Library Hi Tech

The design and implementation of a Mobile Library APP system

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EXPERIENCING MOBILE LIBRARIES

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Abstract

Purpose – The purpose of this paper is to increase usage rate of libraries in universities and colleges, this study developed a Mobile Library APP System and analyzed users' usage and level of satisfaction. The analysis results served as the reference for the development and improvement of libraries in universities and colleges' mobile information systems.

Design/methodology/approach – This study developed a Mobile Library APP System and probed into and evaluated college students' usage and level of satisfaction with the system by using questionnaire. Individual interviews were carried out to find out their standpoints and opinions about their library usage via mobile technology.

Findings – The analysis of experiment results showed that students' attitude toward the Mobile Library APP System was highly positive. This indicated the system certainly assisted them in increasing their work efficiency and their willingness in continuously using this APP system in library-relevant activities.

Practical implications – Students' viewpoints indicated that, by using Mobile Library APP System, they could effectively searched for books, magazines, e-books and other e-resources in a timely manner. The time spent in information searching was shortened and individual work efficiency was promoted. Moreover, in interview sessions, students suggested to add categorized search, book recommendation, book discussion and other functions to increase user population and willingness of continuous usage.

Originality/value – To find out the actual usage of the Mobile Library, this study developed the Mobile Library APP System and invited students of National University of Tainan in Taiwan to be experimental subjects. The results of data analysis indicate that the system acquires highly favorable view from student. Thus, it can be inferred that research results of this study are representative and have practical values in real world practice.

Keywords Library services, Library and information networks

Paper type Research paper

1. Introduction

With the unceasing advancement of mobile technologies, mobile devices, including smartphone and tablet PC, develop rapidly (Starcic *et al.*, 2013). More users use mobile devices to view web sites anytime and anywhere (Yong *et al.*, 2014). The popularization of mobile internet pushes traditional internet service providers, such as Google, Yahoo

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and other portal sites, to provide mobile web sites. Moreover, Facebook, Twitter and other social sites also develops web page application services for mobile devices (Danielle *et al.*, 2013). Compared with complicated content in traditional web pages, the interface of mobile APP web sites is designed to be clear and concise, which can quickly deliver data and information that users require (Lorraine and Boon, 2011).

Gradually, many libraries sense this trend and start to ponder on methods of providing innovative services by using mobile technology. Mobile innovative services of library means that a library utilizes mobile technology to allow is readers view, search and obtain library services without being limited by time and place (Chang, 2013). Kroski (2008) indicated that introducing mobile information technology could be seen as the innovation a library could achieve. This includes more users of mobile devices than that of computer of laptop, omnipresent content, diversified users being attracted and reader-orientated, personalized services. Thus, it can be inferred that mobile technology is the trend of the future. By using mobile technology, libraries can provide users with more convenient and highly practical library services.

According to Huang and Chiu (2014), the popularization of 3G/4G software development and hardware equipment's led to the explosive increase of mobile technology users. As the result, more students and teachers use tablet PCs or smarts phones to read e-books and e-journals. E-resources and mobile libraries imperceptibly become their important channel to obtain information. This indicates mobile technology with APP services has become a vital resource for learners to acquire knowledge.

In view of this, this study took mobile technology as the research theme and developed a Mobile Library APP System for National University of Tainan on Android operation system. It let students and teachers quickly search for desired book information. The aim of the system was to provide users with innovative and practical library services.

Based on the above-mentioned motivation and background, the main objectives of this study are as follows:

(1) developed a Mobile Library APP System that addressed the needs of college students;

(2) found out users' usage and level of satisfaction of the Mobile Library APP System; and

(3) made suggestions on further improvement of a Mobile Library APP System in accordance with research results.

2. The rationale of Mobile Library

With the unceasing advancement of mobile technologies, mobile devices developed rapidly. Thus, learning activities could be proceeded anytime and anywhere (Lai *et al.*, 2014). Wang *et al.* (2012) indicated that, with the popularization of 3G mobile technologies, more people gained access to internet to view web site, receive and send e-mails and read e-books with smartphones and tablet PCs on metro, bus or train. It could be inferred that learning activities no longer limit to classroom or scheduled time. By combining mobile devices and wireless technology, learning guidance and feedbacks could be given according to learners' learning situations and learning environment (Huang *et al.*, 2014).

A number of libraries gradually sensed this trend and combined their services with mobile technology to created so-called Mobile Library or M-Library. In fact, the concept of Mobile Library or M-Library was brought up by scholars when PDAs were still in development. For instance, Janet (2009) adapted mobile technology and combined PDA with library orientation and collection search services. However, at that time, mobile devices and wireless technology were not mature and popular.

Recently, mobile technology combined with mobile devices has become an important information collecting channel. A greater number of students and teachers also use tablet PCs and smartphone to search for e-journals, e-books and other e-resources (Parsons, 2010). Therefore, numerous libraries introduced mobile technology in library services and developed mobile information systems compatible to mobile devices in order to allow their users quickly search for desired information (Wang *et al.*, 2012). This indicated that Mobile Library has become a vital resource for learners to acquire knowledge.

3. Design of the Mobile Library APP System

Traditional digital libraries focussed on providing enriched and abundant e-books and e-resources to their users. However, most libraries still needed to have access to these e-books and e-resources via internet. For users who intended to search for library resources anytime and anywhere, it was obviously inconvenient. In view of the drawback, this study took mobile technology services as the research theme and developed a Mobile Library APP System with Android open source code for the National University of Tainan Library. With the system, staff, faculty and students could easily search for desired book information. The objective was to provide more convenient and highly practical information services. The function module structure of the system is illustrated as Figure 1.

The system adapted Android open source code to design and develop the Mobile Library APP System and could be installed on tablet PC, smartphone and other

Figure 1.
The functional architecture of mobile library APP system

mobile devices. The mobile APP interface customized for the library let staff, faculty and students of the university easily view book information with their mobile devices, including looking up book collection, new book of the month, personal library record or book reservation. The interface of the system included "News, Online Catalogs, New Book Notice, View Your Record, Floor Information, Library Rules and other information and function system configuration. Please refer to Figures 2 and 3.

This study developed the Mobile Library APP System by using IBM Eclipse, a cross-platform integrated development environment, as the main development

Figure 2.
The function design interface of the system

Figure 3.
The user interface of the system

platform. Eclipse possessed complete Java-based graphical interface and was compatible to Android open source code. This study developed a library information system integrated with mobile technology. The operation procedure of system functions, such as Online Catalogs, View Your Record, is shown in Figures 4 and 5.

This system allowed users to download the APP via internet and to install it on smartphone, tablet PC and other mobile devices. In the past, when users wanted to view library web site, they need to link to library web site with a web browser. By installing the system, they could run the APP and quickly search for book collection, read latest news of the library, know new book of the moth and check their borrowing record. It can be seen that the system provided users fast, convenient and highly practicable mobile library services. Figure 6 illustrates use case diagram of the system.

4. Methodology

4.1 Development of instruments

This study adapted questionnaire to probe into college students' usage and level of satisfaction on Mobile Library App System. Therefore, to develop effective questionnaire content, this study consulted past research before designing questionnaire items (Balaban *et al.*, 2013; Wang and Wang, 2009; DeLone and McLean, 2003). Upon the completion of questionnaire first draft, ten college teachers were invited for pretest. Wording in questionnaire items were amended according to pretest results and suggestions given by some teachers in the hope of generating more mature questionnaire content and letting interviewees understand questions with ease before officially launching it.

The questionnaire contained 20 question items in five categories, personal data of the respondents, information quality, system quality, system satisfaction, system efficiency. The operational definitions of five categories are illustrated in Table I. The questionnaire utilized Likert five-point scale and set five options for the level of satisfaction. The most positive opinions scored 5 points while the most negative 1. The working and phrasing of question items were positive.

4.2 Data collection

The Mobile Library APP System developed in this study was focussed on National University of Tainan in Southern Taiwan. Therefore, the interviewees of the questionnaire were undergraduate and postgraduate students in the university who used Mobile Library APP System. The questionnaire is carried out between December 2013 and January 2014. In total, 250 questionnaires were distributed; 238 were received. Among them, 22 invalid questionnaires were deducted; 216 valid questionnaires were used as analysis sample of this study. The effective response rate was 86.4 percent.

5. Results and discussion

The statistical approaches adapted in this study are as follows: the respondents profile analysis: analyzing personal information of valid samples, including their gender, age, grade distribution; reliability analysis: evaluating reliability and stability of individual items in the questionnaire and utilizing Cronbach's α value to carry out consistency analysis; validity analysis: examining the measuring ability of individual items in the questionnaire, which was to test the validity of questionnaire; statistical analysis: used mean and standard deviation to evaluate level of satisfaction and usage willingness of Mobile Library APP System; interview analysis: noted down college students' real

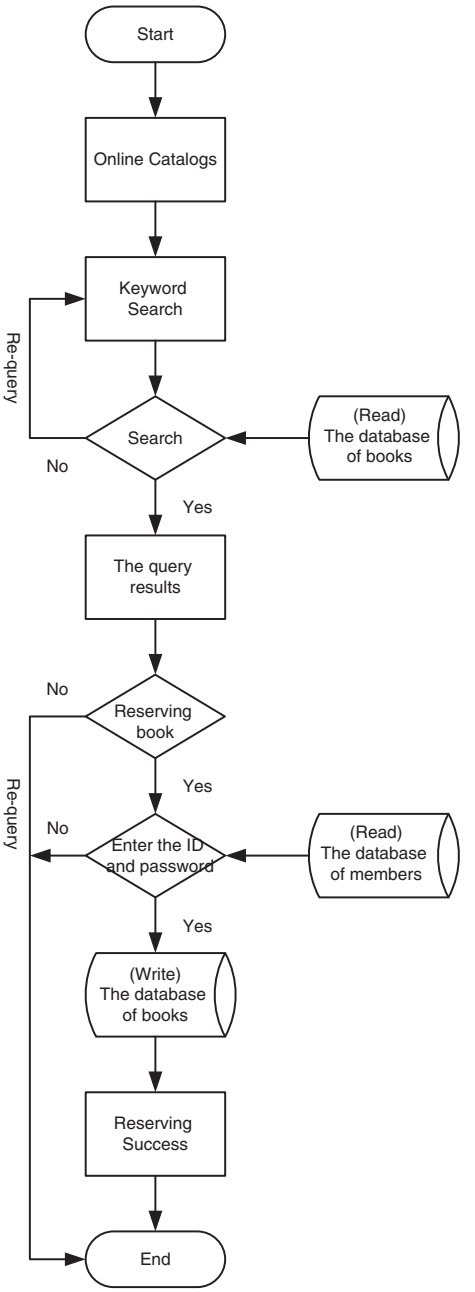

Figure 4.
The system operation process of the online catalogs function

usage and suggestions on Mobile Library APP System, which served as the reference for further improvement on the system. This study adapted SPSS 17.0 Statistic software package to conduct data analysis. The analysis results are elaborated in the following.

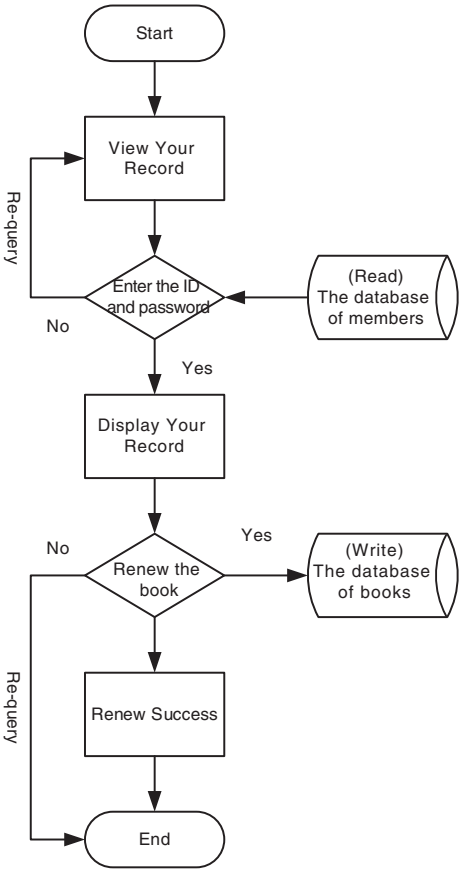

Figure 5.
The system operation process of the view your record function

5.1 The respondents profile analysis

The respondents' personal data filled in valid questionnaires are illustrated in Table II. The 216 valid questionnaires show the following information. Gender: male accounts for 47.2 percent, female 52.8 percent. Age: 21-30 years old accounts for 39.4 percent, 20 years old (including younger than 20) 60.6 percent. Grade: second year in graduate school (including higher grade) accounts for 10.2 percent, first year in graduate school 3.7 percent, senior student (including higher grades but not studying in graduate school) 13.9 percent, junior student 21.3 percent, sophomore 14.8 percent, freshman 36.1 percent.

In Table III, the total population of National University of Tainan were 4,815 students in 2013. In total, male accounts for 44.5 percent, female 55.5 percent. In this study, the 216 valid respondents, male accounts for 47.2 percent, female 52.8 percent. The 216 valid respondents of this study match up to the total population at the university were similar.

This study carried out a χ^2 test of Gender with four constructs (information quality, system quality, system satisfaction and benefit). The χ^2 values and p values of males and females in four constructs are illustrated in Table IV. The information quality was $\chi^2 = 1.319$, $p = 0.450 > 0.05$; system quality was $\chi^2 = 0.716$, $p = 0.655 > 0.05$; system satisfaction was $\chi^2 = 2.317$, $p = 0.315 > 0.05$; system efficiency was $\chi^2 = 0.246$, $p = 0.835 > 0.05$. The results showed that all constructs did not have any significant

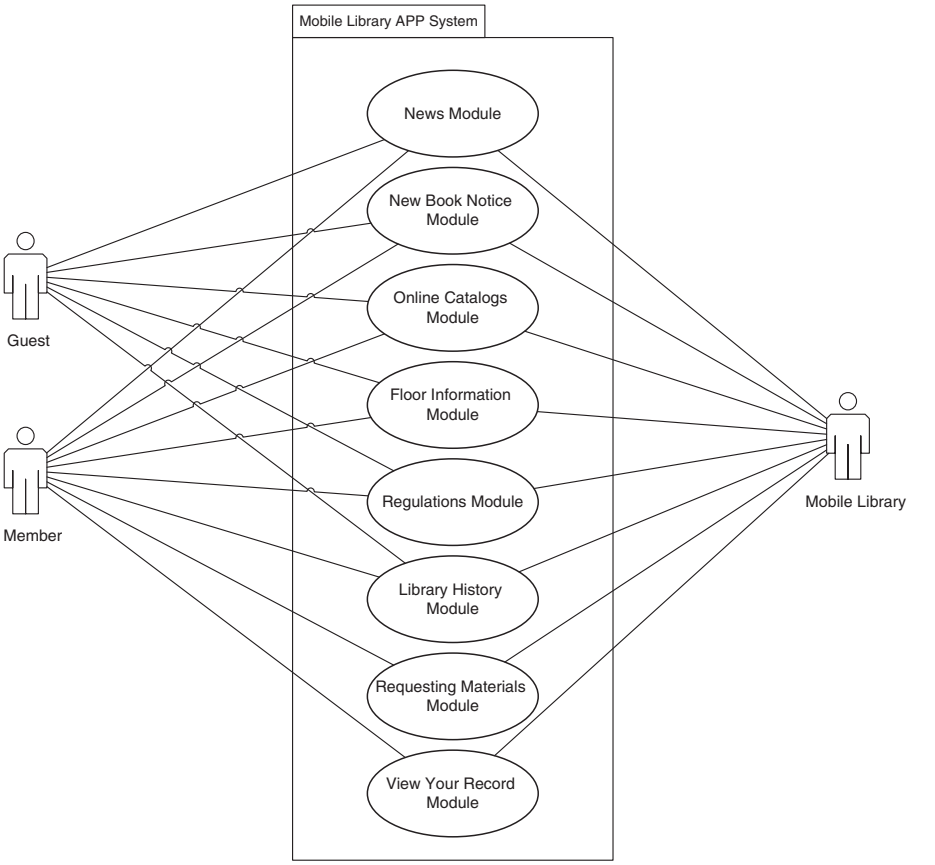

Figure 6.
The use case diagram of the system

Construct	Operational definitions	References
Information quality	Users think that the information quality provided by the Mobile Library APP System is correct, complete and easily to understand	DeLone and McLean (2003), Roca *et al.* (2006), Tsakonas and Papatheodorou (2008)
System quality	Users think that the overall system operation and system despondence of the Mobile Library APP System is stable	DeLone and McLean (2003), Roca *et al.* (2006), Tsakonas and Papatheodorou (2008)
System satisfaction	After using the Mobile Library APP System, users feel satisfied and are willing to keep using it	DeLone and McLean (2003), Bhattacherjee (2001), Clerfeuille *et al.* (2008), Roca *et al.* (2006)
System efficiency	After using the Mobile Library APP System, users perceive that their personal work efficiency is improved	DeLone and McLean (2003), Oliver (1980), Thong *et al.* (2002)

Table I.
The operational definition of each construct

influence. This indicates that gender with these constructs of this study did not have a significant correlation exists.

This study carried out a χ^2 test of Grade with four constructs (information quality, system quality, system satisfaction, and benefit). The χ^2 values and p values of

	Frequency	(%)
Gender		
Male	102	47.2
Female	114	52.8
Total	216	100.0
Age (by years)		
Under 20	131	60.6
21-30	85	39.4
Total	216	100.0
Grade		
Second year in graduate school (including higher grade)	22	10.2
First year in graduate school	8	3.7
Senior student (including higher grades but not studying in graduate school)	30	13.9
Junior student	46	21.3
Sophomore	32	14.8
Freshman	78	36.1
Total	216	100.0

Table II. Demographic statistics of the respondents

Gender	Respondents	Total population of university
Male	102 (47.2%)	2,144 (44.5%)
Female	114 (52.8%)	2,671 (55.5%)
Total	216 (100%)	4,815 (100%)

Table III. Respondents match up to the total population of National University of Tainan

	Satisfaction				
Construct	Male ($n = 102$) (%)	Female ($n = 114$) (%)	Value of the χ^2	df	p-value
Information quality	52.8	47.2	1.319	2	0.450
System quality	45.4	54.6	0.716	2	0.655
System satisfaction	49.1	50.9	2.317	2	0.315
Benefit	53.7	46.3	0.246	2	0.835

Table IV. χ^2 test of gender with four constructs

advanced students and freshmen in four constructs are illustrated in Table V. The information quality was $\chi^2 = 0.787$, $p = 0.675 > 0.05$; system quality was $\chi^2 = 0.336$, $p = 0.845 > 0.05$; system satisfaction was $\chi^2 = 0.094$, $p = 0.954 > 0.05$; system efficiency was $\chi^2 = 0.723$, $p = 0.697 > 0.05$. The results showed that all constructs did not have any significant influence. This indicates that grade with these constructs of this study did not have a significant correlation exists.

5.2 Reliability analysis

In regard of reliability analysis, this study used Cronbach's α value to measure internal consistency of individual dimension. The reliability of information quality was 0.89; reliability of system quality 0.88; reliability of system satisfaction 0.88; reliability of

system efficiency 0.84. Nunnally (1978) pointed out that, when α value was greater than 0.7, the questionnaire evaluated gained greater reliability. Table VI indicates that, in this study, the Cronbach's α values of questionnaire dimensions are between 0.84 and 0.89, which are greater than 0.7. This indicates that all dimensions of this study possessed internal consistency and are highly reliable.

5.3 Validity analysis

In regard of validity analysis, this study tested convergent validity, which indicated the degree of inter-relation between all dimensional items (Lee *et al.*, 2007). When testing same dimensional items, the higher the relation was, the higher the convergent validity. According to Nunnally and Bernstein (1994) and Davis *et al.* (1989), the best indicator of convergent validity were composite reliability and average variance extracted (AVE).

The composite reliability of dimensional item was composed of the reliability of all questionnaire items and indicated the dimensional items' level of internal consistency. In this study, composite reliability of information quality was 0.93; system quality 0.94; system satisfaction 0.92; system efficiency 0.89. Fornell and Larcker (1981) indicated that the value of composite reliability should be greater than 0.7. Table VI shows that the composite reliability of dimensional items in the questionnaire are between 0.89 and 0.94, which are greater than 0.7. This indicates the internal consistency of all dimensional items was high.

The AVE of dimensional items were used to compute the average variance explanation of individual question items to its responding dimensional items. In this study, the AVE of information quality was 0.76; system quality 0.74; system satisfaction 0.74; system efficiency 0.68. Hair *et al.* (1998) pointed out that the value of AVE should be greater than 0.5. Table VI shows that the AVE of questionnaire dimensions are between 0.68 and 0.76, which are greater than 0.5. This indicates all questionnaire dimensional items of this study acquire high convergent validity.

Table V.
χ^2 test of grade with four constructs

Construct	Satisfaction: Advanced students ($n = 106$) (%)	Satisfaction: Freshmen ($n = 110$) (%)	Value of the χ^2	df	*p*-value
Information quality	44.9	55.1	0.787	2	0.675
System quality	51.6	48.4	0.336	2	0.845
System satisfaction	47.7	52.3	0.094	2	0.954
Benefit	38.9	61.1	0.723	2	0.697

Table VI.
Cronbach's α value and convergent validity of the questionnaire

Construct	Number of items	Cronbach's α	Composite reliability	Average variance extracted
Information quality	4	0.89	0.93	0.76
System quality	4	0.88	0.94	0.74
System satisfaction	4	0.88	0.92	0.74
System efficiency	4	0.84	0.89	0.68

5.4 Satisfaction analysis of the system

Upon completion of the reliability and validity analysis, this study analyzed Mobile Library APP System's level of satisfaction and willingness of usage by using descriptive statistical method. Table VII illustrates the average and standard deviation. It shows that the averages of individual question items are greater than 3.7, which indicates high level of satisfaction and overall evaluation of college students toward Mobile Library APP System developed in this study. This also indicates their willingness to continuously use the system in library relevant activities.

The data analysis results showed that the averages of all question items were greater than 3.7. This indicated that most students were positive toward using Mobile

	Question	Strongly disagree→strongly agree (%) 1	2	3	4	5	Mean	SD
Information quality	I think I can understand information and icons showed in the mobile library app system	0.5	1.9	14.8	54.6	28.2	4.08	0.74
	I think information provided by the mobile library app system is clear and easy to read	0.5	0.9	13.0	54.2	31.5	4.15	0.71
	I think the mobile library app system provides useful information in regard of my search	0.5	1.4	16.2	55.1	26.9	4.06	0.73
	In whole, I am satisfied with the information quality of the mobile library app system	0	3.2	21.8	50	25	3.97	0.77
System quality	I think the operation interface of mobile library app system is easy to be understood	0.5	0.5	14.8	45.8	38.4	4.21	0.74
	I think the search function in the mobile library app system is easy to be used	0.5	0	13.4	52.8	33.3	4.19	0.69
	I think the response time of the mobile library app system is short and results are correct	0.5	0.9	26.4	49.1	23.1	3.94	0.76
	In whole, I am satisfied with the system quality of the mobile library app system	0.5	0.5	19	56.5	23.6	4.02	0.7
System satisfaction	I think the book search function of the mobile library app system meet my needs	0.5	0	19.9	61.1	18.5	3.97	0.65
	I will continuously use the mobile library app system to search for information about the books that I want to borrow	0.5	3.2	29.6	44.9	21.8	3.84	0.81
	I will recommend the mobile library app system to my classmates and friends to search for book information	0.5	1.4	26.4	53.7	18.1	3.88	0.73
	In whole, I am satisfied with the use of the mobile library app system	0.5	0.9	19.4	62.5	16.7	3.94	0.66
Benefit	I think the mobile library app system can save my time in searching for books	0.5	0.5	14.4	52.3	32.4	4.16	0.71
	I think the mobile library app system can decrease the costs I need to spend in obtaining book information	0.5	0.9	25.5	47.7	25.5	3.97	0.77
	I think the mobile library app system can increase the amount of books that I borrow	0.5	2.3	37.5	42.1	17.6	3.74	0.79
	In whole, the mobile library app system is helpful to my book searching process	0.5	0.9	11.6	56.5	30.6	4.16	0.69

Table VII.
Descriptive statistics, mean value and standard deviation of the system

Library APP System in library activities, such as searching for book information, e-books, e-journals and other e-resources. Most students also thought the system could be viewed as an effective tool in searching for book resources. Compared with traditional book searching methods by using desk top PCs or laptop computers to log on to library web sites, the APP helped users gain important knowledge more conveniently and speedily. In the following paragraphs, the information quality, system quality, system satisfaction, system efficiency of the Mobile Library APP System are explained with details.

This study found out, in regard of information quality, about 82 percent students thought that the system helped them to quickly spot book location when searching for book information or e-resources. In addition, the system could provide useful book information based on their search results. The time they spent in searching book location was reduced. The amount of books they borrowed increased and efficiency of time usage improved.

This study found out, in terms of system quality, 84 percent students also thought that, when using the system to carry out library activities, the performance of operation interface or function design were easily to understand and to use. However, 28 percent students reported that the system response was not timely whey they were searching for book information and suggested on further improvement. Therefore, to addressing response speed of the system, this study will strengthen and speed up data transmission between library server and the system in order to increase user's level of satisfaction and willingness of future usage.

In system satisfaction, this study found out that 80 percent students reported that they could quickly obtain their desired book information or e-resources by using the system. This indicated high level of satisfaction among college students toward the system. They also reported their willingness to recommend the Mobile Library APP System to classmates and friends in library activities.

The study found out that, in term of system efficiency, 87 percent students thought the Mobile Library APP System could increase their personal work efficiency, such as quickly searching for book information and cutting cost spent in obtaining book information or e-resources. This indicated high level of satisfaction and willingness of continuous usage among college students toward the system.

From above analysis, 80 percent students of National University of Tainan gave positive evaluation on the information quality, system quality, system satisfaction and system efficiency of the Mobile Library APP System developed in this study. This indicated that the Mobile Library APP System was helpful to students when they were searching for book information or e-resources. They were willing to continue using the system, too.

5.5 Interview analysis

To further probe into college students' user experience with the Mobile Library APP System, this study randomly invited ten students for interview after they finished questionnaire in the hope of deepening the understanding of their viewpoints and thoughts about using mobile technology in library activities. The major interview content could be divided in to two parts: is Mobile Library APP System helpful to students when searching for book information and relevant suggestions; students' actual usage of Mobile Library APP System on mobile devices. The interview results is summarized and extracted as follows:

(1) Is Mobile Library APP System helpful to students when searching for book information and relevant suggestions:

- Student No 12: I can quickly find out book information and e-resources by using Mobile Library APP System.
- Student No 33: The book location report function in the Mobile Library APP System reduces the time I used to spend in spotting books. I do not need to search for books from one bookshelf after another.
- Student No 56: The online book borrowing extension function and book reservation function of Mobile Library APP System let me know my personal book borrowing records anytime. In the past, I needed to use PC to check it.
- Student No 118: I suggest adding categorized search function in the Mobile Library APP System, such as education or foreign literature and so on. This would make the system search out books more quickly or shorten searching progress.
- Student No 174: I suggest adding book recommendation function in the Mobile Library APP System, such as showing what books that other readers who read Harry Potter also borrowed. By doing so, the book borrowing times and quantity can be increased.

Students' viewpoints showed that, when searching for or borrowing books from library, they needed to used internet to log on to library web site, noted down book information on papers and went to library to find out books from shelves. It was inconvenient and time-consuming. However, with the help of Mobile Library APP System, they could effectively search for book, magazines, e-books, e-resources and other information anytime. The time cost was reduced and personal work efficiency was improved. In addition, in interview process, students also suggested adding categorized search function, book recommendation function and book discussion function to promote user population and willingness of continuous usage of Mobile Library APP System.

(2) Students' actual usage of Mobile Library APP System on mobile devices:

- Student No 21: The icons and information of Mobile Library APP System interface is easy to understand. Although it is my first time to use it, I get familiar with the system quickly and know how to use it.
- Student No 77: It is my first time to us a table PC. Although I have a Smartphone, but I use it to play games most of the time. It is my first time to use it in library activities. I do not have previous experience but I did not spend a lot of time in getting familiar with the system environment and operation methods. It is convenient for me to search for books.
- Student No 121: I suggest providing 2 to 10 pages of books that readers search for on Mobile Library APP System. This can help readers to quickly get their desired books.

- Student No 155: I suggest adding language switch function on Mobile Library APP System interface, such as English, Japanese and simplified Chinese. In this way, international students can also use this system to search for book information.
- Student No 199: I suggest changing the color of Mobile Library APP System to make it more aesthetic and to improve the smoothness when switching interface. This can increase willingness to use and attract more users.

Students' viewpoints showed that, when operating Mobile Library APP System, although it was their first time to use the system, most of them had used tablet PCs or smartphone and had basic operational skills thanks to the popularization of information technology. Therefore, they could understand operation methods in a short time, which also indicated the interface and functions of the system were easily to be understood and operated. In addition, in interview process, students reported that they truly thought that Mobile Library APP System was an effective library searching tool. It helped them to gain important knowledge more conveniently and easily. They also suggested adding book preview function, multi-lingual interface and improving interface color design and smoothness to increase user population of Mobile Library APP System and willingness of continuous usage.

In whole, most students were interested in using tablet PC and smartphone with Mobile Library APP System in library activities. They also reported their willingness of continuously using this system to search for book information and of recommending it to classmates and friends. For a small number of students who used mobile devices for the first time, they thought if they continued to use the system, they would gradually become familiar with basic operation of mobile devices and to experience the convenience that the system could provide. Moreover, for graduate students, if they could search for e-journals with mobile devices on campus, their efficiency of carrying out research and thesis composition would truly and effectively improved.

6. Conclusion

The objective of this study is to develop a Mobile Library APP System for college students and use questionnaire and interview to discuss their level of satisfaction and suggestion on the system. The questionnaire analysis results and interview content indicate that most students report high level of satisfaction with Mobile Library APP System, which indicates the system is helpful to students when they search for book information and they are willing to continue using the system in library activities.

Based on the above data analysis result, the major contributions of this study include:

(1) The analysis results of questionnaire and interview, college students gives highly positive comments on information quality, system quality, system satisfaction and system efficiency of Mobile Library APP System developed in this study.

(2) College students report that Mobile Library APP System truly helps them to quickly search for and obtain book information or e-resources they require. This indicates their high level of satisfaction with benefits that the system provides. Moreover, they report the willingness to continue using the system in future library activities.

On the whole, most students feel satisfied with the process of using Mobile Library APP System to search for book information and carry out library activities. They report that they are willing to keep using the system and would recommend it to classmates. Moreover, they also hope to use Mobile Library APP System to complete assignments or reports.

Furthermore, although this study takes students of National University of Tainan in Southern Taiwan as research subjects, receives and analyze 216 valid questionnaires and randomly interviews ten students, the results of data analysis are positive. Therefore, further studies on mobile library would be carried out based on research results of this study.

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