for their learning from various off-classroom experiences. To engage off-classroom learning, there are previous studies about utilizing mobile devices, such as mobile phone, PDA (Personal Digital Assistants) and tablet devices. Although in these studies, they are able to prepare learning resources after students motivated the strategies that how students engage to off-classroom learning was not clarified. Other previous studies mentioned interaction among students effects to motivate them. Then, we designed off-classroom learning with interactions among students in Kansai University Senior High School, and clarify how they are motivated from their interactions.

**Keywords:** *Off-classroom activity, Interaction, iPad, fieldwork*

## **INTRODUCTION**

The school curriculum conducts not only classroom learning but also off-class room learning opportunities. Each learning opportunities have different focuses. Classroom learning mainly focuses acquiring knowledge and skills. On the other hand, off-classroom learning mainly emphasizes problem solving. Students explore social problems and apply knowledge and skills, acquired in the classroom to analyze these problems. The importance of the combination of these different learning opportunities was recognized and conducted in the past in Japanese school education. Additionally nowadays, interests by designing off-classroom learning are growing because the integrated study was started and educators got time to conduct these learning experiences.

The students learn when they have various experiences outside the classroom. Although the students have chance for learning through it, it is not enough to engage learning them. Learning environment and situation have big differences between classroom and off-classroom, so the students are difficult to understand their own experience as a learning activity (Fujita and Mashiko 2008). If the students couldn't find meaning the off-classroom experiences as a their learning opportunity, their experiences will be one-off event, and they will not able to develop future inquiry or knowledge acquisition. Then we decided to fined how we can design off-classroom environment to engage the students in learning.

### **How off-classroom study was supported?**

There are lots of study how about supporting off-classroom study. And recently we can find these studies with technology offering newly mobile devices, such as cell phone, PDA (Personal Digital Assistants), tablet devices and network infrastructure (Ishizuka, et. al.2007; Yatani, Onuma, Hattori, Sugimoto and Kusunoki 2002). Ishizuka, Takada, Horita, Moriya and Maeda (2007) developed learning support system with cell phone in the aquarium. Morita, Enomoto, Yamamoto and Shimizu (2009) offered learning environment that the students are able to access information repository by PDA during off-classroom discovery learning. These studies clarified when learning information accessible during off-classroom situation, knowledge acquisition promoted.

Preparing and accessing learning resources are effective for the students who were motivated to off-classroom learning, however, there is assignment about how we are able to motivate learning them. Learning resources are useful for the students who motivated. Then, we need more knowledge about support how the students will be motivated.

### **Motivating learners in interaction**

Learning motivation is developed in interaction among peer learners (Sato 1996). Learning motivation relates to individual interests mainly, however, there are the studies that included social factors. For example, according to the studies about everyday cognition, the learners who participated in social practices, such as workplace or community activities are motivated to acquire knowledge and skills to achieve their own role or task (Inagaki and Hatano 1989). The learner who participated in social practice is motivated to achieve its goal, and it shared among the participants. To engage learning, social factor of motivation is important.

This kind of social practice is able to bring to the school setting. Sato (1996) said that we can promote this motivation in social practice not only workplace or community activities but also school learning with appropriate learning settings. For example, there are some case studies about promotion of motivation in the problem solving with group members. To promote motivation for the students, we have to set not only interaction among classmates but also shared goal among them including teachers.

When we apply this knowledge about social factors of motivation to off-classroom study, there is difficulty. In the classroom setting, the students are easy to observe the other students' action, and possible to understand shared goal they should acheive. However, the off-classroom setting, it is difficult to find it because they learn in small group or individually. Then, we designed learning environment to motivate the students by interaction among other members with iPad.

## **RESEARCH OBJECTIVE**

This paper reports the pilot practice in Kansai University Senior High School (KUSH) to engage the students to learning off-classroom activity utilizing iPad. First, the authors show the detail of the pilot practice in KUSH. Second, we analyze reflection report that the students wrote after the pilot practice, and find out the merits and demerits.

## DESIGN OF OFF-CLASSROOM LEARNING TO ENGAGE THE STUDENTS

We designed fieldwork in KUSH on the integrated study as an off-classroom activity. The students in KUSH write a graduation thesis about analyzing social issues and suggesting to solve it individually by the knowledge that learned in high school period. Before writing it, we conduct opportunity of fieldwork to the students to know how find social issues off-classroom settings and collect data to analyze it for the preparation of writing (Emori 2012). The process of this fieldwork is following;

### [1. Setting the theme]

The teachers set the framework of the fieldwork (what assistance for foreign visitors are there in Kyoto?), and made the theme and venue for each group particularly.

### [2. Collecting the data from the field]

The students collected data during fieldwork by interview to foreign visitors, shop staffs, temple managers, etc. and taking field memos (pic. 1). A teacher lead 1 or 2 groups, but basically they were done without help from teachers.

### [3. Summarizing the data and making the report]

After the fieldwork, the students summarized collected data such as the voice, picture and memos, and made report individually.



Pic.1 fieldwork of KUSH

We conducted this fieldwork in November 7th, 2012 to 107 (20 groups) of 9th grade (high school 1st grade) students.

During the fieldwork, each group brought an iPad2 and a mobile modem to communicate with other group students. We set 'MESSAGE' application before the fieldwork. The students are able to communicate by text, and share photo by MESSAGE application. At the orientation we taught how to collect voice and photo data by iPad, and recommended to comment, advice and share information each other by iPad.

## ANALYSIS OF THE REPORTS

We analyze small reports the students wrote after the fieldwork. We put the question for the report; What did you know/think through the fieldwork, especially when you used iPad? We classified content of their reports to affirmative descriptions and negative, and categorized for each content. As a result, following affirmative categories (Table 1) were found; 'Understanding the actions of other learners in the fieldwork', 'Encouragement from other learners', 'Reference other group action', 'Use as multi recording tool' and 'Find information on site.'

Table 1 Categories and examples of affirmative description	
Categories	Examples
Understanding the actions of other learners in the fieldwork	- We could know what other group are doing in any other place they are. - We didn't interview foreign visitor who was already done by other group.
Encouragement from other learners	- I could participate positively because I could catch the actions of other groups - I was inspired when I watched posted messages, and I achieved fieldwork. - Other group students posted 'I succeeded interview!' it was pushed me to do too. - I felt membership (with other students) during the fieldwork.
Reference other group action	- We could see what other group were doing, and I refer their action. - We could bring other groups' ideas to my group when I found it in interaction on iPad.
Use as multi recording tool	- It was useful as a voice recorder - It is easy to take and share photos
Find information on site	- Our plan was changed on the day, but we can find other information from the internet. - We can find more information when we had new interests on the site.

Categories	Examples
Unsuited weight and size	- It is unsuitable for fieldwork, weight and size
Disturbing concentration: watched from visitors	- People often see us when we took photos by iPad.
Disturbing concentration: posted messages not relate with fieldwork	- When I checked posted message, some students posted information not relates with learning activity. I wonder why. - Sometime I was difficult to find information I need, because some of groups posted unnecessary information.

Although most of the students wrote positively, there are negative descriptions. As these descriptions, three categories (Table 2) were found; 'Unsuited weight and size', 'Disturbing concentration: watched from visitors' and 'Disturbing concentration: posted messages not relate with fieldwork.'

The each students had different themes, so they worked individually, without fully collaboration. However, the students connected weakly, and they referred other groups' work and was inspired by their action through watching iPad. This weak connection effected to engage the students to the fieldwork. Utilization of iPad enable engaging students to off-classroom learning activity.

## CONCLUSION AND FUTURE DIRECTION

We designed learning activity utilizing iPad that enable communication among learners for engaging off-classroom educational opportunities in current years, and conducted pilot practice in KUSH. And we found out the students connected with other students weakly during the fieldwork from the analysis of small reports they wrote after participated. Introducing iPad has possibility to engage student to off-classroom learning activity.

This paper evaluates the pilot practice, however, we need more data collection and analysis. In this paper, we collected small reports the students wrote after the fieldwork. We could find the students' thinking and impression about iPad utilization during the fieldwork. To clarify more details, how the students work in this settings, we add more data by recording their action. Moreover, we include connection between off-classroom learning activities and classroom learning activities because in general classroom activities conduct as preparation, conclusion and reflection about off-classroom learning activities. We continue to find how we can design off-classroom learning activities.

## REFERENCES

- Emori, T. (2012) iPad wo katsuyou shita fieldwork. [Utilizing iPad for fieldwork]. News Letter of the Japan Forum, 93. 8-9.
- Fujita, H. & Mashiko, N. (2008) Mobile media wo riyou shita kyoshitu o gakkougai no taiken wo 'tsunagu' gakushu program no design. [Learning program design to link classroom learning and outside experience with mobile media]. Journal of Japan Society for Educational Technology, 32(3), 323-332
- Inagaki, K. & Hatano, G. (1989) Hito ha ikanishite manabuka: nichijo teki ninchi no sekai. [How human learn: the nature of everyday cognition]. Tokyo: Chu ko shinsho
- Ishizuka, T., Horita, T., Takada, K., Ishihara, K., Ogawa, M., Moriya, K. & Mori, S. (2007) Keitai jouhou tanmatsu wo katsuyou sita kounaigai ni okeru gakushu no renzokusei wo jushi shita shougakusei muke mobile gakushu kankyo no kouchiku to jissen. [Practical Study on a Mobile Learning Environment with PDAs for Elementary School Children to Connect with Classroom and Out of Classroom Learning]. Journal of Japan Society for Educational Information, 22(3), 19-30
- Ishizuka, T., Takada, K., Horita, T., Moriya, K. & Maeda, Y. (2007) Jidou no suizokukan deno gakushu ni okeru keitaidenwa no katsuyou no kentou. [A learning system using mobile phones and wireless LAN in an aquarium]. Journal of Japan Society for Educational Technology, 31(Suppl.), 77-80
- Morita, Y., Enomoto, S., Yamamoto, T. & Shimizu, Y. (2009) PDA wo mochiita keitaigata gakushu shien system no katsuyou jissen to sono hyouka. [A Teaching Practice and an Evaluation of the Portable Learning Support System]. The Institute of Electronics, Information and Communication Engineer Technical Report:

Educational Technology, 108(470), 193-198

- Sato, K. (1996) Gakushu no doukiduke, shakaiteki bunmyaku. [Learning motivation, social context]. In Hatano, G. (Ed.) Ninchi shinrigaku kenkyu 5: Gakushu to Hattatsu. [Cognitive Psychology 5: Learning and Development]. 221-241. Tokyo: University of Tokyo Press.
- Yatani, K., Onuma, M., Hattori, A. Sugimoto, M. & Kusunoki, F. (2002) Musex: hakubutukan ni keru PDA wo mochiita gakushu shien system. [Musex: system for supporting children's learning in a museum with PDAs]. Technical Report of Information Processing Society of Japan, 2002(111), 9-16