

***Investigation on behaviors and affectation on teachers and students
rising from use of tablet on integrated learning in primary school.***

Saifon Sekkhunthod, Rajabhat Rajanagarindra University, Thailand

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Abstract

This study was aimed to determine the behaviors and affectation rising from the use of tablet in an integrated learning for grade 1-students and teachers in the primary school. The participants were consisted of 104 teachers and 416 students. Data were collected using questionnaire, where frequency, percentage, mean, standard deviation, t-test, analysis of variance, and chi-square tests were used to determine the statistical significance of data. Results showed that all teachers had been using the tablet in teaching and learning activity for 1 to 2 years, while the students began to use tablet when they enrolled in grade 1 class. The time required for the given activities were 10 to 30 minutes per round. An affectation from using tablet for teachers yielded a high score whereas a moderate score level was found in students' activities, and the affectation between them was statistically significant difference at the level of $p = 0.05$. The gender, social activity, language, teaching workload, age and skills of teacher were differently affected on psychological conditions and overall behaviors. Students' skills in using tablet were differently affected in all aspects. Internet connectivity to the wifi/3G was differently affected the overall and learning ability. The correlation between behaviors and affectation on teachers and students in using tablet was statistically significant difference at the level of $p = 0.05$. The times, duration, time interval, places, and frequency in using tablet were correlated with physical conditions, social and language skills, and learning ability.

Keywords: behaviors; effects; tablet

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Introduction

Information and Communication Technology (ICT) plays more important role on the performance of organizations. Therefore it is imperative that organizations must adapt procedures to suit the situations that change rapidly. The ICT 's role is crucial to the economic growth of the country because investment in ICT will be able to enhance the productivity growth of the economy and help in raising Gross Domestic Product (GDP) to a higher level. ICT is also serve as an important part in the development of knowledge, and act as a provider to disseminate of knowledge and service to the public. It serves as a resource to educate people on the basis of the knowledge economy. (Limchupanipa, R., 2003). National Education Act B.E. 1999 and the Amendment (second National Education Act) B.E. 2002 give priority to educational technologies used for educational and learning experiences to learners. Learning technologies will help to improve the quality of education of Thai children in the 21st century. The policies in using information technology to provide education that meets international level. The government policy has set up a national system of electronic learning, with a mechanism to shift the paradigm of learner-centered learning and encourages lifelong learning. Teachers must be prepared to have knowledge concerning educational technology to provide technology education to students. Therefore, the government has established a project “One Tablet PC per Child” using “tablet for education”, which tablet becomes a tool for media, information technology education in the information age, and Internet access. (Pahey, S., 2012, online). The Office of Basic Education has been conducted a pilot project “One Tablet PC per Child” since 2012. The school has recruited students who are interested in this project and meet the qualifying criteria to join the project, where seven criteria have been defined, i.e., the schools have to be under the Office of Basic Education, at least 30 students or more from two classrooms per grade are selected as participants in the project, one teacher in every class is selected, at least 1 – 2 teachers who are computer literate, schools have Internet access through Fiber optic cable or IP VPN or ADSL, administrators and teachers have good intentions, with happy and willing to participate in the project, and the parents in the community are willing to support the school to participate in the project (Office of The Basic Education, 2011). The government is subsequently started to distribute tablet to the selected students, which are starting from grade one to be used as a teaching tool in the modern era constitutes for a new dimension of education in Thailand in order to deploy media technology for education in the second decade of education reform to teachers as media learning materials that are considered as important materials in teaching.

There is a need to reinvent the production of teaching materials that support new technologies for new teachers in order to help new teachers to gain access to the media and technology with guidelines how to choose and use a variety of learning managements. All teachers in the project must be trained concerning the ethical use of the tablet (The office of The technology for teaching and learning, 2012). Several issues concernng the ethical use of the tablet have been described, i.e., the responsibility for the tablet user to avoid the misuse behavior such a deceptive propaganda, or pornography; maintain the accuracy of the content presented on tablet and the content of others with reference appropriately; have the courtesy not to bring tablet to uncover the secrets of others to abuse or pedophilia; access to sources of information or data correctly, no copyright or use the information of others without their permission; the law does not take a tablet to use as the law, rules, values, and traditions of society; and monitor the

use of the tablet for themselves and others. Attempts have to be made to ensure that tablet users maintain high level of morality and ethics, while the development of human resources quality is also needed. This project can lead the nation to success in the education reform. It is hope that researchers will be interested in investigation on behaviors and affectation on teachers and students starting from the use of tablet on integrated learning in primary school. The findings will serve as a guideline in the preparation of school administrators, teachers in the future. This study was aimed to determine the affectation and behaviors rising from the use of tablet in an integrated learning for grade 1-students and teachers in the primary school.

Methods

Populations and Samples

The participants were consisted of 104 teachers and 416 students from 142 schools under The Office of Chachoengsao Primary Education area 1. The samples were recruited using the Yamane's table (Taro Yamane, 1976).

Research Tools

Data were distributed and collected using 2 rating scale questionnaires developed by researcher for teachers and students in different series. The constructed questionnaire dealing with behaviors and affection of teachers and students, which was rising from the use of tablet on integrated learning comprised of four parts, i.e., part 1 was dealing with status of teachers include gender, age, education level, major of highest educational attainment, the number of teaching hours per week, skills in using computers and the Internet, attitudes toward the use of the tablet, and the access to connect to the internet/wifi/3G. The status of students, parents, gender, occupation of parents and others as well as the teacher; part 2 was dealing with behaviors on teachers rising from use of tablet on integrated learning including year of the tablet, the purpose of using a tablet, each time applications, place the tablet on a regular basis, the time required for using, during the tablet regularly, and the frequency of the use of tablet per week. The behaviors of students that rising from the use of tablet on integrated learning, where students had been using tablet since the beginning of the project as well as the teachers; part 3 was dealing with affection on teachers and students rising from the use of tablet on integrated learning, while physical, mind, social and language, skills, teaching and learning ability were taken into consideration; and part 4 was dealing with other comments and suggestions.

Quality Detection Tools

The validity assessment of questionnaire for analyze Item of Index of Congruence (IOC) by 5 experts, where the IOC were between 0.80-1.00. After the tryout of questionnaire by 30 teachers and students, the Cronbach's Alpha Coefficient was 0.967 and 0.902, respectively.

Data collected

Data were collected by research assistant-students who were enrolled as the 5th year students in the Computer Educational program, Faculty of Education, Rajabhat Rajanagarindra University, where they were practicing as practice-teachers at the primary school under The Office of Chachoengsao Primary Education area 1. All data were collected within 15 days.

Data analysis and Statistics

Data analysis was done by package software in computer, where frequency, percentage, mean, standard deviation, t-test, analysis of variance, and chi-square tests were used to determine the statistical significance of data.

Results

The characteristics of personal status of teachers and students.

It was found that approximately 84.64 % of 104 teachers were female and 64.62 % of them were holding bachelor degree, while 71.16 % had skills in using computer and Internet access. It was found that 43.27 % of teachers had a positive attitude toward the use of tablet and to connect go the networking Internet/wifi/3G, where 83.65 % were used tablet to access the networking Internet. The variations of age of teacher in the sample group were varied among the individuals where the lowest one was 23 years old, while the maximum age was 60 years old with the average age was at 41.91 years old. The value of standard deviation was 12.109. In the 2nd semester of the year 2014, where the average of teaching hours for teachers was 16.89 hours per week. It was shown that 52.16 % of 416 students were female, while 35.82 % of parents were working as employees in various organizations. It was found that 57.21 % of students had moderate skill in using computer and ability to access Internet networking, while 45.67 % of students had a positive attitude toward the use of tablet to access Internet networking/wifi/3G at the moderate level, and 75.00 % were used tablet to access the Internet networking/wifi/3G.

The behavior of teachers and students in using tablet.

Results showed that 59.62 % of teachers had been using the tablet in teaching and learning activity for 1 to 2 years, where 50.96 % used tablet for teaching purpose. The frequency of times required for teachers that used tablet for teaching purpose, which varied from 10 to 30 minutes per round was 40.38%. It was shown that 51.92 % of teachers were regularly kept the tablet at home, and 43.27 % of teachers used tablet for 1-2 days per week. It was shown that 87.02 % of students began to use tablet when they enrolled in grade 1 class, while 28.61 % of students were aimed to use the tablet for practice skill by playing educational game. Students spent 10 to 30 minutes per round was 39.66 %, where 69.23 % of students kept the tablet regularly at home, and 46.63 % of students use tablet regularly during the holiday, which 50.96 % of student use tablet for 1-2 day per week.

An affectation from using tablet of teachers and students.

It was shown that an affectation from using tablet for teachers yielded a high level (mean=3.51), where three aspects were affected at the high level, i.e., skills, teaching ability (mean=3.80), social and language (mean=3.47), whereas two aspects were affected at the moderate level, i.e., physical (mean=3.25) and mind (mean=3.05).

An affectation from using tablet for students was found at the moderate level (mean= 3.00), where five aspects were affected at the moderate level, i.e., skills (mean=3.15), learning ability (mean=3.13), physical (mean=3.01), social and language (mean=2.29), and mind (mean=2.83).

The comparison of an affectation among teachers and students after using tablet.

An affectation from using tablet among teachers was statistically significant difference at the level of $p = 0.05$, where the gender of teachers was differently affected on social

and language. The ages of teachers was differently affected on overall and mind, while the teaching workload of teachers was differently affected on teaching ability. The skills in using computer and Internet access of teachers was differently affected on overall factors, physical factor, and mind.

An affectation from using tablet among students was statistically significant difference at the level of $p = 0.05$, while the Internet connectivity to the wifi/3G was differently affected on the overall and learning ability of students. The parents' occupations of students were differently affected on learning ability. The skills in using computer and Internet of students were differently affected on overall, physical and mind. social and language, skills, teaching and learning ability.

The correlation between behaviors and affectation in using tablet of teachers and students.

The correlation between behaviors and affectation on teachers in using tablet was statistically significant difference at the level of $p = 0.05$. The times duration in using tablet were correlated with physical conditions. The time interval in using tablet were correlated with mind conditions.

The correlation between behaviors and affectation on students in using tablet was statistically significant difference at the level of $p = 0.05$. The times duration, time interval, places, and frequency in using tablet were correlated with physical conditions, social and language skills, and learning ability.

Discussions

The results of an analysis on the behavior of teachers and students showed that most of teachers had been using the tablet for a period of 1-2 years, while most of students started to use tablet when they enrolled as grade 1-students. This may due to the advantage of technology and modern communications that help to invent innovations on a portable computer or notebook computer, and portable new devices including tablet, which are widely used around the world starting from the year B.E. 2011. The government policy of Thailand has endorsed the statement to the parliament to supply and distribute tablet to students who enroll as the grade 1-students since the year 2012, and let the students make use of the tablet in the country during that period. Teachers are expected to use the tablet for teaching purpose, while students are expected to use tablet as an enhancing educational materials. All teachers should be knowledgeable understanding with skills in using tablet for the application of learning activities in the class. Teachers should be prepared to modify the classroom to facilitate the use of tablet in teaching activities. Students are expected to apply the educational game for developing skills and reading practice where both Thai and English language are currently available. This expectation is consistently found in the study on students using the tablet and computer for educational purposes in Bangkok (College of Technology Siam, 2013), where approximately one out of three students or 34.89% use tablet computers for educational purposes. It has been shown that most of the students spend time about 30 to 60 minutes in using a tablet PC for educational purposes about. It also has been shown that students use the tablet computers for their entertainment rather than educational purposes, i.e., playing games, viewing video or movies, and social network activities. The most important reasons that related to activities in using a tablet PC for educational purposes are given as follows, i.e., quick

and easy to find information using search engine, can be used anywhere and anytime, easy to use, portability and easy to carry around, and ample of storage ability.

Results of using tablet that affected on teachers were found to be at a high level, where only three aspects, i.e., skills, teaching ability and language, were affected at a high level. This affection is probably due to the ability of teachers that are able to adjust their teaching methods in accordance to the process of change. Most teachers are always seeking new contents in order to develop innovative learning activities. Therefore, all teachers need to understand learning and information technology in order to apply and blend them in teaching activity very well. This study is involved all of administrators, teachers and students to put skills into practice together properly in order to achieve maximum efficiency in learning and management of education. The study is focused on the learner and the learning process, which have too many varieties. Since knowledge is not only available in the school, teachers must change themselves to act as "the director" who can help or guidance students for their learning process. This finding is relevant to the study using a tablet in the Bring Your Own Technology (BYOT) project (Wattananarong, K, 2013), where teachers use the tablet in teaching and train other teachers to become acquainted with this new practice. The processes in this new practice are consisted of the preparation in teaching, feelings pursuits, and an evaluation of learners and trainers. The teacher that uses the tablet for teaching purpose is affected only when the teacher has the intention to teach student more effectively and gain more effectiveness. Teachers have to put an effort for making it possible to adapt contents to the local environment, to students through various channels in the pursuit of knowledge for students in order to make students become more interested and enjoy learning.

The affection on students from using tablet is found to be at a moderate level, where all aspects are affected to students at the same level. The highest average of affection was the impact of skills. This observation may relate to the facts that there is no language barrier for reading English, which is the international language uses in news and social movements. Using tablet in the classroom is affected on students' reading skills and resulted in reading fluently, where they can overcome the difficulty in reading with the correct pronunciation. The students can listen to a correct pronunciation in reading materials that can be accessed through the tablet where they can practice reading it too. Students are also able to read books from tablet where they can reduce reading time from other text books. It was shown that students could answer questions correctly from the story books. The writing skills of students are also improved after using tablet for quite sometime, where they can spell the word correctly after self-practicing on the tablet. According to the handwriting message of students, it has improved tremendously because atypical grasp in writing on the tablet is done by using just one finger stroke. Students do not hold the pen, but just simply drag a finger alphabet. or dip the appropriate button. However, this practice is lead to an unfamiliar with the pen, or penmanship as they should. Students are accurately calculated, and have fun in playing games concerning the calculation of numbers. It is shown that when students start to learn how to count numbers, they can do it with more accuracy. It is observed that students can get a high score in the game involving math lesson on the tablet. Students can practice self-learning to avoid the pressure from the peer group and are able to improve themselves to catch up the peer group. It is found that the use of tablet in the classroom is lead to the student's participation in the class with a high motivation to learn. The skill in reading, writing, and numeracy are

improved moderately as perceived by teachers. The average opinion of teachers in learning of mathematics in Thailand suggests that the skills in thinking and calculation of students in mathematics are higher than those students who take science, social studies, and English at a statistically significant level .05. (Siripila, S., 2014), which is agreed with studies using a tablet by the BYOT project (Wattananarong, K, 2013). Our observations show that students have a good attitude toward the use of tablet for its easy to use and the usefulness in using it, which can enhance their learning achievements, research, and collaboration. The using of tablet does not affect the physical health, but the students need more time to spend with tablet.

It was shown that several factors that might affect the behavior of teachers, i.e., gender, age, the teaching load, the accessibility to the Internet/wifi/3G, educational level of training, skills in using computers and Internet, and attitudes toward the use of tablet were not statistically significant difference at the level of $p = 0.05$. It was found that several factors of students, i.e., gender, the ability to access the Internet/wifi/3G, occupation of students' parents, skills in using computer and Internet, and attitudes towards the use of the tablet, were differently affected on overall behaviors, whereas all aspects were not statistically significant difference at the level of $p = 0.05$. These observations may relate to the environment in today's modern society, and a society of learning, where media share as important parts in educational system rather than to be used only in the development of effective learning. The tablet computers become to be an essential part in learning activities for teachers, students, parents, and all users without gender discrimination, qualification. Results of this study suggest that using of tablet has no statistically significant difference against the impact on physical,

psychological, social and language skills, and the ability to teach, which is agree with the results of a study of the Office of Singburi Primary Education (Jaidee, 2013)

Results of the study revealed that the correlation between behaviors and affectation on teachers in using tablet was statistically significant difference at the level of $p = 0.05$. The times duration in using tablet was correlated with physical conditions, while the time interval in using tablet was correlated with mind conditions. The correlation between behaviors and affectation on students in using tablet was also statistically significant difference at the level of $p = 0.05$, where the times duration, time interval, places, and frequency in using tablet were correlated with physical conditions, social and language skills, and learning ability. This observation is related to the behavior of using tablet for both teacher and student groups, where they use the tablet too often and for too long. Therefore, physical health and mental health of children that using tablet to access to the Internet can create an unknown physical symptoms such as headache, back pain, joint pain, abdominal pain, chest pain, fatigue, etc. These symptoms will disappear after stop using tablet. Other symptoms that may relate to activities in using tablet are the behavioral sleep-wake up call due to the time requires for a rest is not enough. Since the secretion of growth hormone is occurred during sleep is not fully function. This activity will cause children to grow slowly, and affect the learning of children. If the children sleep on the tablet, it would makes children feel hungry, where they usually find snacks to eat with no physical activity. This practice requires a lot of energy to burn during that period, and resulting in an overweight of the children. It has been shown that the addiction of using tablet has psychological impact on the child's age, where there is a need for the adaptation by imitating personal favorite, and the values are based on a shared sense that we imitate it. It is observed that the behavior of using tablet has impact on social and language that can cause a

lack of self-control resulting in changes in the relationships within the family. This observation is related to a misunderstanding and conflict that occurred in the family. The impact of using tablet in the classroom can affect students' reading skills in the positive way for those students who can not read it. The listening part of speech that is available in a tablet is the best method to improve the listening skill because the tablet users will experience the proper pronunciation of native speaker. They can learn it anytime when they are free and as many times as they need.

An improvement of teaching skills of teachers is affected immensely by using tablet. It has been shown that several practices, i.e., preparation of teaching materials and lesson plans, rehearsal teaching activities from the teaching notes that are easily to modify or change, and adapt contents to the local environment, can enhance the improvement of teaching skills. It is also observed that the learning activities of students are affected in various way, i.e., the participation of students in class room are increased due to the reduction of time for each session to 30 minutes with higher motivation to learn in that given time intervals, and students are always eager to learn new things that can be loaded into tablet.

Suggestion

I would like to make some suggestions that both teachers and parents should set time limit for each session in using tablet to be not more than 30 minutes, with a relax manner and look after their health during or after the session. There is a need for teachers to develop an application for software that promotes learning activities. It has been shown that a narrative cartoon is appropriate for children in primary school level regarding their cognitive and effective response, where a narrative plays an important role in motivating continued active videogame play. Teachers are encourage to develop an integrated English with major Asian language to be used in a narrative cartoon videogame. All administrators and teachers should learn how to motivate and encourage students to learn and practice in Information Technology. The precaution against the Computer Crime Act BE 2550 should be given to all computer and tablet users including students' parents to be aware of this Act. Teachers should learn and develop skills in using tablet and always maintain their abilities and skills to be actively performance. The impact of using tablet for teaching purpose in primary schools should be investigated more concerning how to motivate all teachers, students and parents to become continued active learning by using tablet.

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Contact email: saifon_sek@yahoo.com