

**Cited as:** Law, H.C., Chu, S.K.W., Siu F., Pun, B. & Lei, H. (2011). Challenges of Using Google Sites in Education and How Students Perceive Using It. Paper presented at *CITE Research Symposium 2011*, The University of Hong Kong, Hong Kong.

## **Challenges of Using Google Sites in Education and How Students Perceive Using It**

Law, Andy Ho Cheung, Chu, Samuel Kai Wah, Felix Siu, Pun, Boris Lok Fai and Lei, Huey  
Centre for Information Technology in Education, Faculty of Education, University of Hong Kong

---

### **ABSTRACT**

This paper describes an on-going project which is about how Google Sites, which is a type of wiki, applied in the implementation of Inquiry project based learning (PjBL). Teachers and students from a local school being anonymous as KS shared the first hand experience and positive comment on using Web 2.0 technologies in education and learning. This paper reveals the finding of the project and states out the school encountered the challenges from students' parent because of misunderstanding the nature of on-line project, and also from the students due to not being familiar with using Google Sites. This paper also includes how the school IT teacher dealt with those challenges with probable solutions, and he perceived an improvement of the students' performance in this General Studies group project facilitated by using Google Sites.

---

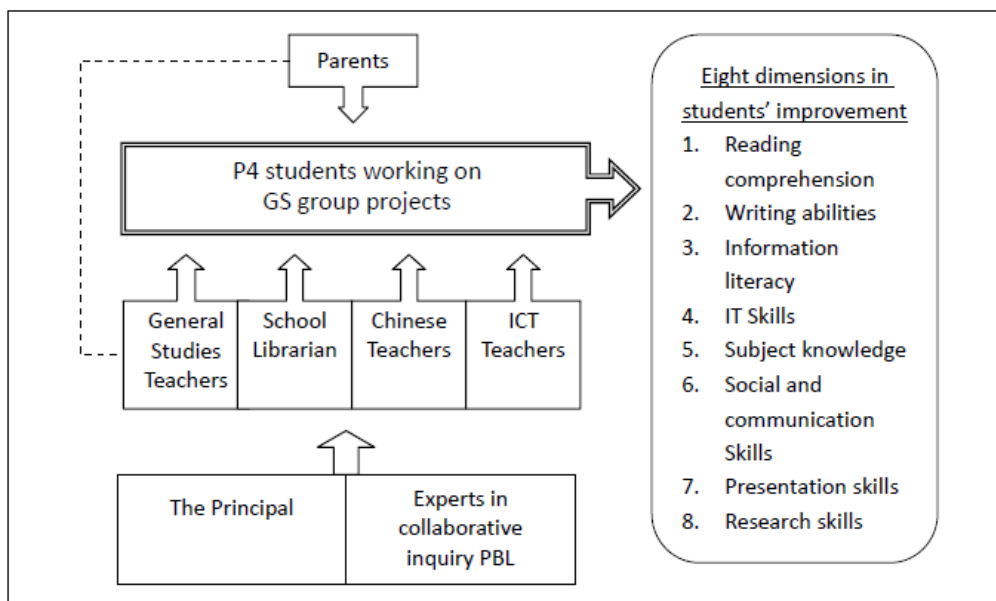
### **Introduction**

In the technology-advanced 21st century, information technology (IT) skills are in high demand, and so schools begin training students in IT skills as early as in primary (Law *et al.* 2010). Chu (2009) found that IT skills needed by Primary 4 (Grade 4 in the American system) students in a local Hong Kong school included information search abilities on the Internet, MS office software like Excel and PowerPoint, and Chinese keyboard skills. Besides, IT lessons at schools should not only gear towards enhancing students' IT skills but also aim at facilitating their learning in other subjects. The study also identified IT teachers' role as facilitators in guiding students to develop necessary IT skills for more effective learning. This paper reports on a study that expands on Chu's (2009) ideas. It involved the participation from four primary schools at Primary 4 and 5 levels. This paper reports the students' experience of one of the participating schools *KS* (a fake name) that applied a collaborative teaching approach that involves teachers from different disciplines (e.g., General Studies [GS] and IT) and the school librarian in providing support to equip students with the knowledge and skills necessary for the GS project. Students in the second semester were required to submit a General Studies group project in wiki-platform. The author, who is also the IT teacher in *KS* school, will explain the difficulties of using Web 2.0 technologies in education and share his frontline experience on it. He will also show how students perceived the use of Google Sites based on his first-hand teaching experience gained from the inquiry PjBL project.

### **Background**

The need of specific knowledge in a contemporary society triggers the change or amendment of educational policy. Inquiry based learning approach, which is a student-centre learning based approach (IBL) promoting the integration of skills, knowledge and values (EDB, 2002), is now worth being studied and explored its potential benefits to students. In Inquiry based learning, Teachers take role of a facilitator to provide students with a better learning environment or with fundamental knowledge, and students need to actively raise questions and find answers through information searches. Teachers will teach students different skills including skills of analysis, problem solving, discovery and creation (UNESCO).

Slightly different to other IBL research project, in the research project of the University of Hong Kong the IBL approach requires the collaboration among different subjects. The collaborative inquiry project-based learning (IPjBL) approach was designed based on the models and guidelines from Harada and Yoshia (2004a, 2004b) and Chu (2009). Figure 1 presents the framework for this study that examines the effectiveness of an inquiry PjBL approach in guiding students through their group projects and promoting learning in various domains.



The proposed collaborative inquiry PBL model for GS group projects (Chu , 2009).

A number of research studies show a positive result about the implementation of inquiry project-based learning (IPjBL), proving that it is a far more effective mode of learning than traditional forms of learning. The benefits of IPjBL include the integration of knowledge across disciplines, cultivation of students' spontaneous curiosity, and development of learning that respects both the intellectual growth and age-specific concerns of students. Attributed to the fact that inquiry learning uses the idea of self-generated or semi-imposed tasks in which the students negotiates through a thematic and problem based content (Harada & Yoshina 2004a), IPjBL are highly possible to help students develop their critical thinking and problem solving skills, as well as the ability to communicate and collaborate with others (Chu, 2009).

Web 2.0 technologies were used in conjunction with the IPjBL approach in order to facilitate co-construction of group project in the cyberspace (Li, et al., 2012; Woo, et al., 2011). Chu (2009) has conducted a relevant research before about applying the collaborative tools in Inquiry project based learning. The finding reveals that during the process of comprehending, locating, analyzing, evaluating, and synthesizing information, the expected positive fruitful result to students will be the improvement of their knowledge for problem solving in their inquiry projects and, hence, enhancing their information literacy and media literacy.

Among all Web 2.0 technologies, Wiki is the most suitable tool for students to do their group project collaboratively. Wikis are commonly used as knowledge management tools to facilitate the creation, sharing, discussion and revision of knowledge artifacts in group projects (Da Lio, Fraboni & Leo, 2005). Wiki software has been applied in various ways in education, including as support for writing individual and group projects, course management and distance education (Bold, 2006; Li, et al., 2012; Parker & Chao, 2007). Chu (2008) has conducted several researches on the use of Wiki to promote students' learning and found that both undergraduate and postgraduate students were positive towards the effectiveness of Wiki in facilitating their group projects. In particular, Wiki was seen to enhance group collaboration as well as work quality, and it was considered a useful tool for knowledge management in terms of knowledge creation and sharing (Chu, Cheung, Ma & Leung, 2008; Chu & Kennedy, 2011; Woo, et al., 2011).

## Teaching design of Inquiry project based learning for IT teachers

One inquiry project in General Studies had been assigned to P5 students in both first and second semester. Throughout 8 weeks of participation in project, students have to decide and work on a research topic in group. Unlike other normal project learning, Chinese teachers, teacher librarian and IT teachers collaborate with GS teachers will help them on this project learning. The GS teachers will overlook the project and teach student some research skill, basic knowledge relevant to their project and so on. Supplementary knowledge like students' reading and writing abilities, IT techniques and research skills will be taught by Chinese teachers, IT teachers and teacher librarian respectively.

To coordinate with the project, a more in depth and intensive IT teaching was given to students starting from P4. Since reports and presentations were required for students in GS project, students should learn more precise and accurate information collection skills and methods of presentation. So students at the first semester learnt

how to search information from internets using logical keys like ‘AND’ and ‘OR’ to narrow down the searched results of relevant information. Teacher librarian collaborated with IT teachers to teach students how to search information from the internet effectively with using advanced search engine. Basic knowledge about using Microsoft PowerPoint like inserting slides, adding texts and picture were taught. Besides, to have a fruitful presentation, supporting figures are essential and so IT teachers spent lessons on teaching how to use spreadsheets to create charts.

Google Sites is the wiki platform chosen in this research project, due to its convenient usage, Chinese interface and easy to use for beginners. For the GS project, students were required to create a Google account for activate their wiki platform, and this task was supervised by IT teacher in IT lesson. Once students created their own Google account, a group leader from each group created a group Google Sites platform using the template provided by research team. Teachers taught students the function of Google Sites platform based on the Google Sites handbook published by research team. IT teachers kept in a close supervision to the progress of students’ works and provided support when technical assistance was in need. This helps IT teacher developed his understanding and frontline experience on how Students learnt and worked from using Google Sites to create their GS project.

## Frontline experience sharing

Here, the first author will illustrate the situation he observed as an IT teacher. This part consists of four parts as follows.

### The role of IT teacher

As an IT teacher, its job duty is mainly related to teach students IT skill and provide IT information and support for their enquiry. In this project, as Google Sites is a new technology to students, a long and well prepared teaching schedule was offered to students before the start of GS projects. After the students have certain understanding to Google Sites, they have to create their group Google account, and it consists of lots of information management and input, like filling in their personal information, selecting password and, which is the most difficult task observed throughout this project, the input of security code due to its unclear illustration. And since creating Google accounts require telephone verification, IT teachers need to communicate and co-operate with students’ parents, and ask for their assistance on creating the accounts.

After that, students will be responsible to create their website and set up the framework of their Google Sites. IT teachers were required to prepare a standardized template for them before they start their work, and IT teachers need to guide the students working on their information management process, like to categorize certain information in specific dimension, and give a proper title to it.



The two pictures show the example from a group of better students (the left hand side example) and a group of weaker students (the right hand side example). Unlike the right hand side one which only set up one section and put all information inside, the left hand side one illustrates a better framework, which starts in the content of “what is Comet”, and then spread the branches to different smaller sub-section. This is one of our teaching targets, to help students have a better understanding on information management.

## **The challenge encountered from students**

There are lots of information in web, and the coming task will be how to distinguish the useful resource from the “ocean of information”. For this, the school implemented a collaborative approach recommended in the research to handle this problem with the help of other four subject teachers. Teacher Librarian taught students how to search information by using keyword searching in famous search engine like Google. Chinese teacher taught students to handle the massive information and filter out the useful information that is related to the topic. They also encouraged students to elaborate the information but not just only copy and paste from net.

To achieve this goal, Chinese teachers trained them to find topic sentence of each paragraph and search main body and idea of article, this can help students find out more accurate and useful information, and thus do a further elaboration based on the material. As the IT teacher, the major IT knowledge like linking different type of information and the creation of sub-page and hyperlink will be taught to students in order to help them manage the information in website better (Chu, 2009).

Although Using Google Sites benefit students have a better information management and searching when they use Google Sites comparing to the traditional model of GS Projects, still they have encountered different difficulty, and mainly it is related to technical issues. The research team interviewed with students and ask their difficulty they encounter. The students expressed their difficulty on learning and using Google Sites in the first time.

“ Once I copied information from a website to Google Sites directly, but the words cannot be shown. I had to copy all those words to word in order to put into Google Sites” (problem complained by a student)

“...we find information from websites, we excerpted part of that. However, the words were still in Simplified Chinese. Thus, we need to use Google Translation to transfer to Traditional Chinese” (problem complained by a student)

These are the common problem showing that students are unfamiliar to this new technology. To solve this problem, the school organised two lessons for teaching students how to use Google Sites, and a supplementary lesson was provided to students before they started their projects. The research team also provided a handbook of using Google Sites, to guide the students on their group project (see Appendix).

## **Doubt from parents**

It is quite common to see that students’ parents misunderstand the nature of GS project. In the past, there is only online question or online exercise, the standardised platform of those online exercises imprinted in their mind and they thought that this is the only online exercise students have to do. However, students working on GS project need to visit the common search engine like “Yahoo” and “Google”, or visit some pages containing different cartoon or figure, some parents did not allow student to do since they think that their children are playing online game. Moreover, when students encountered problems in using Google Sites or other technical stuff, parents who are not familiar with Web2.0 are seldom to provide support to their children.

In order to eliminate the misunderstanding towards online project and equip parents as facilitators to support students in Google Sites, the school held a workshop to ease the parents’ worry and to teach them how to use Google Sites. The workshop focused on the complicate task which children would need support, such as creating account by typing in verification code and mobile confirmation. The workshop also taught parents how to distinguish whether students are working on GS project or playing computer games, and provide modal project so that parents could understand the marking categories and standard, and thus lead the children working in a corresponding way.

## **Teacher observation from students’ performance**

Compared to the last GS project, students had better performance throughout conducting the GS project in this semester. In the past, excluding the good students who could manage their project in quality, students in weak class could not provide enough information in their GS projects, some even could not complete their works. But once applying Google Sites in GS project, students performed better, at least this time students provide a larger amount of information, although some information are irrelevant. It can be thought that students who are in lower ability are more enthusiastic on working in Google Sites, at least they will be willing to complete the project. It is a good try to them since they can explore their weakness through doing the project, and hence the chance for them to improve.

## **Conclusion**

This paper suggests that upper primary students can use Google Sites, a wiki tool, for group project works instead of doing it with pen and pencil. Although there are some disadvantages such as increasing the burden of teachers and students to learn a new technology, the advantages outweigh the disadvantages since the tool did help improve the efficiency and performance of students in their GS project. Teachers who have not used a wiki such as Google Sites should consider applying it to facilitate their students' co-construction of group project work.

## References

- Bold, M. (2006). Use of wikis in graduate course work. *Journal of Interactive Learning Research*, 17, 5-14.
- Chu, S. K. W., Chow, K. & Tse, S. K. (2011). Using collaborative teaching and inquiry project-based learning to help primary school students develop information literacy and information skills. *Library & Information Science Research*, 33, 132-143.
- Chu, S. (2009). Inquiry project-based learning with a partnership of three types of teachers and the school librarian. *Journal of the American Society for Information Science and Technology*, 60(8): 1671-1686.
- Chu, S. (2008). TWiki for knowledge building and management. *Online Information Review*, 32(6): 745-758.
- Chu, S., Cheung J., Ma, Ma L. and Leung D (2008). Student's Co-Construction of Group Project Work Via Twiki. In Hawamdeh S., Stauss K. and Barachini F. (Ed.), *Series on Innovation and Knowledge Management - Vol. 7 Knowledge Management: Competencies and Professionalism* (pp. 27-41), Singapore: World Scientific.
- Chu, S., Chow, K., Tse, S.K. & Kuhlthau, C.C. (2008). Grade four students' development of research skills through inquiry-based learning projects. *School Libraries Worldwide*, 14, 10-37.
- Chu, S., Tang, Q., Chow, K. & Tse, S.K. (2007). A study on inquiry-based learning in a primary school through librarian-teacher partnerships. *The 2007 IASL Conference*. National Taiwan Normal University, Taiwan, 16-20 July 2007.
- Chu, S. K. W. & Kennedy, D. M. (2011). Using online collaborative tools for groups to co-construct knowledge. *Online Information Review*, 35(4), 581-597
- Da Lio, E., Fraboni, L. L., & Leo, T. (2005). *TWiki-based facilitation in a newly formed academic community of practice*. Paper presented at the 2005 international symposium on Wikis.
- Education Bureau, the Government of the Hong Kong Special Administrative Region (2002). General studies for primary schools curriculum guide. Retrieved from: [http://cd.edb.gov.hk/kl\\_a\\_guide/GS\\_HTML/english/ch4/ch42.html](http://cd.edb.gov.hk/kl_a_guide/GS_HTML/english/ch4/ch42.html)
- Frank, M., Lavy, I. & Elata, D. (2003). Implementing the project-based learning approach in an academic engineering course. *International Journal of Technology and Design Education*, 13, 273-288.
- Gross, M. (1999). Imposed queries in the school library media center: A descriptive study. *Library and Information Science Research*, 21, 501-521.
- Harada, V.H. & Yoshina, J.M. (2004). Moving from rote to inquiry: Creating learning that counts. *Library Media Connection*, 23, 22-24.
- Kuhlthau, C.C., Maniotes, L.K. & Caspari, A.K. (2007). *Guided Inquiry: Learning in the 21st Century*. Portsmouth, NH: Libraries Limited.
- Li, X., Chu, S. K. W., Ki, W. W. & Woo, M. M. (2012). Using a wiki-based collaborative process writing pedagogy to facilitate collaborative writing among Chinese primary school students. *Australasian Journal of Educational Technology*, 28(1), 159-181.
- Parker, K., & Chao, J. (2007). Wiki as a teaching tool. *Interdisciplinary Journal of Knowledge and Learning Objects*, 3, 57-72.
- United Nations Education, Scientific and Cultural Organization. Teaching and learning for a sustainable future. Retrieved from: [http://www.unesco.org/education/tlsf/TLSF/theme\\_d/d\\_mod21.htm](http://www.unesco.org/education/tlsf/TLSF/theme_d/d_mod21.htm)
- Woo, M. Chu, S., Ho, A. & Li, XX. (2011). Using a Wiki to Scaffold Primary School Students' Collaborative Writing. *Journal of Educational Technology & Society*, 14(1): 43-54.

## Appendix



# 探究式學習學生筆記

## Google Sites 使用手冊

朱敏華博士、羅曉韋、蔡國滔、李若琪、潘樂輝



Handbook of Google Sites (retrieved from <http://gefblp.pbworks.com/f/Google-Sites-Notes-for-P5-Students.pdf>)