A Study of Reading Blog in High School Library
– Using Taipei Municipal Cheng Yuan High School as an Example

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Blog is one of a new method of information circulation and the popular internet application at the present. There is a marvelous increase in blog numbers and users around the world. Many school libraries use this new technology to publicize new resources, services, or events. The purpose of this study is to build a reading blog in high school library and design a series of purposive reading activities, and then, using ‘the Unified Theory of Acceptance and use of Technology’ (known as ‘UTAUT’) to explore the students’ acceptance after implement this plan. The research contributes to construct reading blogs in high school and design a series of purposive reading activities to foster students’ interest in reading and discuss on this blog. Results of the evaluation will be used as the basis of further development.

1. Introduction

Blog is one of a new method of information circulation and the popular internet application at the present.

What is blog? This question has been in disputing all the time. Some think that there is no need to define ‘blog’. Michael Conniff(2005) said ‘A blog is merely a tool that lets you do anything from share the world to share your shopping list. It is way too soon in the invention of uses for this tool to limit it with a set definition.’ More common statement is like what Wallker(2003) said ‘A weblog, or blog, is a frequently updated website consisting of dated entries arranged in reverse chronological order so the most recent post appears first (see temporal ordering). Typically, weblogs are published by individuals and their style is personal and informal.’

The history of the weblog is also constantly being revised and debated. Although some claim that the earliest blog was the first website created by Tim Berners-Lee in 1991, the present-day format first appeared in 1996, and the term weblog was first applied to it in 1997. (Herring et al., 2007) In early, ‘web log’ just is a list of logs traveling around the web. Jorn Barger coined the words web and log to te term ‘weblog’ in December 1997. In 1999, Peter Merholz shortened the word to ‘blog’. (Blood, 2000) Since mid–1999, more and more people began publishing their own blogs, blogging become a popular online activity.

There is a marvelous increase in blog numbers and users around the world now. According to the statistics of Technorati (Sifry, 2006), over 58 million weblogs were tracked.
on August, 2006, and there are more than 175,000 new weblogs created every day, which means that on average, there are more than 2 blogs created each second of each day. Bloggers update their blogs regularly to the tune of over 1.6 million posts per day, or over 18 updates a second. And according to the survey of Perseus, bloggers under 19 now account for almost 60% of the total. (Table 1.1)

| Age Range | 2003   | 2005   |
|-----------|--------|--------|
| <=19      | 52.8%  | 58.3%  |
| 20-29     | 39.6%  | 36.0%  |
| 30-39     | 5.8%   | 4.4%   |
| 40-49     | 1.0%   | 1.1%   |
| 50+       | 0.8%   | 0.3%   |
| total     | 100%   | 100%   |

This web phenomenon has drawn a lot of media attention. Many school libraries use this new technology to publicize new resources, services, or events. In Taiwan, most university libraries have built their blogs recently, but library blogs of high schools are still in embryo. Blogging is relatively low-tech compared to producing hypertext or website. Using blog to promote library-use education, the library needn’t spent too much time and manpower. Blogs are not closed environments and allow student add comments to share ideas with others. Since bloggers under 19 are numerous, and blog readers are more than bloggers, high school libraries can use this new technology to promote library using education.

Reading is more important today than it ever was because of the coming of knowledge society. How to promote students’ reading literacy is the duty of librarian. Combining reading with blog maybe can make this work effectively.

Krishnamurthy(2002) proposed a classification of blogs into four basic types according to two dimensions: personal vs. topical, and individual vs. community. His schematic representation is reproduced as Figure 1. If high school libraries will use blog to promote students’ reading literacy, not only librarians’ online diary, the best of this blog is will be topical and community.

![Figure 1. Types of blogs (Krishnamurthy, 2002)](image-url)
The purpose of this study is to build a reading blog in high school library and design a series of purposive reading activities, and then, using ‘the Unified Theory of Acceptance and use of Technology’ (known as ‘UTAUT’) with some modified from the viewpoint of student group to explore the students’ acceptance after implement this plan. The research contributes to construct reading blogs in high school and design a series of purposive reading activities to foster students’ interest in reading and discuss on this blog.

This paper is composed as follow: in following section, we introduce how we to construct a reading blog, and design a series of activities in blog to lead students participating in the reading blog, after which we (in section 3) will work through the research model and our hypotheses, in section 4 we present the data collection and the data analysis, section 5 summarizes the results and section 6 gives some conclusions.

Blog is one of a new method of information circulation and the popular internet application at the present. Since the first appearance of blog in 1999, there is a marvelous increase in blog numbers and users around the world. According to the statistics of Technorati, there are 175,000 new weblogs created every day, which means that on average, there are more than 2 blogs created each second of each day. (Technorati, 2006) From January 2004 until July 2006, almost two and a half years later, the number of blogs that Technorati tracks has continued to double every 5-7 months. And according to the survey of Perseus, bloggers under 19 now account for almost 60% of the total. This web phenomenon has drawn a lot of media attention. So does in libraries. Many school libraries use this new technology to publicize new resources, services, or events.

In Taiwan, most university libraries have build their blogs recently, but high schools’ library blogs are still in embryo. Since bloggers under 19 now account for almost 60% of the total, and blog readers are more than bloggers, high school libraries must devote the attention to this new technology, and use it to promote library–using education.

2. Reading Blog

We want to make best of network on in-depth reading program except the regular library website. But our web developer is overburdened. It is difficult to build a website to propel the reading program. The characteristics of blog accord with our need.

The application of most high school library weblogs is publish massages unilaterally. There has been a lack of interactive communication with readers. Librarians are always looking for ways to offer value-added services. For high school libraries, furthering reading is not only a value–added service, but also the educational responsibilities. So, we hope building a purposive topic blog, designing a series of activities, and then, lead students to do well-rounded reading through these activities. The process of constructing are described as follow.

2.1 Starting the Reading Blog

One of the best things about blogs is that many blogging programs are either free or inexpensive to use. Bloggers can maintain their blogs without professional information ability. That is a point of vantage to further the reading blog among teachers.
We adopt a opensource blogging platform “Lifetype”(2007) to build our reading blog. Basic services evolved in the reading blog, for example sending massage, new book reviews and book lists, etc. The first interaction in the blog is that we post the fine works of students’ reading reports to blog. Others can appreciate the works, or

2.2 Activities of Initiative and Theme Type

After building the reading blog, it’s important to invite students into our reading blog. Special and in-depth content is to need to make your blog stand out from the crowd. We cooperate with a Chinese teacher to design a series of activities. For the using of follow-up study, we regard three classes that she taught as the target of observing. The teacher does the reading introduction or carries the course first in the classroom. In half a year, we carried on seven activities as follow:

a. **Name for the class discussion area**: In order to let students have more sense of ownership to participate in these activities, we post a theme, and let students discuss to name for their own class discussion area. Classmates can put forward one's own intention in echoing, they can comment on others' onions, finally, elect the most popular name, then we set up the exclusive catalogues of this class, and design logo according to the name.

b. **Antithetical couplets of the 110th anniversary of the founding of the school**: Activity combined with life situation make student much easy to participate in. The 110th anniversary of school just right while studying, their creation on the reading blog can just participate in the antithetical couplet contest that the school hold in.

c. **Playing the role in book**: The third activity is playing the role in book. Students can simulate some role's mood according to imagining. Such an activity can encourage students to read thoroughly, and can excite their imagination strength even more.

d. **Who comes to kick the hall**: After the first three activities, we hope to increase the interaction between classmates, in order to let the use of the reading blog be activated. This activity encourage students go to other class discussion area to comment others’ reviews except making students post their reading reviews.

e. **I love CYHS**: The purpose of this activity is to hope to expand the range of reading materials. We hope students write the impressions after observing anything of surrounding area of the school.

f. **Debate competition on network**: The interactions of preceding activities are all asynchronous. Students can express their opinion to the blog any time. This is the operation way of most blogs. There is a simultaneous way in the application of network. We try to hold the debate competition on the reading blog. We record the competition, and upload to the reading blog, fully represent the multimedia characteristic of blog. This activity arouses much echo in students.

g. **The Creative Craft Book**: The last activity is “Craft Book”. We post eight pictures and the fabricating method of craft book to the reading blog. Students can download these pictures, rearrange them, and make up the story according to one's own imagination. They can do into a book actually, also, can put the electronic file in the blog, let others
appreciate their own works. The imagination space of this activity is very big, can excite students' creativity.

3. Research model and hypotheses

We approached the adoption of the reading blog from the perspective of technology acceptance. This approach had previously been used in a number of studies. Of the acceptance models, the Davis’ Technology Acceptance Model (TAM) is best known and is repeatedly used in studies which focus on users. TAM model offers an infrastructure mainly, in order to explain the impact on behaviour intention of outside parameter. (Davis et al., 1989) Because the researchers on different themes choose relevant external variables differently in characteristic of the theme, there are more and more external variables put forward to different fields. A number of modifications and changes to the original TAM model have been made. The most prominent of these is the Unified Theory of Acceptance and Use of Technology (UTAUT). UTAUT was formulated by Venkatesh, Morris, Davis and Davis (2003). The unified model is based on studies of eight prominent models (TRA、TAM、MM、TPB、C-TAM-TPB、MPCU、IDT、SCT), and has been empirically examined.

UTAUT states that there are three direct determinants of intention to use (Performance Expectancy/PE, Effort Expectancy/EE and Social Influence/SI) and two direct determinants of usage behaviour (Intention and Facilitating Conditions/FC). UTAUT includes four moderators (i.e. age, gender, experience and voluntariness of use), which contribute to a better understanding of the complexity of technology acceptance by individuals. The effects of performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC) are examined. (Venkatesh et al., 2003) The impacts of moderators in the UTAUT by Venkatesh et al. will be included in this test except age, because the research object has been confined to the high school students from 16 to 18 years old.

![Figure 2 research model modified from the UTAUT model of Venkatesh et al. (2003)](image-url)
The set of hypotheses is modified to fit our context. Therefore, the expected relationships for direct effects are:

H1: Performance expectancy has an influence on behavioral intention.
H2: Effort expectancy has an influence on behavioral intention.
H3: Social influence has an influence on behavioral intention.
H4: Facilitating conditions have an influence on usage.
H5a: Gender has an influence on performance expectancy.
H5b: Gender has an influence on effort expectancy.
H5c: Gender has an influence on social influence.
H6a: Experience has an influence on performance expectancy.
H6b: Experience has an influence on effort expectancy.
H6c: Experience has an influence on facilitating conditions.
H7: Voluntariness of Use has an influence on social influence.
H8: Behavioral intention has a positive influence on use behavior.

4. Data collection and Discuss

4.1. Data collection

In August 2006, we built the reading blog. In September 2006 we started the series of activities, and carried out an empirical study among three classes that the cooperated teacher taught in Cheng Yuan High School. In February 2007, there were over 20 thousands visitors of the reading blog. At this time, a questionnaire was distributed to 108 students. The respondents had participated in the series of activities in the reading blog. All of the questionnaires were returned. Out of 108 respondents, there were 98 effective questionnaires in the survey accumulating an effective rate of 90.7%. The invalid questionnaires include: incomplete answers, and answers that were the same to all the questions. The gender distribution of the study subjects was 37.8% females and 62.2% males, respectively. Respondents with experience of using the blog was 86.7% and 13.3% with no experience of using the blog before participated in these activities. Respondents with voluntariness of use was 8.2%, 11.2% 57.1% 18.4%, and 5.1% from very disagree to very agree, respectively.

4.2. Descriptive Statistics

The statements in the questionnaire used were based on some previously conducted tests of the UTAUT. The variables were measured with 5-point scales for all model components, which differed from the 7-point scales in the original UTAUT; a 5-point scale proved to be more robust for the type of survey we carried out.

From descriptive statistics, the twenty means of questions were between 3.00 and 3.74. There was no phenomenon obviously on the high side or on the low side.
### Table 4-2-1 Descriptive statistics

|   | N | Mean | S.D. | Variance | Strew | S.E. |
|---|---|------|------|----------|-------|------|
| Q1 | 98 | 3.37 | 866  | 0.75     | -0.406| 0.244|
| Q2 | 98 | 3    | 849  | 0.722    | -0.789| 0.244|
| Q3 | 98 | 3.3  | 0.922| 0.85     | -0.161| 0.244|
| Q4 | 98 | 3.05 | 0.978| 0.856    | -0.694| 0.244|
| Q5 | 98 | 3.37 | 0.924| 0.853    | -0.161| 0.244|
| Q6 | 98 | 3.74 | 0.956| 0.914    | -0.694| 0.244|
| Q7 | 98 | 3.3  | 0.752| 0.565    | -0.722| 0.244|
| Q8 | 98 | 3.58 | 1.025| 1.05     | -0.606| 0.244|
| Q9 | 98 | 3.65 | 0.964| 0.93     | -0.657| 0.244|
| Q10| 98 | 3.4  | 1.033| 1.067    | -0.408| 0.244|
| Q11| 98 | 3.48 | 0.944| 0.891    | -0.428| 0.244|
| Q12| 98 | 3.56 | 0.886| 0.785    | -0.825| 0.244|
| Q13| 98 | 3.59 | 1.024| 1.048    | -0.518| 0.244|
| Q14| 98 | 3.17 | 0.885| 0.784    | -0.623| 0.244|
| Q15| 98 | 3.12 | 1.077| 1.16     | -0.198| 0.244|
| Q16| 98 | 3.01 | 0.925| 0.856    | -0.26  | 0.244|
| Q17| 98 | 3.59 | 0.983| 0.966    | -0.428| 0.244|
| Q18| 98 | 3.7  | 0.827| 0.685    | -0.176| 0.244|
| Q19| 98 | 3.58 | 0.93 | 0.864    | -0.243| 0.244|
| Q20| 98 | 3.01 | 0.914| 0.835    | -0.269| 0.244|

### 4.3 Factor analysis, reliability and validity

The statements in the questionnaire used were based on some previously conducted tests of the UTAUT. Q1 was the question of use behaviour, Q2 was the question of the behavioural intention, and the Q20 was for the Voluntariness of Use. We carried on factor analysis of the seventeen questions from Q3 to Q19, including principal component factor analysis, varimax rotation, extracted four components which explain 62.225% variate. The four components were named as performance expectancy (PE), facilitating conditions (FC), effort expectancy (EE), and social influence (SI) according to UTAUT.

The internal consistency reliabilities were tested with Cronbach’s Alpha coefficient ($\alpha$). All the items describing the construct were included in the scale variable though alpha of social influence did not exceed the 0.70 threshold; the content of the statements were considered valuable. In Table 4-2-2, The final construct of performance expectancy consisted of 8 items ($\alpha=.851$), effort expectancy of 3 items ($\alpha=.801$), social influence of 3 items ($\alpha=.636$), facilitating conditions of 3 items ($\alpha=.768$). The items selected describing the constructs are presented in Appendix 1.
4.4 Correlation analysis

External validity of the questionnaire is supported by the significant of Pearson correlation analysis. Correlations of all variables were significant. (Table 4-4-1)
4.5 Regression analysis

The relationships between the variables constructed in the UTAUT were examined by using regression analysis. Didn’t consider the moderators, interactions between independent variables (PE, EE, and SI) as well as associations between independent variables and intention to use the reading blog (BI) were studied by applying linear regression analysis. Only the variable Performance Expectancy had an influence to Behavioral Intention. (Table 4-5-1)

| Table 4-5-1 Regression analysis for Behavioral Intention |
|--------------------------------------------------------|
| Behavior Intention | β   | P    |
|---------------------|-----|------|
| N=98                |     |      |
| Performance Expectancy | .567*** | .000 |
| Effort Expectancy   | .056| .617 |
| Social Influence    | .098| .308 |

*P<0.05  **P<0.01  ***P<0.001

Next, we took the independent variables (FC, and BI) to test the relationship with the Use Behavior of the reading blog. The models were also used to find out whether independent variables have a direct effect on dependent variables. The result was positive. (Table 4-5-2)

| Table 4-5-2 Regression analysis for Use Behavior |
|-----------------------------------------------|
| Use Behavior | β     | P    |
|---------------|-------|------|
| N=98          |       |      |
| Behavioral Intention | .558*** | .000 |
| Facilitating Conditions | .198*   | .019 |

*P<0.05  **P<0.01  ***P<0.001

4.6 Analyses of moderators

From table 4-6-1, we could not find that gender have influence on Performance Expectancy, Effort Expectancy, and Social Influence.

| Table 4-6-1 Levene test and T test for Gender |
|----------------------------------------------|
| Activity       | Sex  | Mean  | S.D. | F test | Sig. |
|----------------|------|-------|------|--------|------|
| Performance Expectancy | Male | 26.1639 | 5.23189 | .360 | .104 |
|                 | Female | 27.8919 | 4.74215 |     |      |
| Effort Expectancy  | Male | 10.5410 | 2.61135 | .081 | .651 |
|                 | Female | 10.7838 | 2.48479 |     |      |
| Social Influence   | Male | 9.9508 | 2.27615 | .599 | .992 |
|                 | Female | 9.9459 | 2.15955 |     |      |

From table 4-6-2, we could find that the moderator Experience hasn’t significant influence on Performance Expectancy, and the influence on Effort Expectancy was significant. Through the Multiple comparisons, we found that only the group ‘never used before’/‘experience more than 3 years’, and ‘never used before’/‘experience 1-3 years’ had a significant difference.
Table 4-6-2 ANOVA for Experience

| SV                  | SS     | df | MS    | F      | Sig. | Scheffe |
|---------------------|--------|----|-------|--------|------|---------|
| Performance         | Between groups | 37.473 | 3 | 12.491 | .473  | .702 |
| Expectancy          | within groups  | 2483.221 | 94 | 26.417 | .003  | Over 3 years>never, 1-3 years>never |
| Effort              | Between groups | 88.101 | 3 | 29.367 | 5.068 | .003 |
| Expectancy          | within groups  | 544.675 | 94 | 5.794  |       |         |
| Facilitating        | Between groups | 47.103 | 3 | 15.701 | 3.284 | .024 |
| Conditions          | within groups  | 449.428 | 94 | 4.781  |       |         |

The correlation of moderator Voluntariness of Use with Social Influence through Pearson Correlation Analysis could find form table 4-4-1.

According to the above-mentioned results of the test of moderators, we added the control variables experience and voluntary one by one separately to carry out the regression analyses, the results had not changed significantly.

4.7 Another data collection

In order to improve the activity of the reading in the future, we joined some questions in the questionnaire. The aim was to know what activity students like to participate in again. (Table 4-7-1)

Table 4-7-1 Frequency distribution of students like to participation again

| Activity | a | b | c | d | e | f | g |
|----------|---|---|---|---|---|---|---|
| Frequency| 11| 10| 18| 16| 8 | 61| 16|
| Percent  | 11.2%| 10.2%| 18.4%| 16.3%| 8.2%| 62.2%| 16.3%|

5. Results

We build a reading blog in this research, design a series of activities to promote the reading interesting of students, and investigate the acceptance of the reading blog. Table 5 provides the summary of findings.

Table 5 Summary of findings

| H1 | Performance expectancy has an influence on behavioral intention. |
| H2 | Not accepted due to the lack of direct effect of effort expectancy on behavioral intention. |
| H3 | Not accepted due to the lack of direct effect of effort on behavioral intention. |
| H4 | Facilitating conditions has an influence on use behavior. |
| H5a | Not accepted due to the lack of direct effect of gender performance expectancy. |
| H5b | Not accepted due to the lack of direct effect of gender on effort expectancy. |
| H5c | Not accepted due to the lack of direct effect of gender on social influence. |
| H6a | Not accepted due to the lack of direct effect of experience on performance expectancy. |
| H6b | Experience has an influence on effort expectancy. |
| H6c | Not accepted due to the lack of direct effect of experience on facilitating conditions. |
| H7 | Voluntariness of Use has an influence on social influence. |
| H8 | Behavioral intention has a positive influence on use behavior. |

The acceptance of the reading blog for the students includes ‘Behavioral Intention’ and ‘Use Behavior’. In ‘Behavioral Intention’, the mean of 98 respondents is 3 in 5-point scales. And in ‘Use Behavior’, the mean of 98 respondents is 3.37. Such degree is still not high. Probably because the implementation of the plan does not long enough, the influence power has not been spread effectively yet.
The correlation of behavioral intention and use behavior is positive. It is consistent with the researches previously, but some relations between the variables are not. The influences of moderators are also not obvious. We reorganize the research as figure 5.

The same as all relevant literatures previously, this research also find that the influence power of ‘Performance expectancy’ exceeds other factors from far away. This key element can be the reference for continuing promotion of the reading blog in the future.

One the reason why the moderators don’t exert the influence power maybe the skill of access the reading blog is not difficult, so the influences of the moderator gender and experience are not significant.

From the data collected from questionnaire about what activity students like, we can find, the first is debate competition on network. This is the strongest interactive activity. Other activities students like has the same characteristic.

![Figure 3 Histogram of Behavioral Intention](image)

![Figure 4 Histogram of Use Behavior](image)
6. Conclusions

In this paper we have studied the factors affecting intention to participate in the activities through the reading blog by testing the UTAUT. We found that performance expectancy could be found as explanations for behavioral intention, but that effort expectancy and social influence could not be used as such for explanations. We could also substantiate that behavioral intention will have a positive influence on usage. Furthermore, facilitating conditions also have a positive influence on usage of reading blogs. Thus the results we obtained can be reference for the improvement of the reading blog through, but do not support in all cases the original UTAUT hypotheses. We had to make some reservations on the use of the UTAUT in an earlier study.

Because there are only 5 months from the beginning of the reading blog to the implementation in questionnaire, the structure of the reading is basic, and this research is the preliminary one. We will continue revising the activities of the reading blog, and do more long-term observation in future. When we expand the observation target of this plan to more students, it is an interesting challenge to modify and extend the UTAUT in a future paper.

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**Appendix 1**

Items used in forming the constructs of the modified UTAUT

Performance expectancy/PE

PE1 I think the reading blog can help me engaged in on-line relevant reading activities.

PE2 Using the reading blog to pay homework can increase the efficiency for paying homework.

PE3 It is easier that discuss in reading blog than in class for me.

PE4 The activities of the reading blog are more interesting than the traditional activities.

PE5 The effect on use the reading blog make me satisfied.

PE6 I think the activities of the reading blog can increase the enjoyment of reading.

PE7 Generally speaking, the experience of participating in the activity in the reading blog is happy.

PE8 I think it is admirable that one can express opinions in the reading blog.

Effort expectancy/EE

EE1 I can understand what is blog very clearly.

EE2 Learning how to discuss in the reading blog is easy for me.

EE3 I can discuss skillfully in the reading blog.

Social influence/SI

SI1 I will increase the use of the reading blog because of the teacher's influence.

SI2 I will increase the use of the reading blog because of the classmates' influence.

SI3 I think one doesn’t understand blog will be kind of phenomenon falling behind.

Facilitating conditions/FC

FC1 I can link the reading blog easily.

FC2 I can get the knowledge of blog easily.

FC3 Once meet difficulty, I can utilizing various information to solve problem quickly.

**Biographical Notes**

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