

College English Translation and Informatization Teaching Innovation under the Background of Network Information Technology

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Abstract: With the rapid development of the Internet information technology, there is no substitute for it in the information exchange. However, the IT (Information Technology) and the university's translation teaching have some mutual promotion and mutual influence. In the course of information teaching, it is an important approach for the teachers to make use of the Internet. In the traditional English teaching mode, teachers usually stimulate students to participate in classroom situational activities through multimedia devices and network resources, so as to improve the learning effect. However, due to the heavy burden on students' schoolwork and the lack of extracurricular reading, it is difficult to cultivate students' English ability. Therefore, it is difficult for students to compare their learning effect with the teacher's teaching. Therefore, this paper combined network information technology with college English translation and information based teaching innovation, and created an Internet learning system to help college English translation teaching and learning. In this paper, a comparative experiment was conducted to investigate the validity of IT in college English translation and information education. The results showed that this technique can significantly increase the students' interest in English learning. Meanwhile, it can raise the average grade by at least 3 percent, and improve their English translation level effectively.

Keywords: English Translation, Network Information Technology, Transformation of Education, Talent Cultivation

1. Introduction

Under the background of economic integration and information sharing, China has more and more frequent exchanges with other countries, and there is a great increase in the demand for versatile translators. Translation teaching, as an important component in English teaching, plays an important role in the training of talented people. Although the requirement of English translation is very high, there are still a lot of questions that need to be resolved. From the point of view of class teaching, the present English translation curriculum is still "inculcated", which emphasizes on translation and translation learning, and ignores the training of translation techniques, creativity and operational capability. Meanwhile, the interaction and interaction between the teacher and the student is neglected, so that the student's subjectivity can not be fully brought into play. Therefore, it is of great importance to innovate the method and to create the technique.

Many experts and scholars have studied college English translation and information teaching before. Shen Huijia looked at the localized translation teaching mode in local colleges and universities from the perspective of new liberal arts. By combining the specific situation of local colleges and universities and based on the characteristics of localized translation, she proposed a new translation teaching model of "minor", "learning by doing" and "classroom+practice", which ensured the teaching effect of localized translation [1]. Su Weili improved teaching efficiency and optimized the theory and practical technology of education and teaching process through modern education theory and the application of modern scientific and technological achievements and system science. He also studied learning processes and learning resources to solve educational problems. He emphasized that teaching process should be organized from the perspective of learners to optimize and coordinate teaching resources, which greatly improved students' English Chinese translation ability [2]. Gu Shan put forward a method of automatic translation in English based on B/S (Browser/Server) framework, which aimed at optimizing and improving the computer aided translation system. Not only can it get a good

translation performance, but also it can efficiently and rapidly translate the memory-assisted long-character English into English. It has the advantages of high data recall rate, high precision and reliability, and provides a better English teaching system for students [3]. Sun Kun constructed a model composed of specific programs that are easy to use by introducing the cross language differences between English and Chinese in topic chain, as well as the differences between topic chain model and topic progression theory, so that English Chinese text translation becomes a more manageable process. The use of topic chain strategy would improve the efficiency and quality of English Chinese translation, and make Chinese translation texts more customary, which provides practical theory and practice for teaching. At the same time, the hypothetical teaching method was used to help students acquire bilingual ability and strengthen their core transfer ability [4]. All of these methods can be used for reference in the future English translation teaching research. However, with the development of the times, the network information technology is becoming more and more perfect, and the information technology is more practical, which provides ideas for this paper to study English translation and information teaching innovation under the network information technology.

Nowadays, the Internet IT has been proved to be feasible and superior in a lot of districts, and many scholars have researched it. Through the research on English teaching reform by means of Internet IT, Wang Ling made an analysis of the status quo of English teaching and English teaching in IT environment, and put forward some strategies to improve students' English proficiency and promote the development of English teaching and learning [5]. Wei Lanlan analyzed the problems and challenges that Chinese universities are facing in the "Internet +" era. Meanwhile, the author also proposed some countermeasures for the reform of English teaching, which would be helpful to the improvement of English teaching in higher learning institutions [6]. With the help of Internet IT, Shisheng Y N G explored the best way to construct a hybrid teaching model based on IT, which has created the optimal environment for students' personalized learning [7]. Through the development and application of digital teaching resources in teaching practice, Yang Guang made full use of multi-media teaching resources to improve the quality of teaching. All of these research provided the method and theory foundation for the thesis.

Therefore, in order to enhance the efficiency of college English translation teaching and students' translation skills, a new teaching model was proposed based on IT. By combining data driven learning with mobile learning, this method can be used in English translation and information teaching in universities. Hopefully, this paper would contribute to the innovation of college English translation and information teaching [8].

2. College English Translation and Information based Teaching

2.1 Evaluation of the Current Situation and Problems of College English Translation and Information Teaching

Compared with senior high school, college English education no longer needs to face great pressure of entering a higher school, but it still needs to undergo the CET-4 and CET-6. The teaching method of English teachers is the same as that of traditional exam oriented education. In daily teaching, teachers still focus on writing, listening and reading comprehension, and set the ultimate goal of passing the CET-4/CET-6 exam [9]. Although this teaching method can help students lay a solid foundation on the basic knowledge of English, it can also help students to use English in practice. In particular, it has little or even opposite effect on English translation of individual English level. Students rely too much on test set thinking and neglect the necessity of flexible use of English language [10]. In college English teaching, many teachers rarely mention this, so that in four years of English teaching, many people know nothing about it. As a result, their translation level cannot reach the standard of "faithfulness, expressiveness and elegance", or even the basic communication needs. This kind of education mode has a lot of defects. The students trained by this kind of education must be unqualified [11].

Nowadays, with the constant development of IT, Foreign language education is developing towards "personalization and internationalization", that is, the teaching model of "multi-language" [12]. Along with the development of this mode, the teaching method of translation has experienced a tremendous change. In recent years, there have been a number of problems and shortcomings in the teaching of college English translation in China:

- (1) In the teaching process, there are some problems such as teachers' inadequate knowledge and

students' inability to effectively use information technology.

(2) As for teaching content, the information support conditions are insufficient, and the teaching content is single and incomplete. It only pays attention to theoretical teaching and does not pay attention to practical operation, and students do not have a deep grasp of translation theoretical knowledge.

(3) As for teaching methods, there is a lack of analysis and judgement on the actual translation activities, as well as a lack of guidance to the students' interests. Students have to deal with their homework during their English study. Students also focus only on the comprehension of theory, and do not combine the learned knowledge with specific translation practice, and lack the initiative of applying theory to practice.

2.2 Application of Network Information Technology in College English Translation and Information Teaching

According to the theory of constructionism, knowledge is not taught by teachers, but is obtained through the construction of meaning with the help of other people and learning resources. Teachers are just instructors in teaching activities [13]. Network information technology is widely used in the development of modern education because of its highly shared, diversified, interactive and real-time characteristics. The application of network information technology in college English translation and information teaching is shown in Figure 1.

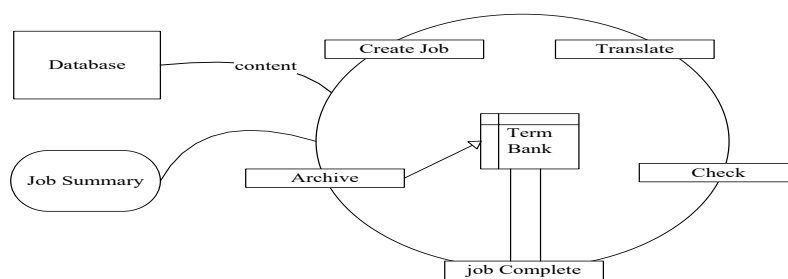


Figure 1: Application of network information technology in college English translation and informatization teaching

(1) It is necessary to make use of information technology to optimize the teaching content in the classroom. In order to enhance the students' flexibility in applying, it is necessary to focus on the training of English translation skills. From the current college English textbooks, except for English translation majors, translation accounts for a small proportion in English textbooks [14-15]. Therefore, teachers should take on more teaching work to improve students' real English level, instead of making up for the lack of teaching materials by improving their ability to take exams. A qualified translator must understand the usage of various languages, which depends on the understanding of the local cultural background. Teachers can use information networks to collect teaching materials to optimize classroom content. For example, by watching documentaries to become familiar with the authentic expression and correct pronunciation of English, students also unconsciously feel the unique charm of the historical background. Furthermore, the application of multi-media teaching can also make the classroom study more vivid. College English teachers should fully utilize the advantages of audio and stereo in order to increase the students' interest in English translation and reduce the boring atmosphere [16].

(2) The application of IT in college English network teaching is not only a new technique, but also an important practical meaning for education. Now students, their learning level is constantly improving, and their learning tasks are also increasing, so English learning should also keep pace with the world. It is necessary not only to emphasize the professionalism and purity of English translation, but also to understand and be familiar with the cultural situation of native English speaking countries. Information technology has a strong ability of storage and retrieval in college English teaching, which can help college students improve their understanding of the outside world. In the classroom, students can better understand what they have learned by timely searching for the content and using videos, pictures and cases. The teaching time of a class is very limited. The teacher can also upload the things that are not finished in the class to the Internet for students to learn by themselves. At the same time, information technology is also an important platform to enhance the relationship between teachers and students and promote teacher-student interaction. English teachers can use social media to

communicate with students after class, and organize English groups according to students' majors or learning levels. In addition, schools can also use multimedia technology to establish an English translation evaluation platform, so that students can independently conduct self tests, including oral, reading, writing and other aspects of the test. This can not only enhance students' interest in learning, but also save valuable time, find students' learning blind spots, and thus improve teaching efficiency.

(3) Therefore, it is necessary to set up a comprehensive assessment system for translation competence in order to gain a full understanding of students' study conditions and to establish an integrated and effective assessment system. Nowadays, the testing method of English translation ability is very traditional, which is not only inefficient, but also inflexible in language use. Therefore, the translation evaluation system as shown in Figure 2 can be adopted to improve.

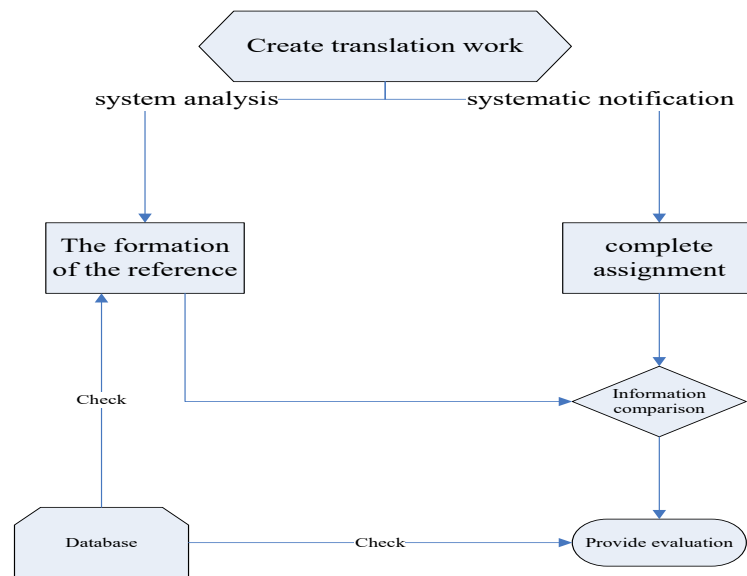


Figure 2: Schematic diagram of English translation assessment system

Language is a flexible tool. By using information technology, students can not only log on to the platform to learn and complete the corresponding tasks, but also teachers can supervise students' learning through the background scoring system. Students can also log in at any time after class. This is not only to complete the learning task, but also to provide students with a platform for active learning, which is much more flexible than the traditional paper examination.

2.3 Network Information Technology

Information technology (IT) means technology of information. Different people and different books interpret it differently, but it is an accepted view that IT consists of three parts as shown in Figure 3.

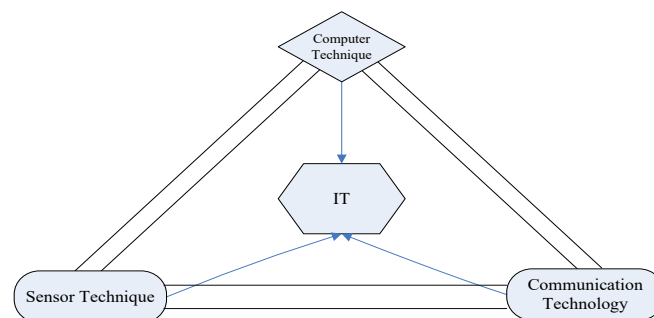


Figure 3: Three elements of information technology

(1) Sensor Technology: sensor Technology is a multidisciplinary science and engineering technique that acquires and identifies the information from natural resources and processes. It includes the planning, design, development, manufacturing/construction, testing, application, evaluation and improvement of sensors (also known as transducers), information processing and identification. It is the extension and extension of the sense organs of human beings. The most obvious example is the bar

code reader, which mainly has two kinds of theory methods:

① Kalman filter (KF)

a) It can be applied to linear, discrete and finite dimension systems. The Kalman filter can be applied to any Autoregressive Moving Average System (ARMAX), or a system represented by rational transfer function, which can be described in the state space.

b) Any set of observations does not remove the confidence of $x(t)$. Similarly, the gain $K(t)$ is independent of the observed data.

c) Based on the Gaussian distribution, the conditional mean and conditional variance of Gaussian random variables are computed with Kalman recursion. Based on Kalman filter, a linear least variance estimation is presented, which is called the least variance estimation. Its expression is shown in Formula (1):

$$X(k)=aX(k-1)+b U(k)+w(k) \quad (1)$$

It uses mathematical iterative recursive calculation method to provide the most effective optimal estimation of the fused data under statistical significance, and can also achieve the optimal goal in English translation teaching.

② Artificial neural network method

By simulating the structure and working principle of the human brain, the information collected by the sensor is used as the input of the network, and then the network training is used to perform some intelligent tasks on a specific machine or model, so as to eliminate the influence of non target parameters.

(2) Communication technique: it is the extension and extension of the nerve system, and it is responsible for the transmission of information. The main concern is the principle and application of information transmission and signal processing in the communication process.

(3) Computer technology: computer is a kind of computing work with data storage and modification functions, and can handle relevant logic and data. It is a kind of modern smart electronics device, which integrates the technology of network, computation and media. Computer technique is a technique that is applied in the field of computer science, or it means the technique of hardware, software, and application. Computer technique is characterized by its obvious integrated features. It is the extension and extension of the function of the brain, and it also carries out the information processing function.

Informatization refers to the transformation of other industries and industries by means of IT, thus increasing the efficiency of the whole industry. In this process, IT has become a powerful tool. It is also an innovation to apply it in translation teaching, which improves the teaching model [17-18].

2.4 Relevant Concepts and Formulas

In order to explore the real application of network information technology in college English translation and information based teaching innovation, this paper conducted a survey and analysis on college students in two ways: questionnaire survey and follow-up observation. Before analysis, the following statistical concepts need to be understood:

(1) Weighted average: its expression is shown in Formula (2):

$$\bar{X} = \frac{x_1f_1+x_2f_2+\dots+x_kf_k}{n} \quad (2)$$

It is obtained by multiplying each unit's value by its weight, then adding up the sum and dividing it by the total number of units. The weighted average is dependent not only on the values of the units in the population (variable values), but also on the frequency (frequency) of the respective values. Since the number of times of each value has a weighting effect on the mean, it is called as weight, which is convenient for people to know the average level of the English translation [19-20].

(2) Overall variance: its expression is shown in Formula (3):

$$\sigma^2 = \frac{\sum(X-\mu)^2}{N} \quad (3)$$

The overall variance is also called partial variance, in which the result of σ^2 is the overall variance and X is the variable; μ is the overall mean value (basically the same as \bar{X} , and can be replaced), and N

is the overall number of cases. It reflects the degree of dispersion of a group of data, and can compare the overall differences between the two groups of data.

(3) Median: its expression is shown in Formula (4):

$$M_e = \begin{cases} x_{(\frac{n+1}{2})} & N \text{ is odd} \\ \frac{1}{2} [x_{(\frac{n}{2})} + x_{(\frac{n}{2}+1)}] & N \text{ is even} \end{cases} \quad (4)$$

The median is also called the median, and it is a proper term in statistics. It is the number in the center of a sequence of data. It represents a value in a sample, a population or a probability distribution. It can split the set into equal top and bottom sections. For the finite number set n , the median is the data in the middle. If the number of observations is even, the mean of the two middle values is used as the mean.

3. Investigation and Evaluation on English Translation Teaching

In order to explore the feasibility of using IT in English teaching, a questionnaire and a comparative experiment were carried out [21].

3.1 Questionnaire

Questionnaire survey is a way based on the distribution of questionnaires. By making detailed and detailed questionnaires, the subjects can make corresponding responses according to their own conditions. The so-called questionnaire is a series of questions about the purpose of the investigation. It is a data collection tool widely used in social surveys and research activities. The recovery of this questionnaire is shown in Table 1.

Table 1: Questionnaire recovery

	Number
Valid questionnaires	915
Recovered questionnaires	936
Useless questionnaires	21
Total	1000

Among them, 1000 questionnaires were distributed, 936 of which were recovered, 915 of which were valid. The recovery rate of the questionnaire was 93.6%, and the effective rate was about 97.8%. 21 questionnaires were invalid due to stains or incomplete information. After the questionnaire was collected, the response to the questionnaire was also sorted out. The summary is shown in Table 2 (multiple questionnaire options are available).

Table 2: Statistics of questionnaire responses

Options	Number of people
Enjoy the English translation courses	238
Think highly of the English translation	633
Adopt network information technology to learn translation	172
Combine theory with practice	87
Less than 60 on the last test	211

It was easy to see from Table 2 that most of the students participating in the survey did not get a good teaching of English translation. Although 633 students, which accounted for 69% thought English translation is very important, very few students adopt network information technology and integrated theory with practice. As for the English translation course, only 238 students can enjoy themselves; most of them are not interested in English translation, and 211 students in the survey failed in the last translation level exam. To some extent, it reflects the inadequacy of current English translation teaching, which lacks sufficient attraction for students and needs innovation urgently.

3.2 Comparison Experiment

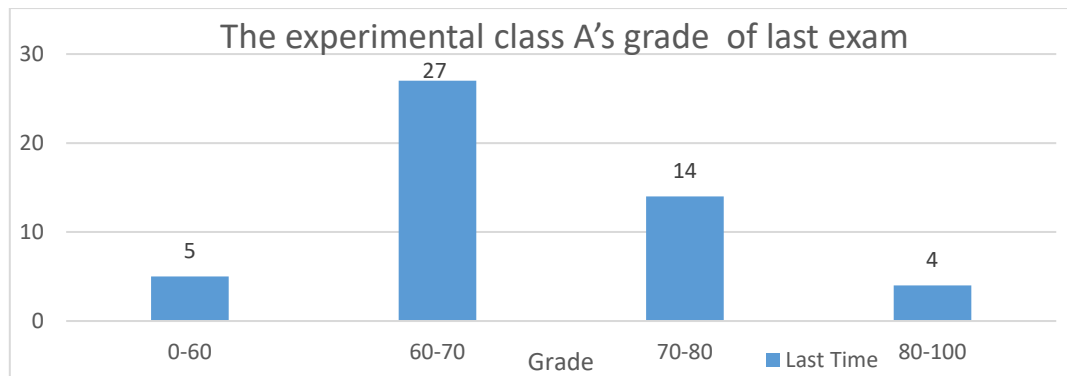
In order to find a solution, 50 students from each of the two classes in the school were observed for a month, and it was suggested that teachers in experimental class A adopt network information technology. At last, the students' translation achievements were counted. The results are shown in Table

3.

Table 3: English translation test results of class A

Rank	Grade	Rank	Grade
1	92	26	68
2	92	27	67
3	91	28	67
4	89	29	67
5	88	30	66
6	88	31	66
7	83	32	66
8	81	33	66
9	77	34	65
10	77	35	65
11	77	36	64
12	77	37	64
13	76	38	63
14	75	39	63
15	74	40	63
16	73	41	63
17	72	42	62
18	71	43	62
19	70	44	62
20	69	45	61
21	69	46	60
22	69	47	60
23	69	48	60
24	68	49	56
25	68	50	53

The pass rate of this exam was 96%, but one exam was not convincing, so the results of this exam were compared with the level of the last English translation exam. The data of the last exam is shown in Figure 4.

*Figure 4: Statistical chart of the test scores of students in experimental class A*

From Figure 4, it can be seen that in the experimental class, in the past, 10% of the students did not meet the English translation standards. After the application of network information technology, only 2 students did not meet the English translation standards, and the number of passing and high percentage groups was growing.

This reflected the level change of the two exams, and the difficulty of the exams was different, which may not be enough to reflect the effectiveness of teaching. Therefore, from the horizontal comparison, it was compared with other ordinary classes in the same exam. The comparison data is shown in Figure 5.

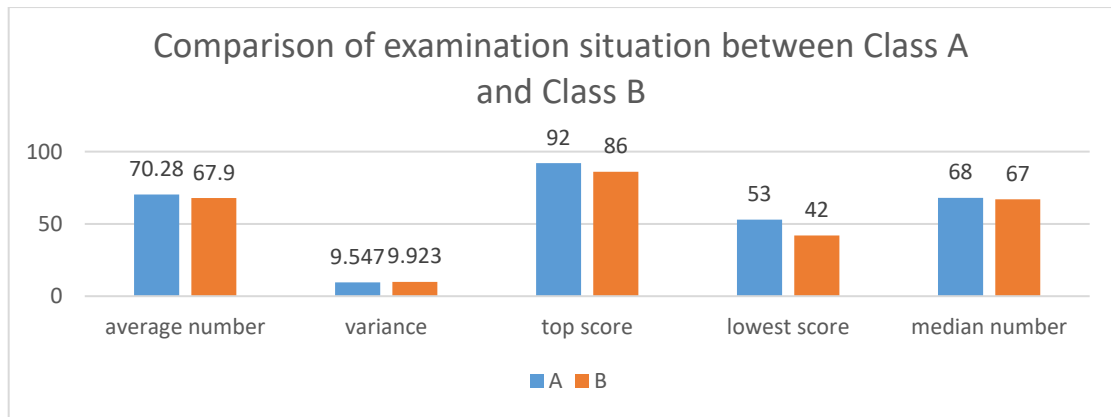


Figure 5: The examination of class A and class B

Among them, class A is an experimental class and class B is an ordinary class. In this English translation test, class A was obviously better than class B. In terms of the average score of the class or the highest and lowest scores, class A was higher than class B. However, for the variance value reflecting data dispersion, B was higher than A, which indicated that the internal level of class B varies greatly. To some extent, this reflected that the high or low scores obtained in class B had little to do with teaching and were affected by students' personal interests. The overall score difference of class A was small, and the median score of class A was slightly higher than that of class B, because the teaching methods based on network information technology had promoted the overall learning interest of class A. Therefore, this once again showed the superiority of network information technology. In order to ensure the preciseness of the experiment, this survey also learned about the level before class B. The examination results are indicated in Table 4.

Table 4: Transcript of last English translation test of class B

Rank	Grade	Rank	Grade
1	86	26	68
2	85	27	67
3	82	28	67
4	81	29	67
5	80	30	67
6	79	31	67
7	77	32	67
8	77	33	67
9	77	34	67
10	76	35	67
11	76	36	66
12	76	37	63
13	76	38	62
14	76	39	61
15	75	40	60
16	74	41	60
17	73	42	60
18	72	43	60
19	71	44	59
20	70	45	59
21	70	46	52
22	69	47	49
23	68	48	46
24	68	49	43
25	68	50	42

For more intuitive comparison, the collected data was made into Figure 6.

In Figure 6 and Table 4, the overall scores of the last English translation proficiency test in ordinary class B and experimental class were basically the same, and their pass rate and average score were roughly the same. However, the progress of this English translation test was much smaller than that of

A's. Under a lot of data, it was enough to reflect that network information technology is conducive to college English translation teaching and information innovation.

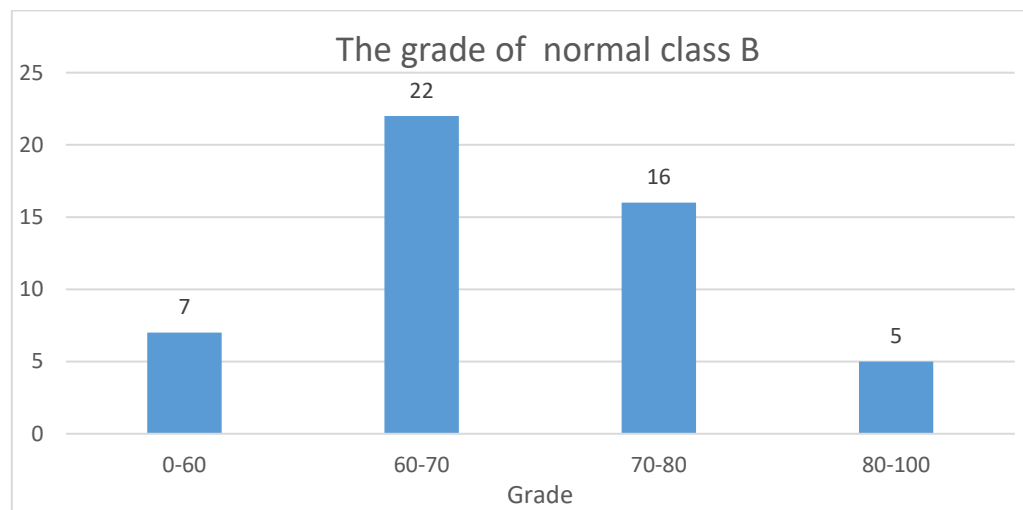


Figure 6: Statistics of last exam results of ordinary class B

4. Results and Discussion

The above experimental analysis showed that network information technology can indeed help college English translation and information teaching innovation, which had improved the overall average score by more than 3 percentage points. However, in the process of application, learners are the most important. Therefore, in order to solve the problems existing in English translation and information teaching, it is needed to adopt the following measures in the course of English translation. Firstly, it is necessary to pay more attention to the teaching of translation. Translation is one of the most important aspects in the use of language. Therefore, it is necessary to continuously improve the students' comprehensive ability to apply language in practice, and to develop the students' ability to read, write and communicate. Secondly, the research on the theory of translation teaching should be strengthened. Translation is a fundamental part of knowledge in language usage. Therefore, it is very important to strengthen the research on the theory of translation, especially on the basic theory of translation, which would greatly influence the students' overall quality. Thirdly, it is necessary for teachers to make full use of the advantages of network resources, and to convert the theoretical knowledge of translation into the actual teaching content. Fourthly, it is necessary to enhance the initiative of the students in the field of information learning. Teaching is just a part of a class, and learning is the principal part of a class. No matter what kind of education, the initiative of a student decides his or her level to some degree.

5. Conclusions

In the Information era, it is inevitable that Internet IT would be used, and so would the education department. The application of Internet IT is beneficial to education management and decision making. It is expected that all educators would realize the importance of network technology, and would be able to play the role of "Learners" in some degree, so as to get the best effect in educational administration.

For this study, it is also hoped that more people would pay attention to college education, college English translation teaching and information innovation. Due to insufficient research time and incomplete understanding of network information technology, there are still some deficiencies in this paper, which would be further analyzed and studied in the future. Education is the priority of a hundred year plan. It is hoped that today's college students can learn something and use it.

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