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Research Article

Research on English Situational Teaching Assisted by Multimedia and Network

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In order to study situational English teaching, situational English teaching assisted by multimedia and network was analyzed. This kind of teaching method needs to combine video, image, animation, and other processes to support the teaching work, and then it needs to build corresponding teaching scenarios based on actual needs, so that multimedia and network assisted teaching can provide support for students' English learning with the help of various teaching methods. Multimedia and network assisted English situational teaching has certain advantages and is helpful for later teaching. Therefore, it is necessary to actively use this kind of teaching mode to optimize the English teaching curriculum, lay a good foundation for the subsequent English learning of students, and finally optimize the teaching class of teachers.

1. Introduction

Multimedia assisted foreign language teaching is one of the core concepts of foreign language teaching. The combination of multiple teaching and foreign language teaching can combine teaching work with text, audio, visual, animation, and other functions. In this way, students' interest and enlightenment can be supported and stimulated to the greatest extent, and the teaching effect can be improved. The use of multimedia in education and teaching will lead to major changes in teaching concepts and teaching and ultimately lead to changes in thinking and teaching [1]. How to use modern educational technology to improve the English teaching level and students' English application ability, especially the effect of multimedia environment teaching, compared with the advantages and disadvantages of traditional classroom, has been the focus of research in recent years. This study emphasizes that students are regarded as cognitive subjects and active constructors of English knowledge and discusses how to use multimedia and network to conduct situational English teaching in junior middle schools theoretically and practically. This paper reviews some theories of multimedia and network assisted foreign language teaching, constructivism theory, second language acquisition theory, and multiple intelligence theory, and summarizes the current development of multimedia and network assisted foreign language teaching [2]. Under the guidance of these theories and practices, I conducted an experiment in the school where I teach for one year, which shows that multimedia and network assisted foreign language situational teaching can improve students' overall English level. It can overcome the drawbacks of traditional teaching, promote student-centered learning, stimulate students' enthusiasm and creativity, and achieve effective teaching results [3]. The English auxiliary teaching process is shown in Figure 1. The multimedia equipment component is shown in Figure 2.

Stepping into the 21st century, China faces the challenge of knowledge economy; especially after China's accession with WTO and the further opening of the door, the demand for talents and competition will be more and more fierce. As a result of market opening, a large number of transnational corporations will inevitably compete with domestic enterprises. In the fierce competition, people increasingly hope to improve their English level and application ability, so that they can communicate directly with the people of all countries in the world, so English is an important communication tool in this competition, and proficiency in English has become a very important standard of high-quality talents [4]. Because English plays an important role at

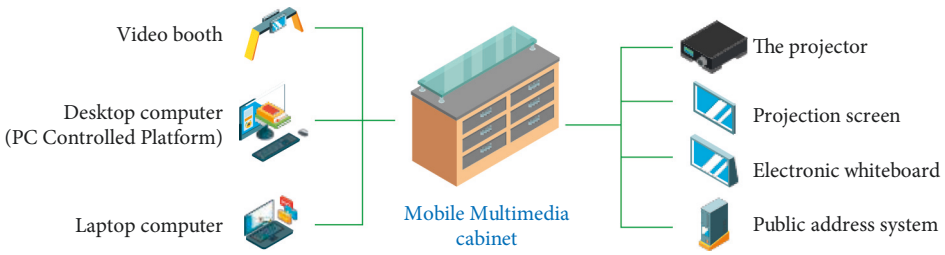

Figure 1: English assisted teaching process.

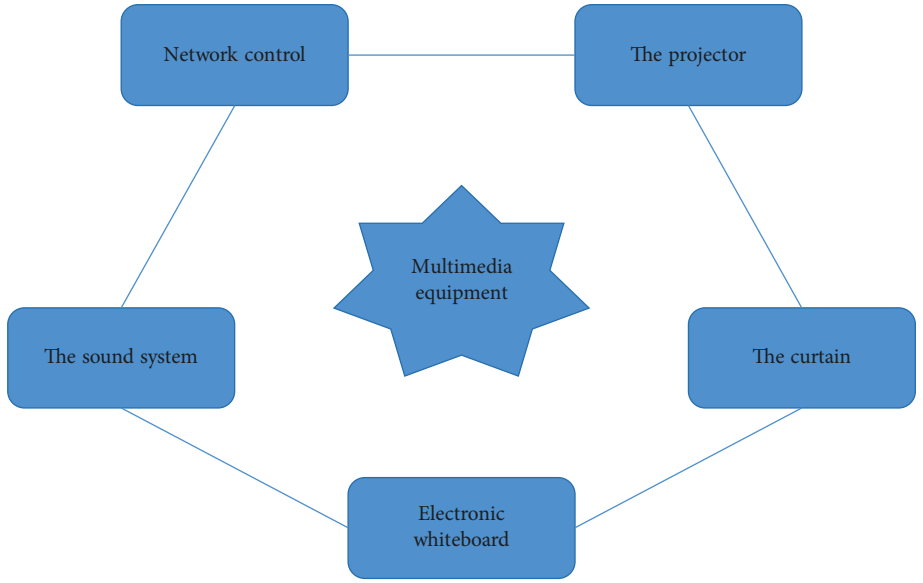

Figure 2: Multimedia equipment component.

the international level, it has become a foreign language that Chinese students learn in schools. However, for a long time, Chinese middle school English have been mostly taught by teachers. This traditional teaching method limits the effectiveness and efficiency of teaching and learning. This does not apply to English deaf, dumb, and time-consuming converters. Therefore, establishing a student-centered, teacher-centered, multilingual, multidisciplinary advocacy and outreach process is the key and a good way to develop and improve students' foreign language skills. Improving teaching efficiency has become the top priority. Command interference. The rapid development of modern educational tools, especially multimedia and network technology, provides a new learning platform for English teaching. Multimedia and network assisted foreign language teaching will become an important part of the development of foreign language teaching. For a long time, Chinese foreign language teaching has followed the traditional teaching method represented by lecturing and translation [5]. Many foreign language teachers are dominated by standards and teaching, refusing to learn modern educational knowledge and sticking to traditional teachings. There are still many educators who think that multimedia courses are only suitable for listening, speaking, and other courses that require repeated practice, but they do not have a good understanding of the efficiency and benefits of multimedia in foreign language teaching. Few teachers are able and willing to try to use multimedia computers as a teaching modification, which also affects the performance of multimedia computers for some reason. The ability of Chinese foreign language teachers to use multimedia computers is still poor. Most of them have not had formal learning or prejob training before using multimedia teaching, and most of them are practicing while learning at work. As the teachers are not skilled enough in computer operation, sometimes they will be at a loss in the face of various media when using multimedia for teaching or simply use certain media, which cannot achieve the effect of optimal combination, so that the modern teaching method of multimedia cannot give full play to its overall advantages [6]. In the aspect of developing courseware suitable for their own teaching, most foreign language teachers seem helpless and have to adopt the method of purchasing courseware for teaching. The purchased courseware has obvious defects and deficiencies in content and form. The advantages of multimedia assisted English teaching are shown in Figure 3, and the coding and composition of multimedia system are, respectively, shown in Figures 3 and 4.

2. Literature Review

Situational teaching method (situational language teaching) is also known as audio-visual method; it is on the basis of the

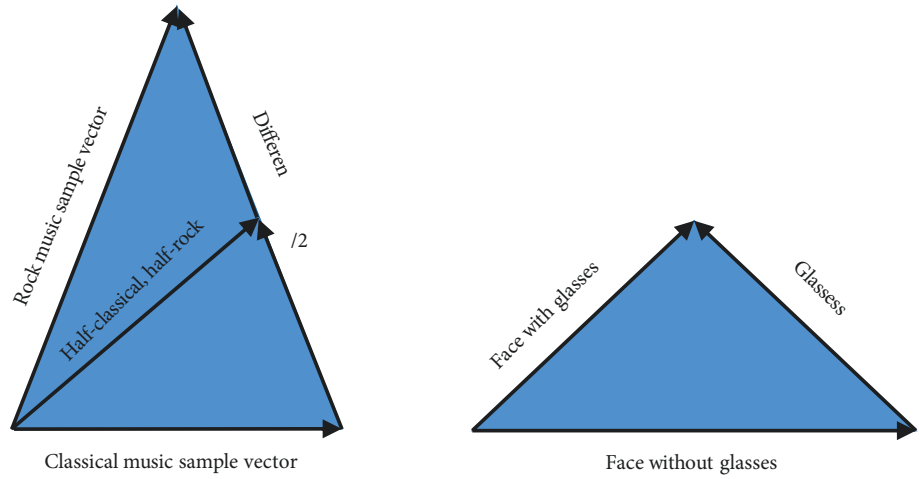

Figure 3: Multimedia assisted English teaching coding.

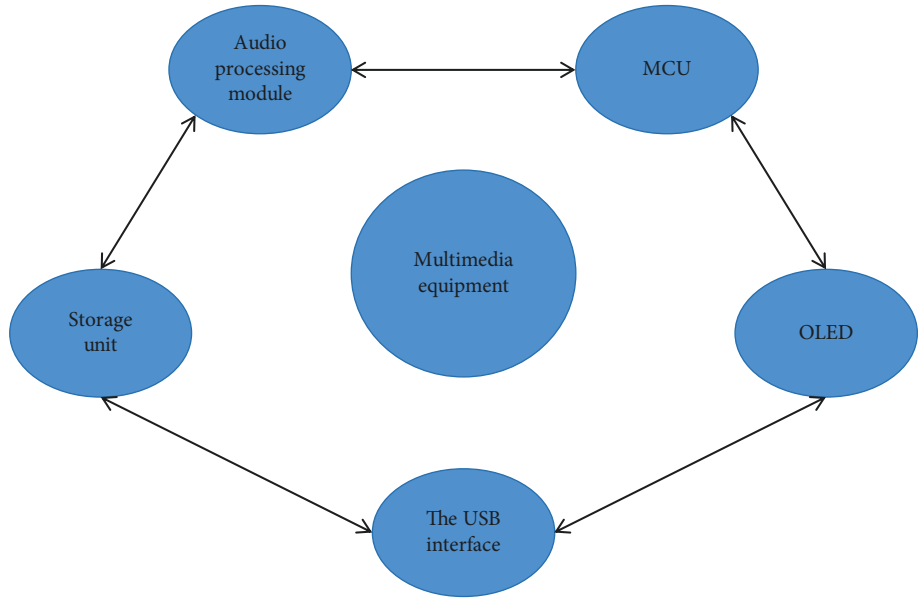

Figure 4: Composition of multimedia system.

direct method and the use of audio-visual teaching means. This kind of teaching method emphasizes the design of applied scenes, pursues practicality and authenticity, and is widely regarded as a teaching method that can improve classroom efficiency [7]. As for situational teaching method, Rong defined it as follows: teachers purposefully implement teaching by creating some vivid and specific situational methods, so as to jointly improve students' knowledge, ability, and emotion. With the extensive research and application of situational teaching method in foreign countries, situational teaching method was introduced into China in the 1970s and has been widely used [8]. Tom et al., who carried out situational teaching experiment for the first time in China, believed that situational teaching is a teaching mode that arouses children's enthusiastic learning emotions by creating typical scenes by combining vivid intuition with language description [9]. According to Jahedi and Ismail, situational teaching method refers to specific teaching needs in order to achieve teaching objectives in the teaching process. The teaching method of creating vivid and specific emotional scenes, arousing the same emotional resonance of children, helping students understand knowledge, and making students' quality develop comprehensively, mainly lies in stimulating students' interest in learning [10]. According to Zhang et al., situational teaching refers to a teaching method that introduces or creates real situations in the teaching process to improve learning effect and stimulate learning interest, which is highly inspiring and virtual interest and specificity. However, in English teaching, how to arouse students' initiative to learn English in the situation is also a very important problem. Situational teaching should not only pay attention to the content, means, process, and other object aspects of English teaching but also attach great importance to arouse students' interest in learning English [11]. Liu et al. believe that situational teaching method is that teachers introduce or create some specific vivid scenes

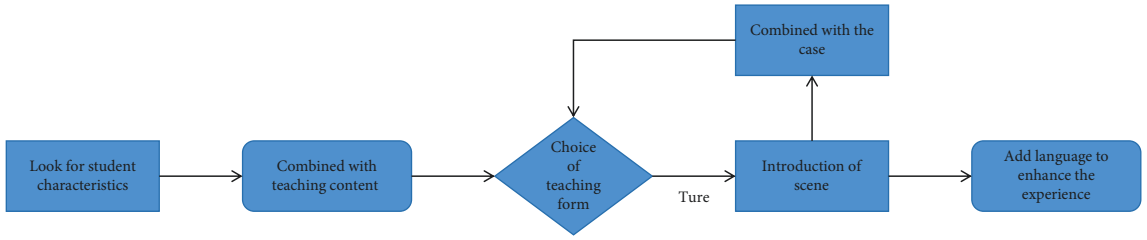

Figure 5: Situational teaching process.

purposefully according to the characteristics of students and in combination with the teaching content in a variety of ways, so as to provide sufficient examples for language functions, and the language knowledge taught should be activated to arouse students' attitude experience, to stimulate their enthusiasm and interest in learning, so as to help students understand the use of language development ability enlightening thinking and cultivating emotion of a teaching method [12]. The process of situational teaching is shown in Figure 5.

With the development of science and technology and the requirements of the times, computer assisted instruction (CAI) arises at the historic moment. There have been attempts to use computers in teaching since the 1950s, with programs such as the presentation of information in small steps and reinforcement in time. The United States is the earliest country in the research and application of computer assisted instruction, which has a history of more than 60 years [13]. Computer assisted instruction (CAI) usually refers to a teaching method that uses computers to assist or train teachers to complete certain teaching activities, provide students with knowledge, and provide technical training. After 1965, the role of computers in teaching and training began to be recognized, and the use of computers in teaching and training became a hot topic [14]. Computer assisted language learning (CALL) is a branch of computer assisted instruction; Levy concisely defined computer assisted language learning (CALL) as the search for and study of applications of the computer in language teaching and learning. Huang had a more specific definition: "Through the scientific, rational, and flexible use of modern information technology such as computers, multimedia, and networks to create a language learning environment, teach language knowledge, train language skills, and guide language learning method, high expression level, culture communication strategy" [15]. The types of multimedia are shown in Table 1. The process of making computer aided language courseware is shown in Figure 6.

In the first two parts of this chapter, the author expounds and reviews the concept and research status of situational teaching and multimedia and network assisted language teaching, respectively [16]. This part will combine the two, explain the concept of multimedia and network assisted English situational teaching in junior middle school, and review the research of experts and scholars at home and abroad on multimedia and network assisted English

Table 1: Multimedia types.

Multimedia types	
1	Language
2	Image
3	Audio
4	Cartoon

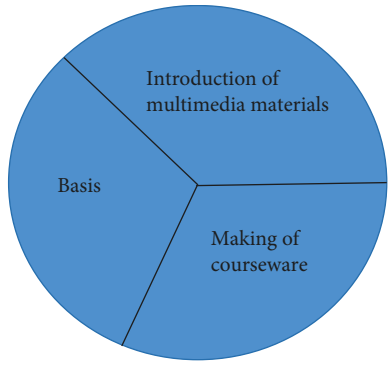

Figure 6: Auxiliary language courseware making process.

situational teaching. The author expounds the concepts and advantages of situational teaching and multimedia and network assisted language teaching in detail. In short, using situational teaching method to purposefully introduce or create some specific and vivid scenes in teaching can help students understand and use language development ability, enlighten their thinking, improve their interest, and cultivate their emotions, which is an effective way to improve the quality of teaching [17]. Multimedia and network assisted language teaching can dynamically introduce text, image, graphics, sound, animation, and other media information into the teaching process. Teachers can use media and communication tools to break down the boundaries of time and space, simulate multiple perspectives and perspectives, expose the outside world to the classroom, and allow students to obtain education close to the real world. Learning is integrated with life in a virtual learning environment [18]. Therefore, the author thinks that using multimedia and network to assist English situational teaching is a strong combination of the two teaching methods, and teachers' use of multimedia and network also brings convenience to the implementation of situational teaching. The research process of situational teaching is shown in Table 2. The components of multimedia and network technology are shown in Figure 7.

Table 2: Research flow of situational teaching.

	Situational teaching process
1	Understand current teaching situation
2	Analyze the concept of situational teaching
3	Apply situational teaching methods
4	Integrate research and development effectively

Constructivism has worked in education and psychiatry in recent years, leading the way in modifying curriculum, academics and math, teaching, teachers, scholarships, and science education. Constructivism believes that learning is not a teacher but a process by which learners create a concept based on their own experience or past experience. That is to say, knowledge is created by learners themselves, and cognition is also the process by which learners develop their own knowledge [19]. Although the theory of constructivism was not originally created for language learning, it has been widely used in language learning. Constructivism holds that education is to develop people's mind rather than simply memorizing what they have learned mechanically. Someone laid the foundation for the formation of constructivism theory. In his opinion, teaching should be based on the existing knowledge of learners, and learners should really participate in learning activities. Teachers should also create a specific environment for learners and conduct effective interaction with learners. Knowledge can only be understood through the application of activities in real situations [20]. Learning should be combined with situational social practice activities. Constructivism theory affirms the important role of learning situation in learning, emphasizes the creation and simulation of real environment, and believes that the situation in learning environment should be conducive to learners' meaning construction of learning content to the greatest extent. Teaching should make the learning process take place in situations similar to real life so as to solve students' problems in life. The disadvantages of traditional teaching are shown in Table 3.

3. Method

3.1. Solutions to Research Problems

3.1.1. Data Processing

(1) The data input required by the financial revenue and expenditure audit is the data text file generated by the accounting information system of the audited entity or other management information systems through the general data interface on the Internet (LAN or multimedia) in principle. It can be converted into the original database of audited units in a unified format for auditing of financial revenues and expenditures, which can be read directly by the audit module. The audited units that have not been connected to the Internet can also be input by floppy disk.

(2) Generate the audited financial statements and relevant account balances and amounts through the account audit table in the financial revenue and expenditure audit. After checking with the financial statements and account books generated by the accounting software of the audited entity, it is provided to the auditors for further auditing according to the requirements of financial revenue and expenditure auditing [21].

(3) In addition to the conventional financial income and expenditure audit, the computer audit system can also assist auditors to carry out the special audit of the income, expense, and profit of the owners of assets and liabilities. This is obtained by extracting the current data and historical database of the specified audit items, analyzing and comparing them. Therefore, the accounting information of the auditee after the audit must be saved in the audit file for the next audit.

(4) The statistical sampling common module can be called. The calculating sampling module provides sampling methods such as attribute sampling variable sampling or PPS sampling with cumulative coefficient method. Auditors can be selected according to needs, and the system can assist auditors to conduct sample reviews and make probability estimate. On the Internet, auditors can take samples directly.

(5) We can call the common module of the code library to assist the auditors in the audit of financial revenues and expenditures to inquire about the laws and regulations and download the laws and regulations online, so as to examine the legitimacy and compliance of the audited contents of the audited units.

(6) The public module of audit document management can be called to generate audit working papers, audit opinions, audit work reports, and audit files of the audited units, respectively, as required.

3.1.2. Data Input. In principle, the validity text files generated by the accounting information system of audited units are converted into the original database of audited units in a unified format for financial revenue and expenditure auditing through the general data interface on the Internet. The audited unit that has not accessed the Internet temporarily can also be input by floppy disk.

3.1.3. Data Processing

(1) Generate financial statements and related account balances and occurrences of the audited entity through the audit of account statements in the audit of financial revenues and expenditures, and check with the financial statements and account books generated by the accounting software of the audited entity, and provide auditors to further audit according to the requirements of financial revenues and expenditures audit.

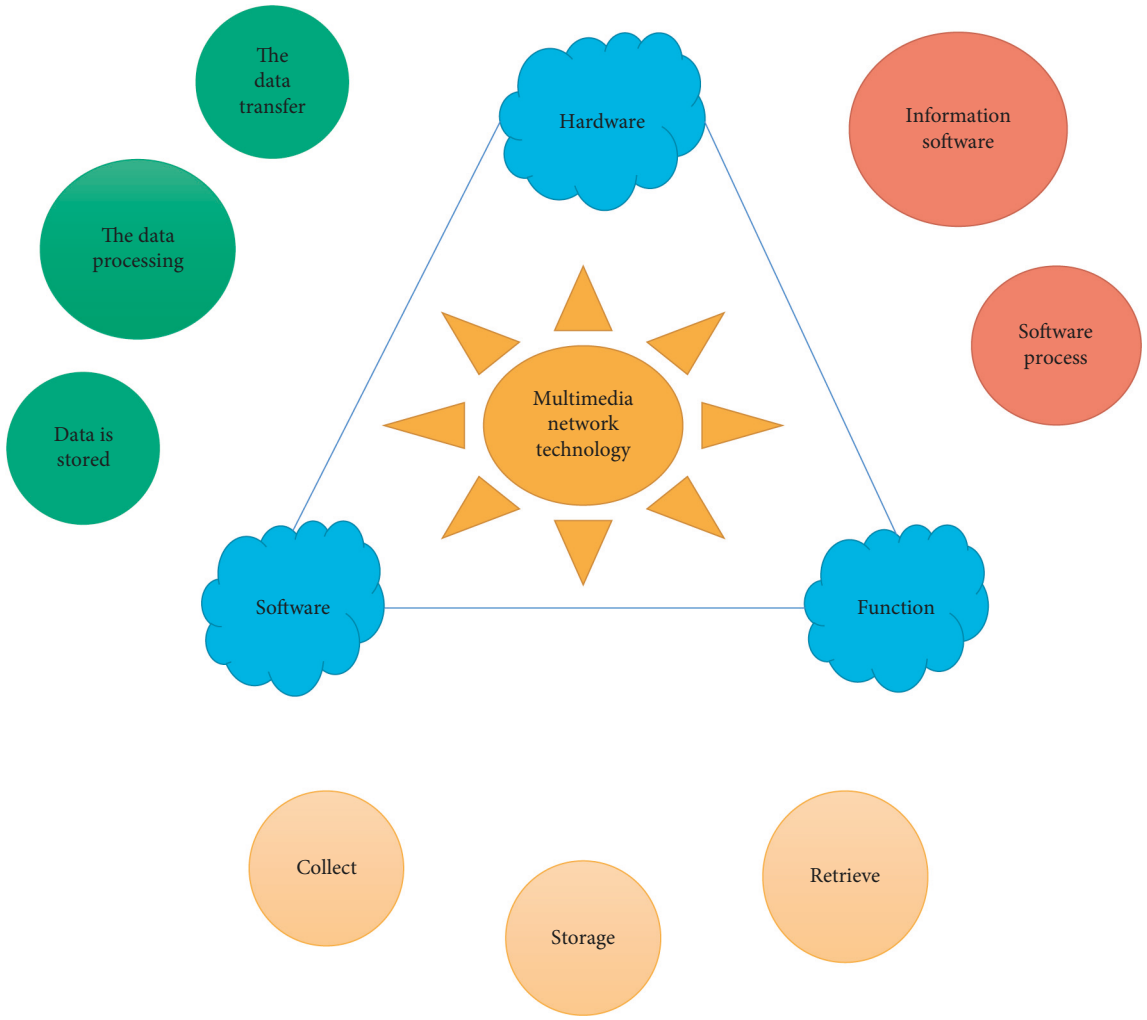

Figure 7: Multimedia is part of the network technology.

Table 3: The disadvantages of traditional teaching.

The disadvantages of traditional teaching	
1	Incomplete process
2	Ineffectual use
3	Lack of flexibility

(2) In addition to routine financial revenue and expenditure audit, this module can also assist auditors to conduct special audit on asset intensity and owner's equity income, expense, and profit.

By extracting the current database and historical database of the specified audit items, analyzing and comparing them, we can draw audit conclusions. In other words, after the audit, the accounting information of the audited unit must be kept in the audit file in order to prepare for the next step [22].

(3) In this module, by calling the common module of statistical sampling, audit sampling can be carried out on the audited contents of the audited units with a large number of needs and possibly the overall probability estimation can be made. Some samples were selected by attribute sampling variable sampling or PPS sampling cumulative coefficient method to assist auditors in sampling review, and the probability estimate should be made. There are many methods of statistical sampling. According to the characteristics of railway audit, monetary unit sampling is mainly adopted.

3.2. Substantive Testing. The monetary unit sampling method is mainly used for substantive testing, but it can also be used for dual purposes of review, which can be used for both conformance testing and substantive testing. The monetary unit sampling method does not take an account, a voucher, or a transaction as a unit of the sampling population but takes the monetary unit, namely, 1 yuan, as a unit of the sampling population [23]. When a unit of currency is selected, auditors do not examine the unit of currency but examine it by checking off the account it is in. Since every 1 dollar is equally likely to be selected, the larger the physical unit is, the more likely it is to be selected.

① Determine the sample size (this step is only for control; the actual sample size may not be this number).

$$n_1 = N_1 \bullet \frac{t}{p}, \tag{1}$$

where n_1 is sample size of monetary unit; N_1 is general book value; t is risk factor; P is tolerable error.

② Determine sampling interval J.

$$J = \frac{N_1}{n_1} = \frac{p}{t}, \tag{2}$$

③ Determine the random starting point. The computer generates a random number less than the sampling interval as the random starting point.

④ Starting from a random starting point, samples of monetary units are successively selected at sampling intervals and the corresponding physical units (i.e., corresponding accounts or accounting records) are checked out, which can be done by a computer if circumstances permit.

⑤ As can be seen from the above steps, the physical units whose amount is larger than the sampling interval are 100% selected for examination. To evaluate the whole from the results of sample examination, the samples should be divided into two parts and different mathematical models should be adopted.

(a) For the 100% inspection layer, the actual error E_1 is calculated:

$$E_1 = \sum E_1 = \sum (b_1 - a_1), \tag{3}$$

where E_1 is the ith sample error; B_1 is the ith sample book value; a_1 is the validation value of the ith sample.

For the non-100% review layer, the estimation error $E2$ is calculated:

$$t = \frac{(b_1 - a_1)}{b_1}, \qquad E_2 = \sum t_1 \bullet J. \tag{4}$$

Calculate the population point estimate.

$$N = N_1 - (E_1 + E_2) \tag{5}$$

Calculate the population error estimate and the population interval estimate. First, the sample error rate t of the non-100% review layer is divided into positive and negative groups and arranged in descending order of absolute values, respectively, so the overall error estimate can be calculated by the following equation.

Upper limit$\triangle_1$:

Table 4: Principles of independent learning.

	Principles of independent learning
1	The embodiment of innovative spirit
2	Formation of objective feedback content
3	Internalization of knowledge

$$p \bullet j + \sum G_1 \bullet t_n \bullet j - \sum G_{12} \bullet t_{12} \bullet j. \tag{6}$$

Lower limit$\triangle_2$:

$$\sum G_1 \bullet t_n \bullet j - \sum G_{12} \bullet t_{12} \bullet j - p \bullet j. \tag{7}$$

Section:

$$\in [N - \Delta_2, N + \Delta_1]. \tag{8}$$

In the above formulas, G_{l1} and G_{l2} stand for positive and negative error rates, i is 1st positive error rate, t_{l1} is negative effect error rate and t_{l2} is being arranged in the descending order of the absolute value. The corresponding accuracy expansion factor can be obtained by referring to the table. Other letters are defined as before.

These steps may seem complicated, but they can be very convenient and quick if aided by computer.

3.3. Experimental Methods to Verify the Scheme. After the analysis of teaching objectives and the determination of teaching principles, we should discuss the development of teaching procedures in detail, that is, how to implement the situation teaching of junior middle school English assisted by multimedia. More specifically, how to use multimedia to create junior high school English teaching scenarios mainly includes the following ways.

Problems occur when the situation is in one state and the problem solver (the subject of the problem solver) wants the situation to move to another state and there are obstacles [24]. Problem solving is a learning process. Problem solving is a psychological activity that students explore and deal with problems when they are faced with a new problem situation and find that it contradicts subjective and objective needs but lacks ready-made countermeasures. It is a process of interaction between problem solvers and task situations. By setting doubts and questioning and other ways to create question-type problem situation through clever questions, stimulate learners' interest in exploration, and improve students' creative thinking ability, the creation of problem situation should be more attractive, attracting students' attention to important information.

Some compulsory teaching contents and learning contents that are not easy to contact with real life can be simulated to meet the needs of teaching and learning. Multimedia situational language teaching has been rapidly developed and utilized in language learning and teaching. The combination of English teaching and multimedia technology will achieve something in the areas where traditional teaching fails. It uses multimedia with text graphics, animation, video, image, sound, and other media integration characteristics; the teaching content is in front of students,

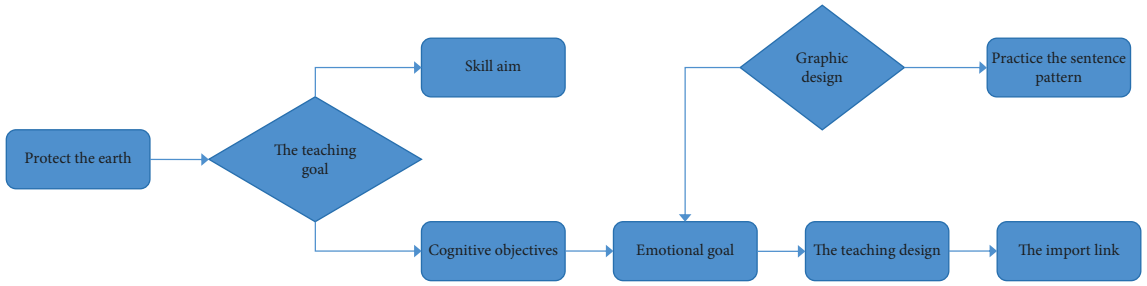

Figure 8: Course plan process.

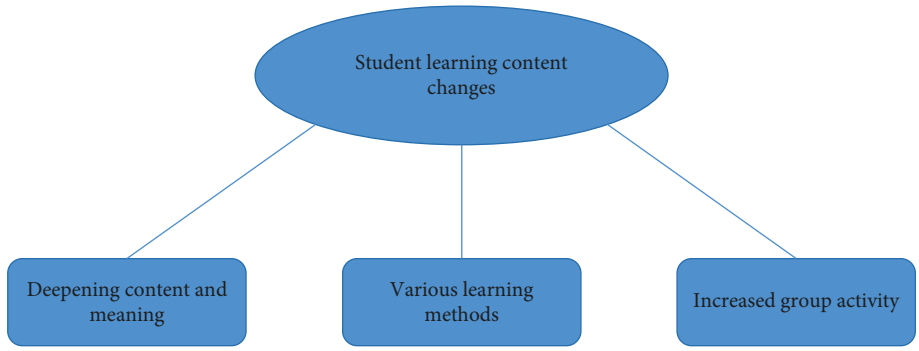

Figure 9: Characteristics of students' learning content.

so that students, through a variety of external stimulations, quickly perceive the teaching content. Using the advantage of network sharing, we can access the remote host immediately and obtain a lot of resources in classroom teaching. Creating collaborative learning activities plays an important role in fostering skill development, collaborative confidence, and building personal relationships. At present, there are many situations of teaching cooperation, such as competition, cooperation, and performance. Under the guidance of teachers, students can communicate with teachers and classmates through computer aided design, so as to achieve the purpose of learning and practice and understand knowledge. It can fully mobilize the initiative of students, exercise their ability to analyze and solve problems, and cultivate their personality and creativity. The principles of independent learning are shown in Table 4.

Today's English teaching is student-centered and focuses on students' ability to use English for communication. The biggest difficulty for Chinese students to learn English is the English language environment. Students have few opportunities to contact English and the language is not authentic. The language they learn cannot truly reflect the social culture and cannot be properly used in practical communication. Based on the physical and mental characteristics of junior middle school students, English teaching should give play to the function of multimedia and network, create various language situations, stimulate students' interest in learning, attract students to participate in English practice activities, and improve students' ability to use English for communication [25].

The teaching plan process of the course is shown in Figure 8, and the characteristics of students' learning content are shown in Figure 9.

Overlay is to provide sufficient examples for the function and open knowledge of language by creating some real and unique situations. Indeed, in fact, students can better understand the message being conveyed, hear the situation, open their minds, and stimulate the desire to express their emotions. In this class, I created different scenes in each link. In the first link, English songs were used to introduce the theme. In the second link, pictures were used to describe environmental pollution [26]. The fourth part of the group activities was to create a series of scenarios to arrange dialogue sketches or interview the creation of this series of scenarios to activate the atmosphere of the whole class, the characteristics of situational teaching have been brought into full play. In junior middle school English teaching, efforts to create an English environment are particularly important; in order to create this environment, we should use a variety of means for vivid visual teaching. The hyperlinks provided by multimedia and network technology can present a variety of resources in front of students, creating unprecedented conditions for intuitive teaching. The three categories of language functions are shown in Figure 10.

4. Result

In a word, multimedia assisted situational English teaching in junior middle school is a teaching form with many advantages. Its advantages are shown as follows: (a) It can make the students more interested in English and improve the learning effects greatly and prominently. (b) It can cultivate students' sense of English language and deepen their understanding of English context. (c) It can

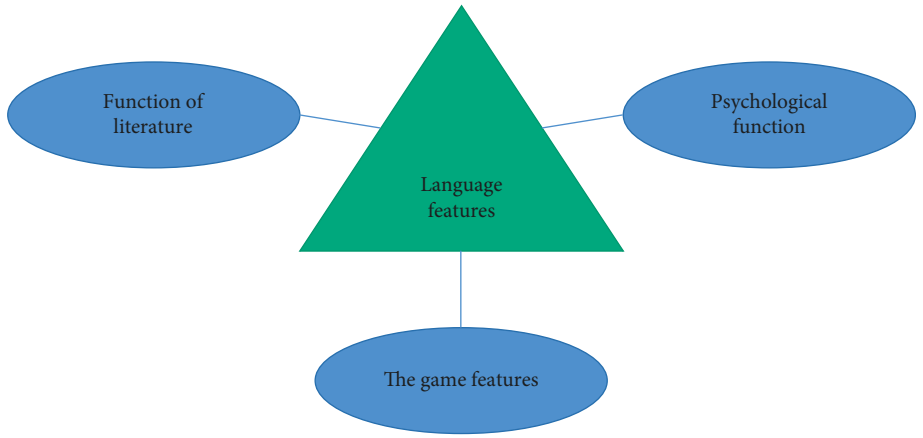

Figure 10: Three main categories of language functions.

Figure 11: Matters needing attention.

make the students' ability of carrying out independent learning be fully exercised. Under the condition that teaching conditions can be ensured, teachers should scientifically analyze teaching objectives, carefully select teaching contents, and flexibly apply teaching principles in the process of creating situational English teaching in junior middle schools by using multimedia technology, as shown in Figure 11.

5. Conclusion

The learning environment encourages students to think critically to solve problems and improve their problem-solving skills. In the use of some multimedia services, usually designed for teaching purposes only, knowledge is silent. The course focuses on the use of language to describe and explain practical cultures, which are important in providing the meaning of knowledge. The English learning center developed by using multimedia and network technology enables students to communicate through interactive dialogues in different situations and finally achieve the purpose of learning English. One of the greatest features and major benefits of learning over time is that it breaks and transcends educational thinking cultures and intellectual patterns, changing perceptions that have long been overlooked in good educational work. Focusing on the whole process of learning and teaching in the teaching of thoughts and ideas overcomes the pressure, loneliness, weakness, and uselessness of English teaching in our country.

Data Availability

The labeled dataset used to support the findings of this study is available from the corresponding author upon request.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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