Tablet Reading Bridging the University and Children in Remote Areas

Lih-Juan ChanLin, Fu-Jen Catholic University, Taiwan
Te-Lien Chou, National Taiwan University of Science and Technology, Taiwan
Wei-Hsiang Hung, Fu-Jen Catholic University, Taiwan

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Abstract
Facing with limited resources and human support, children in remote areas encounter many difficulties in learning and reading with the use of modern technological devices. To help these children experience mobile reading activities with innovative technology, support from the society was initiated. Services to learning sites were provided by the university. In this paper, issues related to support of tablet reading were explored. A platform for sharing experiences among different learning sites was developed. Experiences from learning sites were shared within a mobile reading community for promoting digital equity among children in remote areas.

Keywords: tablet reading, mobile reading, mobile learning, digital divide, remote area

Introduction

With advances in mobile technology, tablet reading offers an innovative way of formal and informal learning. During the past, Fu Jen Catholic University has been engaged in bridging digital divide by providing opportunities and possibilities to reach remote individuals of diverse socio-economic status (Chanlin, Lin & Lu, 2012). University students also actively engage themselves to the services for disadvantage community and children in remote areas. Being involved in authentic service activities, students are provided with opportunity for lifelong civic engagement in the community they serve. Positive attitude gained from the service activities contributes potential value to deepen the relevancy of knowledge acquisition and enrich learning experiences (Fontaine & Todd, 2011). To bridge digital divide for children in remote areas, a charity foundation donations tablet PCs to support children's reading and learning in remote areas. The university played a role in promoting follow-up reading activities. In this paper, several issues related to mobile reading in remote areas are discussed.

Preparing children for electronic reading

Electronic reading entails a combination of various skills and strategies needed to search, select, analyze, evaluate, and communicate with diverse forms of media (Chang, et al., 2011; ChanLin, 2013). To foster knowledge acquisition in various subjects, the importance of reading undertaken in childhood cannot be underestimated (Maynard, 2010). Helping children acquire the skills necessary to navigate, evaluate, and communicate with technological devices is crucial for development of literacies required in modern society (Dunn, 2013). The reading process involves intellectual and complex tasks that may encompass the use of several cognitive strategies for achieving specific objectives. Guidance for providing reading scaffold is needed to encourage active participation in the reading process (Alber, 2011).

Successful electronic reading experiences require applications of strategies in use of reading devices and use of reading content (ChanLin, 2013; Larson, 2010). Children should be encouraged to reflect on the reading content and build connections and to think in a more dynamic way. Modern technology makes electronic reading materials accessible online for children to experience the richness of contemporary and historical literary characters, themes, and genres that children and adults have cherished for generations (Hustin 2011). However, children with limited reading skills in use of strategies require guidance for applying necessary strategies to the reading process (Kulaga, 2011).

Digital accessibility

Children from remote areas or disadvantage families are characterized by inequality in obtaining access to ICT and digital reading as they are supposed to experience in the digital age. Inequalities and disparity in accessing learning resources among their children need to be addressed (Gudmundsdottir, 2010). Youths from remote areas might require much support from the society and community to help them develop necessary learning ability and skills for coping with learning obstacles (Hughes, Boyd & Dykstra, 2010). Among the support required, helping them to read and nurturing their learning skills are the most fundamental. It is suggested that children who get

encouragement to read from their living environment are more likely to enjoy reading, to read frequently, to have positive attitudes towards reading, and to believe that reading is important to success in their life (Clark & Hawkins, 2010).

Integrating modern technology into reading is essential for nurturing individuals' creativity and thinking skills in today's society so as to meet the needs in the rapid changing world. Further concern needs to be paid especially in the underserved communities to identify ways in which learning society and related policies can be more equitably implemented (Klimaszewski & Nyce, 2009; Yildiz, 2013).

Support and sharing of experience

With the aim to bridge the digital divide and to provide innovative reading opportunity, a charity foundation took the initiative in 2013 to donate a great number of tablets to children in remote areas of Taiwan. However, when new information and communication technologies are adopted, both technical and human supports were needed in underserved communities for bridging the digital divide (Govindaraju & Mabel, 2010). Fu-Jen Catholic University shared the duty to provide training to "seed teachers" (teachers who promote tablet-reading at remote learning sites) at learning sites. Implementing an innovative approach in learning activities on mobile devices requires considerations of pedagogical justifications, including relative advantage, compatibility, complexity, trial ability, and observability (Nedungad & Raman, 2012; Rogers, 1985). Supports in human resources and technical resources are both needed. A framework to organize and structure both human resources and technical support was established as shown in Figure 1.

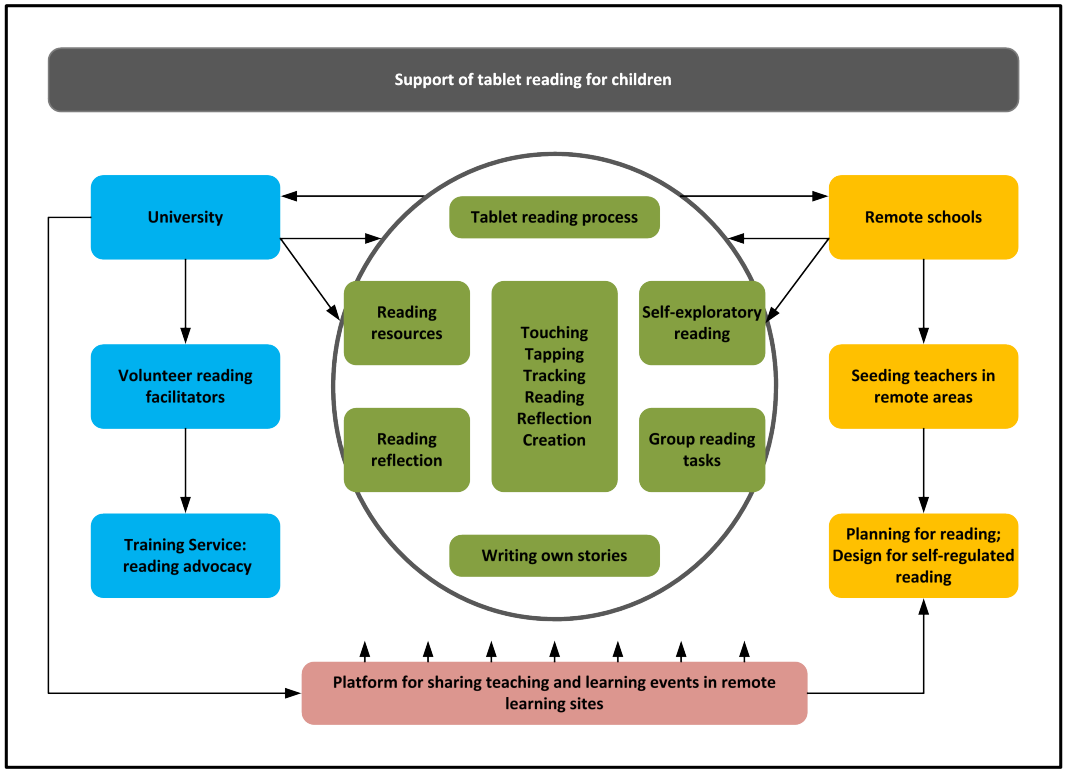

Figure 1: Support for mobile reading among children in remote areas

Preparation for promoting mobile reading entailed much planning, which included training for use of mobile devices, introducing electronic children's books, and guidance for reading. Basic hands-on guides and trouble-shooting techniques related to the use of tablet PC were provided to teachers. Teachers in remote areas were also invited to use children's reading resources available online. A wide variety of public resources on digital children's literature collections for school and library uses were introduced to teachers. With increasing digital children's literature collections and mobile applications currently available online, schools in remote areas are invited to access various reading materials free from the limitations of time and space.

A platform, "Mobile Reading in Action", was developed for exchanging experiences among learning sites. Guidance for innovative exploits of tablet PC in reading was provided. (Figure 2). Tutorials, technical supports for problem-shooting in using tablet PC, and links to various children reading resources were organized. "Mobile Reading in Action" also served as a platform for interactions among the community members (seed teachers at learning sites and supporting team members from the university library). To satisfy the community needs, various sharing and interaction functions were embedded in the platform. The website was developed by Drupal (http://drupal.org/), an open Content Management System (CMS) written in PHP. "Mobile Reading in Action" used various modules for serving the need among the community members, including setting up accounts, using features in interaction, sharing, storing, uploading/downloading documents, and managing these features. In addition to the core modules, other modules, such as user account registration and maintenance, menu management, RSS feeds, and page layout customization are also utilized.

Volunteer reading facilitators

Issues related to the value of students' involvement in service-learning actions in community are addressed (Kliewer, et al., 2010; Marichal, 2010; Molee, Henry & Sessa, McKinney-Prupis, 2010; Nanda & Scott, 2011; Ngai, 2009; Stenhouse & Jarrett, 2012). Service learning helps students to cultivate their civic behavior, and it is suggested that participation in service learning fosters students' intentions to continue their civic behavior. To provide college students with opportunity in engaging in community service, recruitment and training of volunteer reading facilitators (college students) was conducted. Electronic story books and online learning resources were also organized for tablet-reading activities. College students recruited as reading facilitators were trained to use tablet PC for promoting mobile reading.

Learning through experience in practical settings provides opportunity to encourage students' engagement in authentic activities, meet communities' needs, and enrich their lifelong social engagement (Bate, 2010; Baker, 2011). Well-organized, well-constructed and well-reinforced service-learning opportunities foster active engagement among participants within the community (Mottner, 2010). Moreover, planning for serving as a successful reading facilitator is essential to achieve intended purposes from students' service experiences.

The service tasks required skills in the use of tablet PC, access to the reading resources from the Internet, and strategies for guiding children to digital reading.

Regular training courses were provided to volunteer on weekly basis (18 hours). The course content covers: (1) How to become to become a volunteer reading facilitator, (2) Design for a specific reading topic, (3) Tool for concept map in reading (Xmind), (4) Tool for recording reading instruction (EverCam), (5) Design reading, content and extended activities and discussions, (6) Use of application software (for worksheet and poster), (7) Story guiding skills, (8) Sharing by senior volunteers, (9) Use of tablet PC, (10) invited talk of experts (instructors from the public library). In each training period, a set of questionnaire items (for formative purposes) was given to the volunteers to gather their responses toward each course.

Prior to on-site services, allocation of the human resources among team member was planned. Volunteers were assembled for rehearsing and practicing for service activities. Training for reinforcing the service skills included: (1) techniques for handling tablet PC, (2) selection of reading resources for children, (3) design of reading tasks for children (design of questions for encouraging exploration of reading contents), and (4) activities for reading with Tablet PC.

According to their on-site service experiences reported, college students enjoyed accompanying children in tablet reading. "*Good planning for various reading activities was essential for successful implementation of tablet reading for children*". "*Duration for specific reading activities should be appropriately arranged with children's attention span taken into consideration*".

College students participating in reading advocacy have experienced an innovative way of community engagement. Different from traditional promotion of reading advocacy, the use of tablet reading devices also added potential interest to college students. College students also experienced new way of planning for guiding children's reading.

Tutorials for tablet reading | Children reading resources

Figure 2: "Mobile Reading in Action" for teaching and sharing tablet reading experiences (http://tablet.project.lins.fju.edu.tw/)

Children's reading experiences reported by teachers

Reading experiences from learning sites were reported by school teachers. "Wow! Tablet PC" was the first reaction from the children. (REPORT-08L). According to the teachers' sharing, children's uses of tablet PC in reading are summarized as

follows: (1) pre-reading, (2) in-class reading assigned by teachers, (3) self-exploratory reading from the resource links provided, (4) group-exploratory reading for aboriginal tribes (stories about their own cultures), (5) reading comprehension test, (6) recording of reading reflections from children, and (7) documenting own stories from integration of reading resources. Tablet PC provided low-reading-capability children with greater access to reading facilitation. *"In order to help children with reading difficulty, tablet devices were allowed to be borrowed home for pre-reading with unfamiliar words and phrases checked in advance through dictionary app. Children's basic reading ability was thus enhanced"*.

Various strategies were used by teachers to promote tablet reading; for example, class reading competition, exploratory activities related to culture-related stories (e.g., "*Bawan shot sun*" – story for Tayal tribe), and the use of concept map to organize reading contents. "*Class websites were used for sharing reading reflections. Children enjoyed reading electronic books. In one class of my school, there were 13 students reading more than 40 e-books in one month.*" "*Children were more interested in reading e-books than traditional hard-copy books.*"

Along the reading process, students also learned to use the tablet device to record their reading reflections from the story they read and shared their reflections on Facebook. Requesting children to elicit questions while reading encouraged children to think and reflect more actively. *"Children learned to generate good questions while reading. When requested to elicit questions from reading, they were more focused on self-construction of meanings from reading materials*".

In a specific learning site, one of the group-exploratory activities was to write their own stories (such as "*Malapalu*" – at Hwa-Lien). Story-writing required reading and synthesis of various resources, guidance for access of information, and the format of presentation should be will planned and taught. "*Our children should develop ability to tell our own stories*". In the story-writing approach, children were encouraged to construct stories for introducing their language, rituals, songs, dances, and art in their own tribe. Through the process, children actively exploited and integrated relevant readings. "*In addition to reading from others' works, our children also write stories about our own tribe. They learned to search for relevant materials online, and write their own stories*".

Teachers from remote school appreciated the experiences of collaboration with the university. They also appreciated the opportunity for them to adapt new approach of reading. However, more sharing of children's work for using tablets to trigger more teachers' involvement in planning for tablet reading was suggested.

Conclusion

Mobile reading offers new opportunity for lifelong learning. With the scope of reading extending to the Internet sources, traditional reading culture shifts from paper-based to a wide variety of electronic formats. Children from remote areas or disadvantage families often experienced limited access to digital reading as they should in the digital age. In the present study, through community support, children in remote areas could experience the excitement of tablet reading. Mobile reading is changing dynamically, stimulated by new opportunities offered by advances in digital

technology. Children in remote areas require ongoing support from the society to keep pace with the dynamic reading culture. It is hoped that further research on the issues related to bridging the digital divide will be explored in the future.

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Contact email: lins1005@mail.fju.edu.tw