# College Students' Acceptance and Willingness Towards Blended Learning Experience

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**Abstract.** Blended learning, which spreads the edges of online learning to off-line service, has combined the advantages of face-to-face learning and pure online learning and brought vigor to E-learning. The paper is based on the findings of an investigation on college students' willingness to provide and use off-line functions of an online learning platform. The difference in users are expected to be revealed for offering better category of resources and adaptive functions. To get a clear idea of the influence factors of blended learning and help the design of an individualized online learning platform, the paper will give some analysis about the possibilities and feasibility of blended functions of the platform.

Based on the results of descriptive analysis, Levene test, single factor ANOVA and the crosstab chi-square test, differences appearing in gender and grade need attaching importance to and taking care of. It is proved that learners in universities are willing and competent to take the instructional role to help each other in E-learning. As for how to achieve the blended process in E-learning in higher education, suggestions are offered as to build a location based system(LBS) and an inner-campus communication society on the learning platform. Knowing and accepting the difference, the design of the platform is also optimized to assist learners as well as to improve blended learning experience in the process.

**Keywords:** Blended learning · Online learning platform · Willingness
Higher education

## 1 Introduction

### 1.1 Background of the Study

According to the 40th Statistics Report for China Internet Development revealed on August the 4th from China Internet Network Information Center(CNNIC), up to June 2017, there are 751 million Internet users in China, occupying nearly 54.3% of Chinese population [1]. With the rapid development of E-commerce as well as E-learning, the way of learning has been changed a lot in China.

Beginning with Massachusetts Institute of Technology's storm in Open Educational Resources (OER), sharing of open, free and high-quality academic resources have been spread out across the country. Online courses form the three main course providers,

namely Coursera, Udacity, and edX, have provided learners with easy access to resources in technology, language, culture and intellectual property.

As all these platforms provide a variety of resources online, students using them can handle their learning in their own pace so that individualized learning is realized. However, problems also come as misconception and difficulties that cannot be solved by learners themselves bother a lot. Lack of supervision in the process of learning results in low lesson-complete rate. Being faced with the situation, instructors in the online courses are playing a significant role in guiding students to learn. Thus, blended learning has taken the place of pure online courses in most cases naturally.

## 1.2  Aims of the Study

Facing the transition from being forced to learn to self-learning, college students always feel confused and uncomfortable. In common cases, the discomfort cannot be erased by themselves in a short time easily. Added up with the challenge of brand new way of learning, individualized learning can be just an idea in the air. As a result, enhancing students' willingness and self- consciousness to learn become an important issue when running a learning platform.

When it comes to individualized learning, what the difference is between learners is the key problem that should be figured out. In elementary education, the set of curriculum is carefully designed by experts in each discipline. At the same time, concepts like interdisciplinary knowledge and hierarchical teaching are the things to reform in elementary education while these challenges are what should be taken into account in courses for learners in universities.

Based on the design of an online learning platform, the research is aiming to make it clear how to provide an effective and efficient way to help learners. Empirical research will be used with questionnaires handed out to college students through the Internet to collect relevant data. From the result of the analysis, it is expected to get some ideas for learning platform design and how blended learning should function in higher education.

# 2   Literature Review

Blended learning is an education program that combines online digital media with traditional classroom methods [2]. With some element of student control over time, place, path, or pace, it requires the physical presence of both teacher and student [3]. Although a lack of consensus on a definition of blended learning has led to difficulties in research on its effectiveness in the classroom [4], the introduction of blended learning does help students to learn [5]. It is also confirmed that Blended learning methods can also result in high levels of student achievement compared with face-to-face learning and pure online learning [6].

At present, it is found that blended learning would affect students' motivation and interest for learning. Proponents of blended learning argue that incorporating the asynchronous Internet communication technology into higher education courses serves to facilitate a simultaneous independent and collaborative learning experience [7].

This incorporation is a major contributor to student satisfaction and success in such courses. The presence of online communication society has been found to improve student attitudes towards learning [8].

With the effect of blended learning confirmed, efforts have been put on how to attract learners and improve their learning experience. Seeing from the aspects of learners' experience, student satisfaction in blended learning are analyzed to figure out how to improve current courses [9, 10]. The influence of individual factors like learning styles and student perceptions of the use of interactive online tutorials have been checked systematically [11, 12].

The acceptance of a newly designed thing is usually measured under the framework like technology acceptance model (TAM) and its revised versions [13]. Taken marketing factors into consideration, Innovation Diffusion Theory (IDT) has focus the popularization of the creative new function [14]. In our cases, blended learning experience has brought the off-line function on spot. Thus, the willingness of college students to the new items need to be checked.

Back to the situation when designing an online learning platform, the willingness of learners towards specific functions like blended learning experience should be investigated. As acceptance of online learning is researched and taken care of [15], the personalized functions of the platform that transform students' way of learning into blended learning should be taken into consideration as well. In most cases, college students pick their lessons just follow their heart as it is assumed that they have the ability to handle most courses. Therefore, the Instructional Factors may be ignored. Take individual differences and lack of instructions into consideration, our platform is designed to provide opportunities for learners to help each other. The willingness of users to the function need to be checked.

When it comes to individualized learning, the resources in the courses nowadays are packed in fixed set. Without careful categorized resources, it is impossible to achieve personalized learning. So the differences between gender and grade of college students is what the research aim to find out.

## 3   Methodology

### 3.1   Research Design

Based on the findings in the literature review, the current study adopted the empirical methodology to address the research questions. As to data collection, a questionnaire on learners' willingness and acceptance towards using learning platforms is designed to check what is the individual difference like and how the learning system functions.

As participants in online learning programs are used to the way of learning without face-to-face interactions, the effects of adding blended learning activities to their study need to be confirmed. Specifically, the research aims to make it clear whether the off-line service designed in our platform is accepted by the target users. As a result, options on college students' acceptance and willingness towards blended learning experience are designed in the questionnaire to analyze the effects and feasibility of blended learning.

The questionnaire is handed out to college students through the Internet and collected by sojump. On the basis of reliability analysis, the result will be given from two aspects after further descriptive analysis, single factor ANOVA and the crosstab chi-square test. One is the whether the differences exist will affect customer behavior and the outcome of our learning. Another is the suggestions on the platform design for blending learning.

The research questions can be listed in following research hypotheses:

H1. College students' grade will positively affect willingness of providing off-line service.

H2. There is a significant difference between male and female in their attitudes towards college students' credit.

H3. There is a significant difference between male and female in their attitudes towards online learning platforms' using their credit reports.

## 3.2    Data Collection

The total number of participants of this questionnaire is 430. With 430 people covered, the response rate for the questionnaire was 100%. The effective return-ratio was higher than 98.83% as 425 of the questionnaires are valid. All the 425 respondents are college students, in which 152 are boys and 273 are girls, accounting for 35.76% and 64.24% respectively. The grade distribution of the respondents is shown in the Table 1.

**Table 1.**  The grade distribution of the respondents

| Options | Sum | Percentage |
|---|---|---|
| Freshman | 68 | 16% |
| Sophomore | 99 | 23.29% |
| Junior | 191 | 44.94% |
| Senior | 54 | 12.71% |
| Postgraduate | 13 | 3.06% |
| Valid questionnaires | 425 | |

According to the statistics, the questionnaire is mainly issued to junior students. And we are trying to know about their willingness to experience blended learning. To improve the customer experience of online learning platforms, the result of the survey is used to explore how individuals differ from each other. By knowing and attracting college students, we get to know about the obstacles that may exist in changing the traditional way of learning at the same time.

On the one hand, for designers, the following statistics can help understand the demand of learners. On the other hand, for college students, the research will help you know about the blended functions of the platform as well as why and how it is designed to be so.

### 3.3 Data Analysis

As what has been mentioned in research design, options on college students' acceptance and willingness towards blended learning experience in the questionnaire are focus on participants' willingness and acceptance towards the added blended learning activities. As a campus learning community online, the blended function of our platform means students can make appointment with their tutors online and learn from them both online and offline. The existing of off-line service makes our learning platform distinct from traditional MOOC courses. At the same time, the acceptance of the service should be checked from both the providers and the users.

In result, subjective questions are listed in the questionnaire to seek the willingness of college students towards the off-line service. As the off-line service is not provided for free, the payment function is in need to guarantee students' convenience while learning. However, college students' willingness to use payment function need to be activated according to the market research carried out earlier. According to the current situation, attempts have been made in the research to set a location based learning system so that students in the same school can help each other in study and enjoy the safer experience from their peers. Furthermore, a credit report is also offered for users of off-line service for better learning experience.

Before the checking of college students' acceptance and willingness towards the service mentioned, subjective questions in the questionnaire are selected to test its reliability in order to confirm the accuracy of the data before further statistical analysis. The result of the corresponding questions is shown in Table 2.

**Table 2.** The result of the subjective questions

| Options | Very unwilling | Unwilling | Uncertain | Willing | Very willing |
|---|---|---|---|---|---|
| Willingness of using off-line service | 20(4.71%) | 29(6.82%) | 134(31.53%) | 117(27.53%) | 125(29.41%) |
| Willingness of providing off-line service | 16(3.76%) | 28(6.59%) | 127(29.88%) | 137(32.24%) | 117(27.53%) |
| Willingness of using credit report | 14(3.29%) | 20(4.71%) | 102(24.00%) | 148(34.82%) | 141(33.18%) |
| Willingness of authorizing credit report | 29(8.82%) | 40(9.41%) | 117(27.53%) | 135(31.76%) | 104(24.47%) |

For the reason that only the data of the subjective questions can be tested by Cronbach α reliability coefficient for reliability analysis, we can calculate alpha for the subjective questions mentioned above first (Table 3).

**Table 3.** Reliability statistics

| Cronbach's Alpha | Cronbach's Alpha based on standardized items | N of items |
|---|---|---|
| .846 | .848 | 4 |

As the result has shown, $\alpha = 0.846$, meaning that the questionnaire is *very credible*. Based on the reliability test, we can continue to do some further analysis.

## 4    Findings and Discussions

In order to get a clear conclusion, the results of the questionnaire will be checked in this part to help offer more realistic countermeasures.

### 4.1    Relationship Between Grade and Willingness of Providing Off-Line Service

Taking the effect of grade difference into consideration, students' willingness of providing off-line service are checked through one-way ANOVA test. As the null hypothesis is that there is no significant difference in the total variance of the observed variables at all levels. With the total variance confirmed no significant difference, homogeneity of variance is picked as the method of the part of analysis (Table 4).

**Table 4.** The result of willingness of providing off-line service among grades

| | | N | Mean | Std. Deviation | Std. Error Mean | 95% Confidence interval of the difference | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Lower |
| Willingness of providing off-line service | Freshman | 68 | 3.81 | .981 | .119 | 3.57 | 4.05 |
| | Sophomore | 99 | 3.72 | 1.040 | .105 | 3.51 | 3.92 |
| | Junior | 191 | 3.67 | 1.021 | .074 | 3.52 | 3.82 |
| | Senior | 54 | 3.80 | 1.219 | .166 | 3.46 | 4.13 |
| | Postgraduate | 13 | 4.08 | 1.256 | .348 | 3.32 | 4.84 |
| | sum | 425 | 3.73 | 1.052 | .051 | 3.63 | 3.83 |

As shown in Table 5, there exists a significant difference among different grades on the willingness to provide off-line service. It is identified that students in higher grade are aware of their needs and adapt themselves to all kinds of learning modes better. As senior students are also those who have more experience in courses as well as other aspects of knowledge, their willingness to take the role of tutors makes sense. It becomes a key opportunity and challenge for online learning platform to attract them to use the platform.

**Table 5.** The result of ANOVA test on willingness of providing off-line service

| | | | Sum of squares | df | Mean | F | Sig. |
|---|---|---|---|---|---|---|---|
| Between groups | combination | | 2.923 | 4 | .731 | .658 | .622 |
| | Linear term | Unweighted | .958 | 1 | .958 | .863 | .354 |
| | | Weighted | .028 | 1 | .028 | .025 | .874 |
| | | Deviation | 2.896 | 3 | .965 | .869 | .457 |
| In the group | | | 466.498 | 420 | 1.111 | | |
| sum | | | 469.421 | 424 | | | |

### 4.2 Relationship Between Gender and Sense of Security

The results of the question on participants' sense of security when it comes to the use of O2O Apps are explored from the aspect of attitudes towards college students' credit. In result, the option in the questionnaire is exhibited as *how would you access college students' credit* so that college students' sense of security when using blended service is investigated. The results of group statistics show the standard error of the sample size, mean value, standard deviation and mean value of the male and female (Table 6).

**Table 6.** Group statistics

| Options | Gender | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| How would you access college students' credit? | Male | 152 | 3.64 | .896 | .073 |
| | Female | 273 | 3.67 | .753 | .046 |

Spss 20.0 is used for the Levene test and the T test to check whether two gender groups are different from each other. Null hypothesis, which is also named H0, is set as there is a significant difference between male and female in their attitudes towards college students' credit.

The Levene test on homogeneity of variance and the results of T test on the equality of the mean are given in Table 7. The F statistic sig values $0.059 > 0.05$, which can be recognized as the equal variance assumption. Referring to the T-test results, bilateral sig value $0.694 > 0.05$, meaning that we should reject H0 and there is no significant difference in attitudes between men and women towards college students' credits. When we are trying to attract customers for online learning platform, the sense of security of different genders is almost the same.

**Table 7.** The results of independent samples test

| | | F | Sig. | t | df | Sig. (2-tailed) | Std. Error Difference |
|---|---|---|---|---|---|---|---|
| How would you access college students' credit? | Equal variances assumed | 3.598 | 0.059 | -0.394 | 423 | 0.694 | 0.082 |
| | Equal variances not assumed | | | -0.375 | 270.12 | 0.708 | 0.086 |

## 4.3    Relationship Between Gender and Willingness of Credit Reports

Specifically speaking, things like acceptance and willingness towards the use of their credit report need to be confirmed before off-line instructions from students offered by the platform. The result of questions like Would you authorize the platform to use your credit report if you are one of the online learners? (1–> 5 says very unwilling –> very willing) is shown in Tables 8 and 9.

**Table 8.** The result of willingness of using credit reports

| X\Y | Very unwilling | Unwilling | Uncertain | Willing | Very willing |
|---|---|---|---|---|---|
| Male | 6(3.95%) | 9(5.92%) | 44(28.95%) | 56(36.84%) | 37(24.34%) |
| Female | 23(8.42%) | 31(11.36%) | 73(26.74%) | 79(28.94%) | 67(24.54%) |

**Table 9.** The result of group statistics

| | Gender | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Would you authorize the platform to use your credit report if you are one of the online learners? | Male | 152 | 3.72 | 1.026 | .083 |
| | Female | 273 | 3.50 | 1.216 | .074 |

The Levene test and the T test is used to check whether two gender groups are different from each other. Null hypothesis, which is also named H0, is set as there is a significant difference between male and female in their attitudes towards online learning platforms' using their credit reports.

The Levene test on homogeneity of variance and the results of T test on the equality of the mean are given in the Table 10. The F statistic sig values $0.002 < 0.05$, which can be recognized as the variances of the two groups are different. Referring to the T-test results, bilateral sig value $0.049 < 0.05$, meaning that we should accept H0 and there is a significant difference in attitudes between men and women towards college students' credits. We need to eradicate different individual characteristics adaptable design in this case.

**Table 10.** The result of independent samples test

|  |  | F | Sig. | t | df | Sig. (2-tailed) | Std. Error Difference |
|---|---|---|---|---|---|---|---|
| Would you authorize the platform to use your credit report if you are one of the online learners? | Equal variances assumed | 9.345 | 0.002 | 1.878 | 423 | 0.061 | 0.117 |
|  | Equal variances not assumed |  |  | 1.971 | 358.11 | 0.049 | 0.111 |

# 5 Conclusions

## 5.1 Major Findings of the Study

Although the network environment is relatively free and the market capacity seems huge, in fact it is influenced by a variety of factors. When it comes to turning learning platform into an O2O one, difference in people's acceptance towards the off-line function exist in specific ways.

With the result of the research, the online learning platform are designed location-based and off-line functions added. As for how to achieve the blended process in E-learning in higher education, suggestions are offered as to build an inner-campus communication society in the LBS. Social relationships are important while high-tech environments may compromise the balance of trust, care and respect between teacher and student. Therefore, college students are encouraged to take the instructional role themselves on and off the platform in the design of the system. Guaranteed by the belongingness of students to their own school, the location-based society makes them feel safe to communicate with each other. And from what have been proved in the study, the rule goes for both genders.

As for the detailed design of the learning content, adaptive instructional materials can be provided through tailor questions to each student's ability and calculate their scores. In the process of blended learning, students are encouraged to work both individually and socially or collaboratively as opportunities are offered to learn in different circumstances.

As a tool, or to say a new way to learn, technologies elaborate its function in altering our conception of learning. Knowing and accepting the difference, the design of the platform is also optimized to assist learners as well as to improve blended learning experience in the process.

## 5.2 Limitations and Suggestions for Future Research

The paper has concentrated on the differences of students and the interactions between our platform users. However, we haven't provided an efficient way to solve the potential problems. Although the sample for the research is more than 400, errors and deviations may exist when we use the features of the sample to speculate the overall

situation. Thus the practicalities of the situation need to be substantiated in the implementation of the platform.

New technologies are frequently accompanied by unrealistic hype and promise regarding their transformative power to change education for the better or in allowing better educational opportunities to reach the masses. With the Internet and social media, using educational apps makes the students highly susceptible to distraction and sidetracking. Even though proper use has shown to increase student performances, being distracted would be detrimental. The introduction of blended learning cannot solve the problem thoroughly.

By far the greatest latitude of choice exists the very first time a particular instrument, system, or technique is introduced. In that sense technological innovations are similar to legislative acts or political findings that establish a framework for public order that will endure over many generations. And that's why we should think twice before taking action.

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