

# Application in Education of communication apparatus of PHS Phone

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**Abstract:** □ This study intends to investigate PHS phone and its application in an elementary school. The interview process targeted on the projector who directed the plan of PHS phone from an experimental elementary school located in Kaohsiung County, southern Taiwan. She joined all of digital experimental project and observed interaction between the parents and their own children in that specific elementary school. In the experimental period, the projector observed each parents using a PHS phone through message transmission and mobile net communication, and the parents discussed and shared feelings with the teacher and other parents through using PHS phone. The research summarized the projector's ideas and provided references opinion information to instruction designers and mobile learning projectors to develop further innovative instruction.

**Keywords :** - Personal Digital Assistant, PHS Phone

## 1 PREFACE

The population of surfing the Net increases fast on the whole world. Net surfing has already become one of people's habits and customs. The upgrading constantly of apparatus of action, it will be so as to have a on-line network to grow up fast. According to eTForecasts's survey report point out[1]: In the end of 2002 over 6 hundred million or 6500 ten thousand people scale population that surf the Net on the whole world, and predict in 2005, the population of surfing the Net will top scale of 10 hundred million. Population of the on-line network would not be up to 2 hundred million or 6500 ten thousand in 2003, Among them, the population to surf the net of U.S.A. is the first place of the world, secondly it is Japan, China, Germany, Britain and etc., Taiwan ranks the 15th place of the whole world. Predict in 2010, North America, western Europe and Some Asian-Pacific countries including Taiwan, that

will have the world-leading behavior in the network and wireless communication.

So, the purpose of this research is in the application in education of equipment for surfing the net of action of taking type of relieving oneself, and offer educational authorities and teacher to kiss the reference basis that a teacher communicate[2] [51]. [8]

## 2 PHS OF DEVELOPMENT HISTORY OF THE ACTION COMMUNICATION APPARATUS

### 2.1 The communication exhibition of Beijing is exposed for the first time in 2002:

Sanyo in Japan, exhibits a lot of communication products in the communication exhibition of Beijing. Among them, the most surprise PHS cell-phone is named J89. One

month later, J89 issued in Taiwan, and its price is very low. PHS is one kind of the palmtop computer, and it is a simple and easy computer of the small volume [3].

## **2.2 PHS Definition of the action communication apparatus and Market situation:**

Under the digitization, wide band of the network and network interdynamic, traditional consumption electronic product combine gradually with computer and network. More and more consumers utilize user's end products, pass the digit network, get information of the pronunciation, data, Video-information and internet. In order to simplify the network-ing course, or cooperate with the particu-lar demand, Information appliance(IA) have got rid of the complicated structure of PC[4] [9]. Generally speaking, cheap, help, easy to use are Spirit of IA. The products of IA can be divided into three kinds in accordance with different environments: Environment of network operation of enterprise's users, Centre of family's users' amusement multimedia, Information station that personal users' individual takes action and, etc.. Among them, User's market of enterprises includes According to IDC definition of PHS: The products have functions that manage personal information, editor's simple and easy characters, weight is lighter than 1 pound, adopt the open or closed operating system. But, in realistic world, function of device of various types on the palm that can be carried is pluralism gradually[3] [5] [6]. The function of PHS is managed from the simple account too, further extend to the communication, receive and dispatch email, and etc.. So, in asserting, the function that this device offers accords with the use of several assistants of individual, it can be called the PHS cell-phone.

## **2.3 PHS, The type on the palm assistants of several of individuals' kind and characteristic:**

At present, kind and specification of PHS on the market are not unified, Can be divided into five kinds in accordance with different operating systems:

### **2.3.1 Stereoscopic sound of 32 chords, Seven kinds of color:**

The ring tones of the chord is one of the indispensable conditions of popular mobile phone, J89 possesses the stereo-scopic sound of

32 chords, Sound of electric bell that the ones that can choose 43 at most come, It can support the function of edit and record, download the ring tones by oneself.

### **2.3.2 Directory of the space oversize, Super-strong e-mail function:**

Build 200 directories in J89, it can set up into ten groups, each name can import three names and two mail account numbers. You can log in to the materials of relatives and friends.

### **2.3.3 Important function of the Sanyo J89 cell-phone:**

The PHS cell-phone of the first screen of Taiwan: It is the gray steps of four colors that its other screen supports seven kinds of color, interior screen. It can create 14 kinds of incoming telegrams and glisten by oneself, the suggestions of going through, mail, etc. that can apply to the incoming telegram, be at a disturbance of the bell, act.

2.3.3.1 Choice of the sound of electric bell comes in the ring tones of 32 kinds of chords, 43

2.3.3.2 Build inside 6 pieces of monotony, 6 The first electronic sound, 10 Ring tones of the first chord

2.3.3.3 Can download, work out by one-self 10 rings tones

2.3.3.4 One together Recording the ring tones by oneself of 15 seconds

2.3.3.5 Build the game in a group

2.3.3.6 95 kinds of characters of painting, 223 Plant the characters editor's symbol

2.3.3.7 271 terms: Build in 221, 50 Make up by oneself

2.3.3.8 Making up terms by oneself can be reached 18 Chinese words

2.3.3.9 Fast Net surfing key: MiMi shortcut @Key

2.3.3.10 The incoming telegram is re-fused to be connected

2.3.3.11 Answer, act and go through automatically, the alarm clock, drop hole are designed

2.3.3.12 There is no voice control function

2.3.3.13 Walkie Talkie □ Can make wire-less interphones in 100 metres

2.3.3.14 Roam Japan in original chance, travelling on official business need not change the mobile phone.

In addition, EPOC is the highest hand-held device operating system of the European occupation rate. Besides applying to PHS, EPOC is often used the bikini computer too. (for example Psion 618C is comparable to purpose to hold high) With system of mobile phone ' Such as Ericsson R380 and Nokia 9210) . The characteristic of EPOC operating system lies in its key technology includes the strong standard communication protocol and Java (Java) Language. Let EPOC have very good behavior in wireless technology and internet network. However, be-cause has not supported one pair of word groups Unicode at present, in unable to reveal Chinese situation accept by Taiwanese while being relatively more difficult.

Just as spoken before, Initial design idea in domestic PHS market of Taiwan, it is the electronic product with PIM function. So design the respect not to need very good treatment efficiency in the hardware (pace is from 16Mhz to 33Mhz) Match the storing device of 4 to 8Mb. Most Palm has chosen 16 gray steps of liquid crystal screens as the device of revealing, it have characteristic of saving the electricity very much. The software part is a hardware which cooperates with Palm, There are advantages such as small, of simple structure and high optimization, etc..

### **3 PHS ACTION IN KISS TEACHER LINK UP APPLICATION AT COMMUNICATION AP-PARATUS**

In U.S.A. K12 Handhelds [2] Point out in websites: Many kinds of teaching methods of PHS cell-phone in kissing a teacher and communicating. And is suitable for the project that Taiwan implements, set out and tabulate to offer the domestic re-searcher to consult as follows:

(1) management application:

(a) Newer journey is noted down at any time.

(b) Follow the trail of student's progress in professional technique.

(c) Use the electronic calculator.

(d) Read or store student's information immediately, such as the planning chart, Demography.

(e) Plan one's own reading the booklist.

(f) Take notes at the meeting or in having a class.

(g) Record and do tabulation demonstration match

(h) Store and use the course project.

(i) Store and track students' IEPs.

(j) Track, sort out and control stock tabulation in the chemical laboratory and security information.

(2) Communication and cooperative application:

(a) Convey the E-mail.

(b) Convey or receive the fax.

(c) Regard as a terminal machine

(d) Regard as the mobile phone

(e) Help students and the parents to transmit the activity information of the school

(f) Exchange information between the colleagues

(g) Share the downloaded webpage information with others

(h) Send information home and allot work to parents

(i) Let student use electronic way to deliver designated work.

(j) Let parents sign.

(k) Convey the file from your PC.

(l) The e-book of what oneself finishes is shared with others.

(m) Study on-line course.

(n) Convey or receive the instant message.

(o) Implement it with the activity of writing of the group.

(p) Record the note of proving.

(q) Receive on-line education incident and news.

(3) Teaching and application in study.

(a) The appearing or storing of digital photo.

(b) Produce Excel.

(c) Draw.

(d) Summarize the whole chapter in a manner to draw the concept picture.

(e) Produce or foresight or solve the formula

- (f) Can follow the trail of your class plan, task, and grade.
- (g) Record and observe in a field research.
- (h) Read the e-book.
- (i) Localize that the global satellite of use navigates.
- (j) Study and create the music.
- (k) Make use of figure to display data.
- (l) Observe and use the map.
- (m) Utilize the probe to collect the materials of temperature, luminance, voltage, pH and other projects.
- (n) Can arrange yourself Personal Digital Assistant's application program.
- (o) Lead measurement to study.
- (p) Regard in the classroom as the note-book.
- (q) It is handwritten to practice.
- (r) Practice the foreign language
- (s) Collect and analyze the materials of the environmental topic
- (t) Note down the incident immediately.
- (u) Regard as the dictionary to check words.
- (v) Set up to students and note down healthily.
- (w) Practice the multiplication table.
- (x) Use the periodic table.
- (y) Manage the cooperative program.
- (z) Make photo album.
- (aa) Listen to and study the classical music.
- (ab) Read the present big event.
- (ac) Study astronomy.
- (ad) Set up glossary by playing with words.

#### 4 RESEARCH APPROACH

This research, according to the purpose of studying, probe into relevant literature. Choose a high student and parents who participates in an experiment class in several experimental schools studying special project and studying in Xiong County. Allot a PHS cell-phone with each of parents, send through news in brief and action Net surfing function, probe into it to enable and have diligently, propose the conclusion after use. Offer educational authorities and reference basis of teacher's innovative teaching.

#### 5 The merit and shortcoming

Research procedure of this research, it is after probing into relevant literature, select the experiment teacher participating in studying; Secondly, Draft half a structural interview outline according to the need of studying first,

and after revision via the experts and scholars, then, carry on group's interview of the focus.

##### (1) Study tools

##### (1.1) Study the background of the case

This research includes six experiment parents and teachers, are all cases of participating in the experiment in the whole journey and never cutting off. So, 6 experiment parents and Mr. these become representative cases of this research.

(1.2) The result of expert of the interview outline spends the tar-get

This research is the result degree of expert who sets up interview outline, by having deep use experience and research to several assistants of individual, and have background of education speciality, seven experts teaching in the institute of special school of the skill, the expert taking on the interview outline of this research together consults the marriage partner.

## 6 ANALYSIS AND DISCUSSING

Analyze, divide and state it as follows via the interview text:

### 6.1 Teacher is using the experiment for initial stage of several assistants of PHS individual, almost to communicate has no help in kissing a teacher:

Experiment Mr. use individual several assistant, assist initial stage such as teaching, wait, familiar with to individual several assistant of every application functions; So, it is un-able to communicate helpfully in kissing a teacher.

The experiment teacher puts forward the following views:

*I have thought of a new idea in the school. The achievement that this idea applies to the class is dealt with. At the very beginning, because not that it is used very skillfully, It takes a lot of trouble (AA01) to even get in touch with the book more again than season sometimes .*

*PHS prevails very much now, I study those scientific and technological upstarts, Family and student all support very much, cooperate and use in teaching activity even more. Just the students all look forward to the new function of PHS very much, but I am often disappointing (CC01) be-cause of can not operate very much .*

### 6.2 Because of the increase of teacher's use experience of the experiment, and

**then stimulate and kiss a teacher to communicate:**

Teachers and parents are while using several assistants of PHS individual, it will do some good to use experience with growth of time. Relevant websites have offered the consultation of various fields and got in touch, irritate the teachers and admire and construct the attempt that communicated.

The embodiment is as follows,  
*I find PHS from the procedure of creating at network often, it can apply to teaching. I myself am in the experiment at present, Ask parents to try too, but The result has not been verified (BB02) yet .*

*I will put forward one's own experience and gains in the relevant websites of PHS too once in a while. Hope that can utilize the mutual view on everybody. Have never expected that there are partners that have unexpectedly left some suggestions on me on websites. PHS becomes my new assistant of communication (DD03) !*

**6.3 Several assistant, individual of PHS, apply communication to, although rare already, user utilize, promote, kiss teacher still feel novel to link up**

Several assistants of PHS individual have been assisting a personal scientific and technological assistant all the time. It is not tall that the teachers use the proportion of several assistants of individual, but with the facility of the inter-net network. Kissing a teacher to the teachers who use several assistants of individual to communicate, it is no longer a fresh noun. Test a teacher and share the gains to several assistants of individual now, analyze that descriptions as follows:

*Think that there should be different ideas, Thinking that must be creative. So, every-body is using the experience of PHS, Will discuss in the network. I once have no intention of finding to a website. The good hand enables and sharing diligently in covering with one above, Let me learn many (FF03) .*

*Utilize PHS to paint, record with the form of observing the plant of the open air of scientific and technological course of life naturally. Teachers and students can share experience too. It is really interesting, students feel very fresh too □BB05 □.*

**6.4 Of the course of PHS individual several assistant, except ability of communication, lead the teacher to be**

**exposed to and use science and technology, assist and kiss the key that a teacher communicated especially.**

The experiment teacher knows the valuable scientific and technological speciality to can be applied to teaching, it is the new result that the science and technology brings to kiss a teacher and communicate. The experiment teacher proposes the evidence is as follows:

*The child who plays with science and technology is really very happy. We play with PHS by oneself, the children play with GameBoy. PHS, for them, it is not a thing very difficult to understand at all. PHS is very easy to accept for child. As to teacher, it is more simple and more convenient. There is the assisting of it, we can write down the item of the class with every day □EE05 □.*

*Because of PHS, let me welcomed in the school by students very much. They will say I hand-carry a bikini computer, very serious oh! Too because like this, I always use the note type co-puter, products such as the single rifle projector, etc. which is a Auxiliary teaching. Technology gives me much feeling of fresh-ness and value. Let me become one Mr. to look for novelty changes persuing □BB04 □.*

**7 CONCLUSION**

This research finds it as follows according to six experiment teachers' interview text:

- (1) Teacher is using the experiment for initial stage of several assistants of individual, almost to communicate have no help in kissing a teacher.
- (2) Because of the increase of teacher's use experience of the experiment, and then irritate and kiss teacher's frequency of linking up.
- (3) Several assistant, individual of PHS, apply teaching to, rare already, user popularize on kiss teacher link up even more.
- (4) In the course of several assistants of PHS individual, except lead the teacher to be exposed to and use science and technology, kiss the key that a teacher communicated especially.

Use the scientific and technological products, bring to the teachers no matter on teaching or kiss the additional value that a teacher communicates greatly. At the beginning, because is raw, lead to the fact that unable to apply to and kiss a teacher and communicate immediately. But employ the teachers of the scientific and technological products, it seems that there is a common speciality. They will not be discouraged because like this, will make more efforts to try

the new products instead, and then promote and kiss the channel that a teacher communicates. Convenience of taking away of this digit tool, and then pursue and make use of scientific and technological products to innovate and communicate. Have offered to PHS individual it in the plural use that several assistant use to several information, Upgrade the use of the aspect and expansion of development field. In this research, we have been echoed. This result which offer education partners liking to try to use new developing science and technology to work in the teaching practice more to use refer-ence in the future.

- (5) Keep on promoting teachers and students' ability of information cultivated manners continuously
- (6) Promote and apply information science and technology in the learning activity.
- (7) The management mechanism that the school administration overall administration computerizes.
- (8) Use the teacher social group, and establish a digital database.
- (9) Establish barrier free learning environments, and reduce digital variances.
- (10) The network learning environment popularizes and expands.
- (11) Correct information attitude, respect information ethics.

The information society arrives, the change of education system and society structure is already an inevitable trend. If the teachers have no self-reflection abilities, the role of teachers has no self-adjustment, the social education prospect of information of science & technology then will carry out smoothly. The most important core principle is really effectively application of information of science & technology and integrates learning realm. If can follow an above-mentioned trend, the educational vision of information of science & technology will be a slice of bright.

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