# An Analysis of College Students' Satisfaction with Online Courses-Data Processing Based on SPSS

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**Abstract:**
The development of Internet technology has changed the way college students learn, making more and more college students choose online courses. This research is based on domestic and foreign scholars' research on college students' satisfaction with online courses, with reference to several representative literatures in China. The author of the article uses SPSS software to process the data. It summarizes the satisfaction of college students with online courses, and concludes that most college students are satisfied with online courses.

***Keywords****: online courses; satisfaction; online learning; SPSS analysis*

## 1 INTROCTION

The rapid development of Internet technology has made people's learning methods more diverse. With the development of society, people's learning needs are constantly changing, and people are more and more interested in online courses. The 21st century is the era of knowledge economy. The explosive growth of knowledge makes people change their previous production and way of life. Online learning gives full play to the characteristics of wide spread and fast spread of the network. Such sufficient and rich online resources make the public feel access to knowledge can be achieved at home.

In addition, online learning enables global Internet users to share knowledge, and educational resources from developed countries can be transmitted to less developed countries through the Internet, thus realizing educational resource sharing. Most importantly, online learning is a learner-centered learning method, and the learning process can be determined by the learners themselves, which largely meets the individual needs of online learners for personalized learning.

Then in order to explore the effect of people on online learning, we will refine the perspective to the satisfaction of college students with online courses. We use the satisfaction of online courses as an indicator to test people's learning effect on online courses. The data processing part of this research will select a relatively representative domestic literature is analyzed.

Although users with access to the Internet can conduct online learning, this study mainly focuses on college students' satisfaction with online courses, mainly because college students account for one-third of online course users. American education company The Learning House and Aslanian Market Research jointly released a research report "Online College Students 2014: Comprehensive Data on Demands and Preferences", the study shows that about one-third of the world's college students currently take full online learning., one-third of them completely adopt the traditional campus learning method, and the remaining one-third adopt the first two learning methods. [7]

College students are highly educated groups, and using them as samples to study the satisfaction of online courses has a certain representativeness, which helps us to understand the satisfaction of the middle and high-quality groups represented by college students in the society with online courses.

## 2 ONLINE COURSES

With the global informatization, people's learning methods have changed a lot. The rise of multimedia has changed the form of education. Due to the situation of the new crown epidemic, many colleges and universities at home and abroad have transformed the traditional offline campus learning into a more flexible and more flexible one. Changed online teaching.

Compared with the traditional teaching mode, online learning has the characteristics of low resource


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development cost, high resource co-efficiency, strong pertinence, and one-to-one teaching can be realized at any time. The unique advantages of online learning make it rise rapidly around the world.

By splitting the compound word e-learning, and conducting conceptual analysis and comparison, some foreign scholars believe that online learning is a way to access learning content through a computer, which can be presented on the Web and Internet, or simply stored in a computer hard disk [8]. Zhong Zhixian believes that online learning refers to the courses and learning provided by the Internet, which is a strategy to adapt to the rapid development and change of the environment, or to induce the rapid development and change of the environment [9]. Terry Anderson and Randy Carriso believe that online learning is the collection of learning materials through the Internet. During the learning process, learners obtain learning support through interaction with teachers, students and learning content, so as to acquire knowledge content, construct the meaning of personal learning, and in the learning process. grow with teachers and students in the middle [6]. From this, we conclude that online learning is to use the Internet as a medium to carry out online educational activities. We can see that the definition of the concept of online learning needs not only to affirm the technology of Internet media but also to include the content of learning. The online courses in this study refer to the learning activities of online courses realized through Internet devices such as computers and mobile phones.

## 3 SATISFACTION

When it comes to satisfaction, we have to mention the concept of satisfaction first. Martin believes that satisfaction refers to the difference between the individual's expectations for the experience gained and the actual feeling. When the learner's experience equals or exceeds the expected, he feels satisfied; otherwise, he is dissatisfied [4]. Tough believes that learning satisfaction refers to a feeling or attitude, which accompanies learners' learning activities. When learners' desires and needs are met, they feel satisfied [10]. We can see that satisfaction is more described as whether the individual's inner wishes or needs are realized. Combining the research of various scholars, this study believes that learning satisfaction refers to the learners' overall feeling and response to learning. This feeling And the response comes from the results of learning, that is, whether the learning results meet the needs of the learners and whether the learning experience makes the learners feel happy [12].

Zhang Xiaohe believes that online learning satisfaction is an important indicator to evaluate the effectiveness of online learning. [11] Online learning satisfaction represents the learner's willingness to choose the online learning form again, indicating the learner's satisfaction with the online learning experience. Fang Xu believes that online learning satisfaction is an overall feeling and subjective evaluation formed by learners after comparing the actual perceived effect of online learning with the expected value, and it is a cumulative psychological response. The higher the cumulative degree of responses, the higher the learner's learning satisfaction [2].

Based on the perspective of customer satisfaction, this study starts from the relationship between college students and online education, and believes that online education provides educational services to students, and learners exist as consumers and beneficiaries of online education. If you can gain knowledge from an online course and have a high rating for an online course, you are more likely to choose it again. Liu Jun xue and other scholars analyzed from a dialectical point of view, learning satisfaction is the perception of quality by college students on the basis of expectations, and it is also an expression of quality, and they believe that the quality of higher education is the dialectical unity of "service quality" and "product quality". The online learning satisfaction of college students is not only an evaluation of online education services, but also a perception of the quality of online education. To sum up, this study believes that college students' online learning satisfaction is the learning quality perceived by college students after experiencing online education. [1] [3]

## 4 THEORETICAL BASIS

The theory of customer satisfaction originated in the field of modern industry and commerce, and was later applied to the field of higher education by scholars. Its core is to explore the satisfaction and pleasure of consumers for products or services, and to understand the attitudes of customers, so as to improve the quality of products and services to meet consumer needs. Oliver was the first to put forward the "expectation consistency model", which analyzes the factors that affect customer satisfaction in the same framework, and believes that the factors affecting customer satisfaction include customer expectations and perceived quality. When the customer's expectation is consistent with the perceived quality, there

will be a sense of satisfaction, and if the difference is large, a negative satisfaction evaluation will be obtained [5].

## 5 RESEARCH METHODS

This study combines domestic and foreign studies on online course learning satisfaction, and concludes that most of the studies mainly use literature analysis, questionnaire surveys, interviews and other research methods.

## 6 QUESTIONNAIRE SURVEY AND DATA ANALYSIS

Based on the analysis of the above studies, this article will mainly introduce a representative study of college students' satisfaction with online courses in China [12]. Wang Chenglin divided the questionnaire into two parts, with a total of 36 questions. The first part of the questionnaire is a survey of demographic characteristics of basic personal information, including gender, grade, major, family location, etc., with a total of 6 question items designed. The second part is designed based on the factors influencing college students' online learning satisfaction The table contains four dimensions: learners, teachers, courses, and environment. The last part of the scale is about several questions about the overall satisfaction of college students in online learning. A total of 30 question items are designed, except for the first question, which asks about learning motivation. Multiple-choice questions are not included in the scale, and the rest of the questions are all based on a 5-point Likert scale, which consists of 29 items. The higher the score, the higher the satisfaction of college students with online learning. The study randomly distributed 700 questionnaires to college students nationwide and recovered 681 questionnaires. Excluding 37 questionnaires that were unusable due to missing or wrong selection, a total of 644 valid questionnaires were collected, and the recovered questionnaire data was imported into statistical software. SPSS25 for processing and analysis. In another article by Chen Huihui, she designed a questionnaire on college students' satisfaction with online courses, which is divided into four dimensions, including learner factors, online course factors, teacher factors and environmental factors, 31 questions in total [1]. SPSS17 software was used to analyze the reliability of the questionnaire, that is, reliability test, and it was concluded that the Cronbach's Alpha coefficient of this questionnaire was 0.894, which indicated that the internal reliability of this questionnaire was relatively high. The survey results were analyzed with spss17, and representative factors were extracted. The results showed that the load of each factor was greater than 0.6, which proved that the questionnaire had good construct validity and could be tested. Using SPSS software to conduct correlation analysis on the collected data, we can judge whether there is a correlation between the independent variables (such as gender, grade and major) and the dependent variable (online learning satisfaction). After statistical analysis, we found that gender, grade, there is no significant difference between the major and online learning satisfaction, indicating that there is no significant difference between the online learning satisfaction of college students regardless of gender, grade, and which major they study in college. The data below is mainly for the analysis of Wang Chenglin's experimental data.

### *6.1 Reliability and validity tests*

From the results of construct validity analysis, the correlation values between the total scale and each subscale are between 0.429 and 0.892, showing a moderate-to-high degree of positive correlation, indicating that the total scale and the subscales and each component are positively correlated. The tables maintain both directional consistency and their independence. This indicates that the scale developed by this study has good construct validity.

**Table 1** Reliability Analysis

| | total table | learners | teachers | courses | environment | overall satisfaction |
|---|---|---|---|---|---|---|
| alpha coefficient | .936 | .733 | .831 | .823 | .788 | .863 |

### *6.2 University students' satisfaction with online courses*

It can be seen from Table 2 that there is little difference in the average value of college students' online learning satisfaction in the total scale and each subscale. Among these scales, the average satisfaction score of college students in environmental factors is the highest, reaching 3.39; while the average satisfaction score in curriculum factors is the lowest, only 3.15. In addition, after analyzing the scores of the questionnaire, we found that we assumed that the respondents selected the "basically satisfied" option on each item, then the average satisfaction rate was calculated based on the number of people who chose the "basically satisfied" option on each item and above, then the the average satisfaction rate was 78%. This shows that nearly 80% of the surveyed college students are "basically satisfied" or above in their satisfaction with their online learning.

**Table 2** Average Score of College Students' Online Satisfaction

| | total table | learners | teachers | courses | environment | overall satisfaction |
|---|---|---|---|---|---|---|
| average score | 3.25 | 3.17 | 3.21 | 3.15 | 3.38 | 3.32 |

On several items of the dimension of learner factor, 85.87% of the college students' satisfaction rate reached "Basically Satisfied" or above, indicating that college students have a positive attitude and a high sense of identity towards online learning. Judging from the satisfaction rate in the dimension of teacher factors, college students are more recognized for the professional quality of online teachers, with "teacher professional quality" accounting for 89.13%, "teacher teaching design" accounting for 71.24%, and "class hour arrangement" accounting for 83%. Among the two dimensions of course factors, "course content design" accounted for 85.33%, and "interaction design" accounted for 48.01%. In the dimension of environmental factors, the satisfaction rates of learning platform design, learning support services, communication equipment and network communication performance are 86.87%, 74.54%, 90.04% and 88.41%, respectively. The final overall satisfaction factor, this part designs a total of 5 items in the questionnaire, involving the achievement of online learning goals, whether to recommend courses or teachers, willingness to continue online learning and online course satisfaction. Satisfaction The rates were 85.14%, 75%, 84.23% and 89.50%, respectively.

## 7 CONCLUSION

Based on Wang Chenglin's data on the satisfaction of college students' online courses, we found that in general nearly 80% of college students' satisfaction with online learning has reached "basic satisfaction" or above, indicating that the vast majority of college students are satisfied with online learning. For Chen Huihui's experimental conclusion, satisfaction with online courses is different. For example, learners of M00C and open video courses have significant differences in learning satisfaction. By comparing the mean values, it can be seen that in terms of learning satisfaction, learners of M00C are more satisfied with learning satisfaction. The score is significantly higher than that of video public courses such as NetEase. However, through the analysis of several dimensions in the questionnaire, we can also find that there is still a lot of room for improvement in online courses.

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