Optimization of Computer-Aided English Teaching System Realized by VB Software

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Abstract. With the widespread application of computer technology, Computer Aided Instruction (Computer Aided Instruction, abbreviated as CAI) has become an important means of school teaching. This article introduces the characteristics of Visual Basic 6.0, a very practical tool for Windows application programming at present, and combines some program examples to illustrate the practicality of Visual Basic in the field of foreign language teaching. At the same time, it analyzes the production technology of courseware in VB-assisted teaching. , Specifically study the design effect of multimedia courseware from the aspects of font, sound, image, animation and so on. Due to the lack of popularity and modernization of computer-assisted teaching software in teaching, teachers still have cumbersome and time-consuming teaching. This article uses VB to make computer-assisted teaching courseware. The classroom efficiency and the efficiency of courseware production have been greatly improved. After the application in the teaching process, the students' enthusiasm for learning has been significantly improved, which provides a guarantee for the smooth implementation of the design of professional English courses. And the courseware produced is flexible, and the interface is also quite beautiful.

1 INTRODUCTION

In the past two decades, some progress has been made in Chinese college English teaching, but there are also some problems. Mainly include: classroom teaching is mainly based on the teaching of language knowledge; classroom teaching is basically a lecture-centered model; there are few

communicative activities and low quality in classroom teaching; teachers do not pay enough attention to the ability of listening, speaking and writing. In order to resolve the contradiction between the shortage of teachers and classrooms, many colleges and universities have tried multimedia large-class teaching, which has stimulated the four problems listed above to a certain extent. Tejedor et al. found that due to the heavy workload of teachers, large number of classes, tight teaching time and many other reasons, college English classrooms are basically centered on the teaching of language knowledge, and most students do not have enough opportunities to participate [1]. The ability of students to communicate in English is generally low; students are not actively learning, but passively instilling. Textbooks and teachers become the main source of students' language knowledge. Even if students are not interested in certain content, they have no right to choose. Over time it affects their learning initiative; teachers are difficult to grasp the teaching progress, good students feel "not enough to eat", and poor students feel that they can't keep up; teachers do not have the energy to monitor the learning process of students in detail, which often leads to students with good foundations Even if you don't study hard, you can get better results in a short time.

At present, although there are a lot of CAI software, there are fewer teaching software that conform to the school's teaching rules and meet the needs of classroom teaching. The popularity of teaching is low, and the utilization rate of teachers is not high. Most of the teachers still use traditional teaching software. Model teaching, the teaching work is still cumbersome and time-consuming. Dang [2] has been engaged in numerical control professional teaching for more than ten years, in order to improve the teaching effect, in the teaching process, PPT, video, simulation software and other teaching resources are used. However, different resources are stored in different locations in the computer, which will cause a waste of time when looking for them, so there is an idea to integrate all teaching resources together to form teaching aid software. At the same time, Anjum and Mansoor [3] realized through research that multimedia teaching in large classes also has its inherent problems: computer technology is only a tool, and its role only extends the expressiveness of teachers, and it cannot solve some human factors in teaching, such as The adoption of teaching methods, the positioning of the teacher-student relationship, etc.; the ideal state of foreign language teaching is small class teaching, and the large-scale multimedia teaching makes the reality of university foreign language teaching further away from the ideal; the teaching class is large, and it is not a small problem for teachers to maintain classroom order It is often very difficult to organize classroom activities because of the large teaching class. Teachers cannot take into account the individual needs of students, cannot correct enough homework, or even remember the names of students. The evaluation of students is often "One volume is set for life", lack of supervision of students' learning process. Wang [4] collected relevant information on the Internet and found that there is no similar professional course teaching software, which coincides with the general trend of informatization teaching reform. Therefore, we hope to help teachers improve the quality of teaching through the development of a teaching aid software.

The computer-assisted English teaching system built in this paper is an object-oriented visual student database management system jointly developed by the programming language VB6.0 and the Access database management system. It uses the same multi-document window as word in the main window, and uses the corresponding data environment controls to operate the link with the Access system. At the same time, an object-oriented and event-driven development platform is used to change the complex characteristics of traditional Windows programming and create a visual interface design mode. The following steps are usually taken to design windows software through VB: First, design For all objects, make screen forms through various controls preset by the system; secondly, set attributes for each object; finally, perform system programming for some actions that each control needs to perform under certain events, that is, According to the object properties and event process, you can write some program codes into the object. So it has certain functions of deleting, inserting and modifying in the system, its interface is beautiful and friendly, and the operation is quite simple. The development of VB auxiliary teaching system has greatly improved the efficiency of teaching and increased the interest of students in learning.

2 PRINCIPLES OF VB SOFTWARE AND COMPUTER-ASSISTED ENGLISH TEACHING SYSTEM

2.1 Advantages of Using VB Software in Computer-Aided Systems

Visual Basic, or VB for short, is a Windows application development software launched by Microsoft in 1991, which simplifies the design of graphics programs. The emergence of the Windows operating system has had a huge impact on traditional programming languages, because it is difficult for people to compile applications with Window s features using traditional technology. The reason is very simple, foolish operation requires the support of the wise. After several years of development, VB6.0 has been released again. Kim [5] found that VB inherits the simplicity and practicability of the Basic language, and at the same time, it has the excellent features of Window and a graphical working environment. It can be said to be the fastest and most concise way to develop window interface applications.
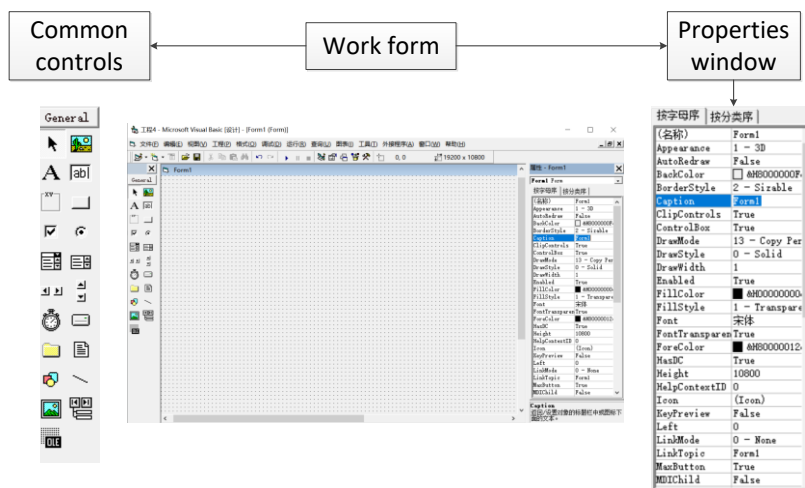

Figure 1: Basic operation interface of VB.

Figure 1 shows the basic operation interface of VB. The technical characteristics of V B mainly have the following points:

1. Visualization and object-oriented (Visual& OOP) users can easily establish a user interface when the program is running on the working window by choosing various controls (Con trols) provided by VB, instead of just implementing an interface as before. Exhausted setbacks. After the interface is designed, what needs to be done is to write the program code for the selected controls to realize the functions of these controls. It's like building a mechanical model with various building blocks, and then applying "magic" to the building blocks to make the machinery move. As for the object, it refers to the form and various controls. The selected controls generally need to be "processed", that is, their properties (pro perties) can be set to become real objects. For example, we choose "ball" as the object, and then we will further explain its characteristics, including: category, material, size, color, and so on. This work is generally done through the property box.

2. Event-driven (Ev ent Driving) refers to the operation of objects through events. An event is a certain behavior directed at an object. For example, with the "ball" as the object, we can perform "kick, pat, and shoot" behaviors on it. The event responds with a piece of program code to complete a certain task.

3. Structured design V B's sentences are very close to English expressions, which is conducive to foreign language teachers to master; and it is in line with our logical thinking. It has powerful

numerical and string processing functions, rich drawing instructions, perfect file operation methods and friendly programming instructions. The above are just a few basic characteristics of V B. In short, V B is easy to learn and use, and it has become an industry standard for developing Windows applications. Generally speaking, after several weeks of practice, people who have never been involved in programming are confident to use VB. We don't need to understand all of its contents before using it to write programs.

2.2 Advantages of Using Computer-Aided Systems in English Teaching

Computer Aided Instruction (Computer Aided Instruction, referred to as CAI) is a variety of teaching activities carried out under the assistance of computers, discussing the teaching content, arranging the teaching process, and the methods and techniques of teaching training with students in a dialogue manner. It is a new educational technology and is considered to be the fourth revolution in the history of human education after the appearance of writing, the establishment of schools, and the printing of movable type. As early as more than 50 years ago, the United States began to research and apply computer-assisted teaching. Kara [6] showed that until the early 1990s, the emergence of multimedia computers enabled rapid development of CA. It has the ability to comprehensively process text, images, sound, and graphics, which shows that computers are used in education and teaching. His extraordinary talents soon became an important direction for the development of CAI. Our country's research in this area started at the end of the 1970s in the 20th century. With the continuous emergence and use of new technologies, CAI has also entered a new stage of development [7]. The main new technologies are: multimedia and hypermedia technology, network technology, artificial intelligence technology, object-oriented programming technology, etc. [8]. It represents a new teaching thought and teaching method, reflecting the modernization of a school's teaching methods, and refers to the use of computers as information dissemination and processing media to assist teachers in completing teaching and training tasks [9].

Computer-assisted English teaching can be used so widely in teaching because it has its own unique advantages compared with traditional English teaching:

1. Information is set big. Teachers who have used multimedia for English teaching will have a deep experience. The content of a class is several times more than the content of the blackboard before. The time used to explain one word can now be explained two to three times. word. In addition, the students' textbooks also have self-study CDs, and students can compare the CDs in the class to conduct in-depth pre-class previews, so that teachers have more time to explain more extracurricular knowledge [10].

2. Both pictures and texts attract students' attention and deepen students' memory. Computers can turn empty English explanations into teaching with pictures and texts. This is enough to attract the attention of students. Even students who didn't like English very much come to class every time because of multimedia reasons. In addition, the current computer English teaching software is becoming more and more humane. One or two small Flash or small humorous stories will be added in the lecture, and many examples can even be created by simulating real life, so that students can deepen the impression of what they have learned [11].

3. Simplify the teacher's lesson preparation. Now almost every textbook is equipped with CD-ROM learning so that teachers can directly use CD-ROM for teaching. Even if some textbooks do not have CD-ROM learning software, several teachers of the same class can work together to research and develop a teaching law that integrates everyone's wisdom, which is convenient for everyone to use, and can adopt the teaching methods of each teacher, so that students will not be alone. Learn to learn the knowledge of a teacher.

3   VB SOFTWARE REALIZATION OF COMPUTER-ASSISTED ENGLISH TEACHING SYSTEM

3.1   English Extensive Reading Program

This is a multi-form (multi-form) program, including a main form and multiple sub-forms (currently only two are designed). Teachers often need to check and record students' attendance in class as an indicator of students' course evaluation. Therefore, an attendance module is made in the teaching software. Teachers need to broadcast teaching PPT or teaching video screens during the course of teaching, so PPT, video playback modules, and document browsing and courseware navigation modules are designed. After the course content is over or when reviewing, it requires class exercises and after-class assignments. The questioning module, test question library module and homework layout module are designed and produced, as shown in Figure 2. Students can refer to the content of the help module, the instruction of English reading and the important and difficult knowledge points of this course when they study on their own. The interface of the teaching software includes a menu bar, a tool bar, a document browsing window, a courseware navigation window, a document playing window and a status bar. The menu bar can realize file operation, teaching module selection, test question bank selection, classroom attendance, achievement summary, CNC programming and machine tool operation instructions. The toolbar is the shortcut selection area corresponding to the functions of the menu bar. In the teaching process, the teacher selects PPT, sample questions, simulation processing and assignment of classroom homework in the courseware navigation window according to the needs. At the same time, the selected playback content is displayed in the document playback window, and appears as a thumbnail in the document browsing window on the left, so that teachers can quickly switch the playback content.
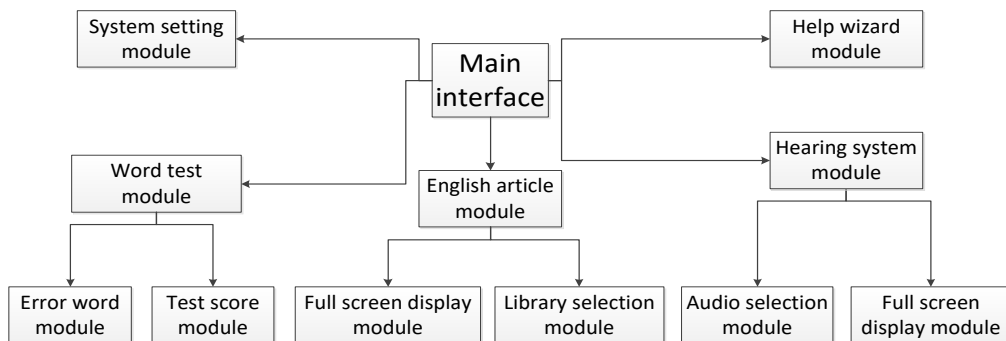
Figure 2: Computer-assisted English teaching system architecture based on VB programming.

At the same time, in the student interface, it is divided into six modules, namely: 1. Learning guidance: The learning tasks and requirements of a specific learning stage released by the teacher dynamically. 2. Autonomous learning: includes 4 parts: listening, vocabulary, grammar, and reading. Each part is basically divided into overall learning suggestions for that part (such as how to improve listening skills), and specific learning tasks (explanation and exercises) for each unit. Students can repeat the exercises in this part, and there is no time limit. After students choose the answer and submit it, a three-level prompt will appear. Click the corresponding button to display the correct answer, word or original listening comprehension. 3.Test: It includes listening, vocabulary, grammar, and reading. It is similar in form to the test part. The difference is that there is no prompt; you can modify the answer, but you cannot modify it once you submit it; there is a time limit, you can enter in advance The next question, but the program will automatically enter the next question or end the exam as soon as the prescribed time is reached; all students take the same set of test papers, but the order of the test questions for each student is randomly

generated to avoid plagiarism by students with poor self-discipline. 4. Entertainment: including English songs, English movies, English news, English feature films, etc. The exercises and exams are set at 1.5 times and 1.2 times the normal amount respectively. The computer will give prompts to students who complete the prescribed amount. He can continue to practice or test, or enter the entertainment section as a reward for his completion of the task. 5. Question feedback channels: including e-mail, chat room, electronic bulletin board (BBS). A considerable part of the content needs to be taught by students on the local area network. Students will inevitably encounter various problems in the learning process. In addition to asking the teacher directly in class, they can also inquire by emailing the teacher. According to the questions asked by the students, the teacher will provide the students with concentrated or individual answers in class. Our next plan is to increase voice chat, voice mail, and regularly organize debates or brainstorming activities in chat rooms, extend part of the functions of the local area network to the campus network, and further expand the channels for student communication. 6. Inquiry: Students can inquire about the time of self-study, the results of the examination, and the evaluation made by the computer (based on the comparison with peers and history) and teachers.

The arrow in the figure represents the relationship between these windows. The user operates the mouse and clicks the corresponding button to switch the window. Among them, the main window on the left is named "FormMain". It mainly includes six command button controls, namely: Article1 to Article6. Press them to achieve different functions, as shown in Figure 3. For example: Pressing Article1 will bring up the reading window 1, named "Form Article1" at the upper right of the above figure; pressing Amend will bring up the adding text window at the bottom right, named "FormAmend"; pressing Quit will end the program. Due to space limitations, this article does not elaborate on the process of establishing and modifying the properties of each window, but will focus on the realization of the main button functions, that is, introduce some simple program codes. The Article1 button of the main window is an object, and the "event" applied to it is the mouse "click" (Click). The function to be realized is: After clicking this button, the main window disappears and the reading window appears.

In this way, the predetermined function can be realized, which is very simple. The function realization method of the Amend button is the same as above. After the window turns to reading window 1 (F rmArticle1), the author designed the following controls: 1 text box; 2 button controls, namely "timing" and "finish" (Finish); radio buttons 1; 2 label controls. There is another universal dialog box control (CommonDialog 1), which is implicit and does not appear on the interface when the program is running. The functions that need them are: Press Timing, a general open dialog box appears, after the user selects the reading material file (with tx t as the extension), the text box displays the text file, and in the label control below the Timing button Display the start time; press Finish to display the end time in another tab control below it; press the radio button Back to return to the main window. Because the function of the Timing button is the most comprehensive, only its program code is introduced here.

The following describes the window Form Amend. As shown in Figure 4, this window has a text box for teachers to enter new text; two button controls, namely "Save New Article" and "Open Document"; and a common dialog box control to save and open documents. The method of opening the document has been introduced above, here only the code of the "save new article" function is introduced. The form of the common dialog box is the same as the dialog box in the Windows state. The above is the main content of the application, and there are many parts that can be improved, such as: calculating the reading speed and the word count of the article, counting another practice window, etc. In addition, the self-study part includes 4 parts: listening, vocabulary, grammar, and reading. Each part basically includes explanations, examples, and exercises. In order to supervise students' self-study, after entering the learning part, they will start to record their time spent, the accuracy of the practice, etc., and prompts whether the learning task has been completed (for example, after completing the task, you can start entertaining). The test part is to generate a four-part test paper including listening, vocabulary, grammar, and reading, which cannot be changed after submission. In the case of a certain amount

of questions, questions are randomly generated, and sometimes prompts are asked to record and analyze test results for teachers to inquire in the background.

Adopt a dynamic process evaluation model, establish student files, focus on the learning process and student progress, and guide students to clarify their learning goals. The entire learning process of the students is recorded and then entered into the database along with their performance in the oral English class. Regular feedback is given to them, praised and reminded in time. Specifically, the students' overall evaluation scores each semester consist of four parts: self-study, self-test, oral English classroom performance and final exam, each accounting for 25%. The score of the self-study part mainly depends on the time and amount of the student's practice in the learning part, and refer to the effect; the score of the examination part is mainly a check of the self-study time period and extracurricular learning effect, and the quality depends on its foundation and hard work. Degree; oral performance mainly depends on the degree and effect of its participation in the oral English class.
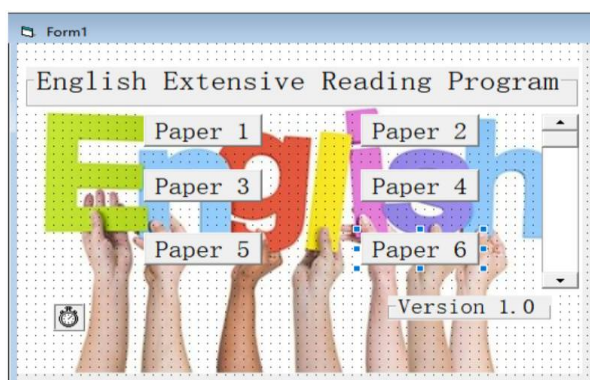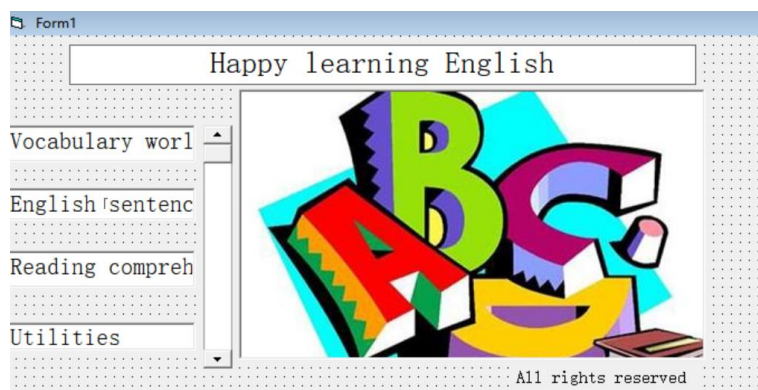

Figure 3: The main window running effect diagram.

Figure 4: Form Amend form running effect diagram.

3.2   Listening Practice Procedures

This program uses the Multimedia Control (M CI) provided by VB. This control can play current common media, such as: animation, CD, digital video, M IDI, M PEG, wave audio and so on. Comprehensive functions and easy to use. There is much to be done in the preparation of CALL courseware. Shown below is the final interface of the program. In the interface shown, there are 3

command button controls; 1 text box control; one MCI media control; one general dialog box control that is not displayed at runtime; and one picture box control (for displaying background pictures). Their functions are as follows: Press the "Play Audio Material" button, and the "Open File" general dialog box will pop up for the user to select the w av file that needs to be played. The text box disappears at the same time and the playback starts. Press the "Synchronous Reading" button, a text box will appear and the corresponding text will be displayed for reading. The M CI control is the focus of this example. The detailed introduction is shown in Figure 5.
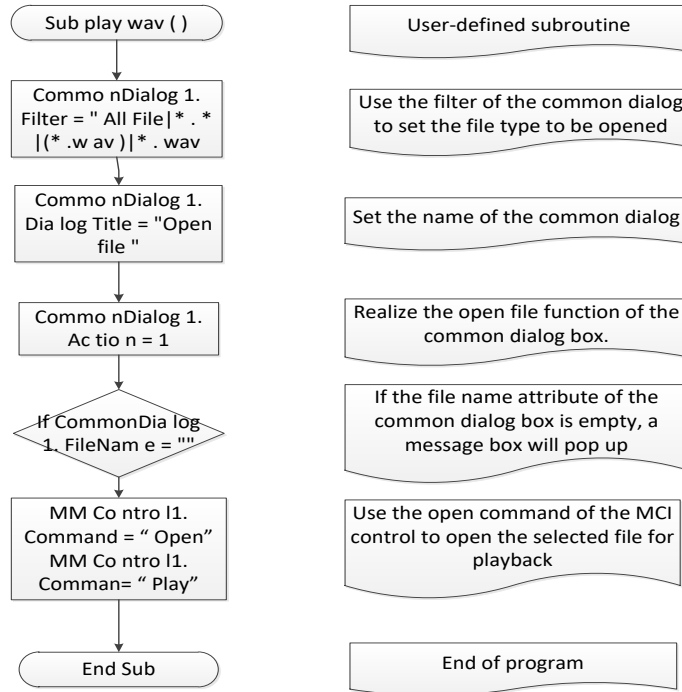

Figure 5: Flow chart of MCI control design in listening practice program.
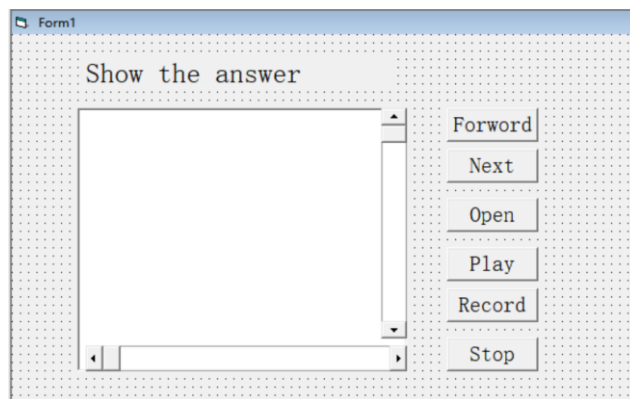

Figure 6: The running effect diagram of the interactive module.

MCI is not a commonly used control, it can be selected by the user from the "Controls" tab of the "Parts" dialog box in the "Project" menu of V B when needed. After the user specifies the media device type, file name, and corresponding commands, media playback can be realized, as shown in Figure 6. During playback, the available buttons of the M CI control are black, and the invalid buttons are off-white.

    1.Sound processing. Multimedia CAI software usually has to deal with two kinds of audio, wave and M IDI, and its function is mainly to explain the content of the software itself, interface conversion, and as background sound and effect sound. Create a new target file (named "PROJECT1"), and create a form (set to "FORM1"). At this time, design the label control LABELL1 and the timer control TIMER1 to control timing in FORM1. At the same time, configure the attributes of each control in FORM1: ①ENABLED of TIMED is configured as TRUE; ②CAPION of LABEL is configured as flashing font; ③FONT is configured with corresponding font and appropriate size; ④BACKSTYLE is configured as "0-TRANSPARENT"; Finally, enter the corresponding code. Some tricks can be taken here to make the function of M IC (Media Control Interface) communicate well with V B. When processing sound files, the specific programming steps are as follows: Step 1: Add M IC. V BX control on the corresponding window. Step 2: Set the visible of the control as required. If Visible = True, the M IC control is visible when the program is running; if its properties Enable = True and AutoEna ble = True, the user can directly use the mouse to control a button; Visible = False, the control is invisible Yes, the various actions of M CI can only be controlled through programming. The third step: Determine the properties of the program such as Devicetype, Filename, Notify, w ait, shareable and so on. Step 4: Set the Filename attribute, that is, specify the name of the file to be operated. Set the command attribute, that is, open, play, prev, stop, close and other operations, as shown in Figure 7.
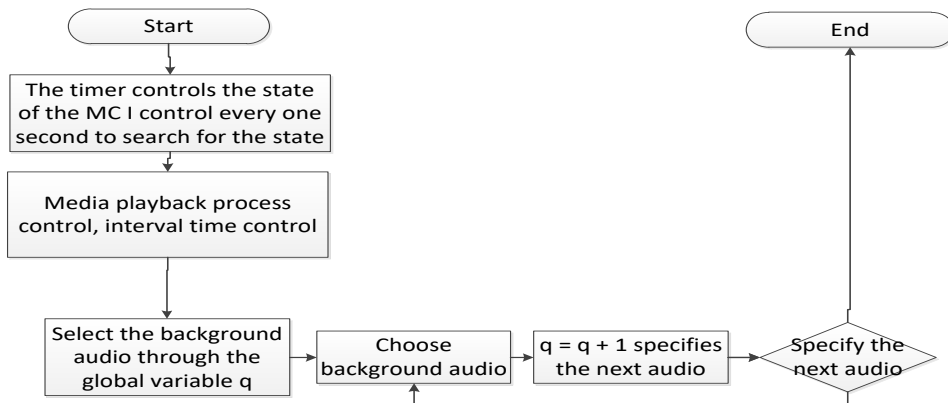

Figure 7: Audio processing code flow chart.

    2. Video processing. In the process of making multimedia CAI software, the use and control of video must be handled well. The M CI control can be used to play AV I video. When playing AV I video, you need to specify the corresponding media playback window. If you do not specify a play window in the program, the system will play in the default display window. In addition, the position of the window provided by the multimedia device may be different each time. In order to deal with this out-of-control phenomenon, the display window needs to be placed in a fixed place at this time. : Nowadays, there are many kinds of software (such as word, excel, etc.) with floating buttons on the toolbar. In general, the icons of these floating buttons are grayed out, and when the mouse touches it, the favorite color is displayed and upward Protruding, and at the same time a prompt appears at the bottom right to show the function of the button, and it returns to its original state after the mouse leaves. The design method of the floating button is as follows: First, use the drawing tool to make the button icon and save it (such as 1.bmp). Then use some image

processing software to convert these icons, convert them into gray or embossed images, and convert them Save it (for example: 2.bmp). Secondly, create a new form (FORM1), create a picture box (such as IMAGE1) where the button needs to be set, set its size to be the same as this icon, and set it to 2.bmp in the Picture property. Third, set a box composed of four equal-length LINE controls (such as: LINE1, LINE2, LINE3, LINE4) near IMAGE1. The box must be larger than the IMAGE1 control, otherwise the expected effect will not be achieved, and Set the color on the top and the left of it to white, and the color on the bottom and the right of it to black, and set the VISIBLE property of these four controls to FALSE. In order to do this, you can use the usewindows property to monitor the window, and use the hw nDisplay property to get the window's Ha ndle.

3.Use of APP objects. In VB programming, we often encounter such a problem: The program always executes the file according to the fixed path during programming. If the file path is changed, the program cannot find the required file and cannot work normally. Therefore, the APP object can be used to solve this problem. The APP object has two important attributes: First, pp. path: It returns the directory where the M AK file is located in the state of VB programming; when it runs as an EX E file, it returns the directory where the EX E file is located. Second, Appp. ex e Name: The name of the program it returns. When the program is the root directory, a pp. pa th returns "\", when the program is not in the root directory, it returns to the directory where the program is located. In the VB assisted teaching system, you can design background music through ole nesting and api functions to add and control background music. This article mainly introduces the method of ole nesting. The specific solutions are as follows: First, enter VB5.0 or VB6.0 In the system environment, create a new form, click the button "ole container" above the "form control", and move it to any position in the form. At this time, look for "Media Clip" in the "Insert Object" window and search for "Chart Display Bar". Only by selecting it can it be hidden, and then click "Confirm" to exit. Secondly, open "Media Player", select "File", "Open", and search for the music file you want to use as the background from the list. If you want to set it to repeat playback, you can select "Edit" in the media player Select "Options", after a window pops up, click "Repeat Play" in the window, remove the check mark in front of the "Replay Control Bar", and finally confirm and then exit. Finally, return to the VB6.0 or VB5.0 system environment, right-click, select the properties in the pop-up menu, and then click "ole1" in the properties window, and set its VISIBLE property to (.f.), that is, " false"; Set the attribute of AUTOSIZE to (.f.). Right-click again, select the "Code" option after the pop-up menu, enter the programming window, and enter the "LOADING" process of the "FORM1" object.
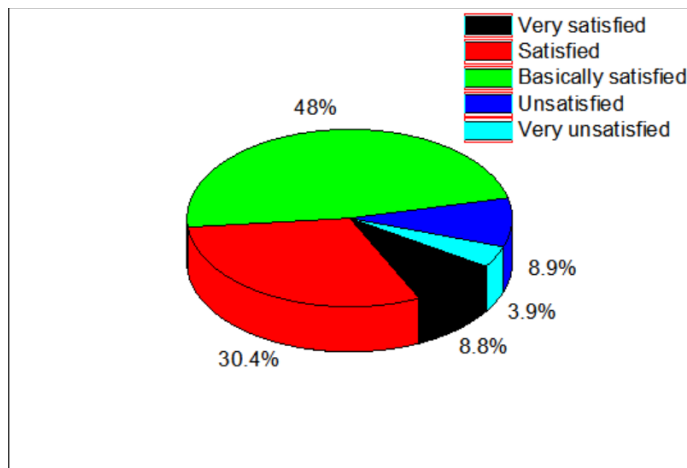

Figure 8: The satisfaction survey of the computer-assisted English teaching system implemented by VB software.

An obvious conclusion can be drawn from Figure 8, that is, after multimedia exercises on computers, students have made progress on all task completion indicators. In the quality inspection of English teaching, especially the complexity, the latter is 1.65 times that of the former, showing that the exercises of media software provide students with rich conversation topics. In the test of student performance, the computer-assisted English teaching system based on VB software also shows a positive improvement, providing students with a self-sufficient learning environment, where the words they need can be found and used immediately In our own dialogue, we will undoubtedly expand the scope of students' knowledge. This open, instant, and self-sufficient learning environment is an important manifestation of the value of the system. It can be seen from the satisfaction survey that the vast majority of students accept and like this teaching mode. Because autonomous learning stimulated their initiative and creativity, changed the traditional learning method, established the student's dominant position in the teaching process, and can achieve personalized learning to the maximum.

4   CONCLUSION

VB is an object-oriented visualization development tool based on Windows. It adopts the latest technology of software design today and has been widely used with its powerful functions. Using VB to develop CAI teaching courseware has the characteristics of flexible design, friendly and beautiful interface of the generated software. It can perfectly combine various media such as sound, image, text, animation, and video. VB's excellent interface design features and practical multimedia programming technology can ensure the integration of the program layout, text, color, sound, and screen; users can also achieve impressive results through the use of its diversified windows, buttons and other controls and menu design. Satisfactory interactivity, so that the courseware has strong expressiveness and appeal, arouses users' interest and enthusiasm in learning. At the same time, CAI teaching courseware can not only stimulate the enthusiasm of students, but also free teachers from the heavy blackboard writing, which is conducive to improving the quality of teaching. Therefore, VB is very suitable for foreign language teachers to use when they develop CALL courseware. It is a good tool. Foreign language teachers use this tool and combine their own professional knowledge to make it possible to develop CALL courseware with more teaching effects. As a member of Microso ft's Visual Studio series of products, Visaul Basic is still undergoing continuous improvement and development. Future versions will be easier to learn and use, and become a good helper for foreign language teachers in programming.

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REFERENCES

[1]   Tejedor G.-C.; Escudero M.-D.; Cámara A.-E.: Assessing pronunciation improvement in students of English using a controlled computer-assisted pronunciation tool, IEEE Transactions on Learning Technologies, 13(2), 2020, 269-282. https://doi.org/10.1109/TLT.2020.2980261
[2]   Dang R.: Study on the Application of CALL in College Oral English Language Teaching, Journal of Physics: Conference Series. IOP Publishing, 1693(1), 2020, 012059. https://doi.org/10.1088/1742-6596/1693/1/012059
[3]   Anjum M.; Mansoor Z.: Teaching English to Mainstream School Dyslexic Students through Computer-Assisted Reading Materials, Linguistics and Literature Review, 6(1), 2020, 09-22. https://doi.org/10.32350/llr.v6i1.582
[4]   Wang J.: Speech Recognition of Oral English Teaching Based on Deep Belief Network, International Journal of Emerging Technologies in Learning, 15(10), 2020, 100. https://doi.org/10.3991/ijet.v15i10.14041

[5]   Kim H.-Y.: Multimodal input during technology-assisted teacher instruction and English learner's learning experience, Innovation in Language Learning and Teaching, 3, 2020, 1-13. https://doi.org/10.1080/17501229.2020.1800708

[6]   Kara S.: Prospective Visual Arts Teachers' Innovation Skills and Attitudes towards Computer Assisted Instruction, International Journal of Technology in Education and Science, 4(2), 2020, 98-107. https://doi.org/10.46328/ijtes.v4i2.60

[7]   Yeşilbağ S.; Korkmaz Ö.; Çakir R.: The effect of educational computer games on students' academic achievements and attitudes towards English lesson, Education and Information Technologies, 25(2), 2020, 1-18. https://doi.org/10.1007/s10639-020-10216-1

[8]   Gilakjani A.-P.; Rahimy R.: Using computer-assisted pronunciation teaching (CAPT) in English pronunciation instruction: A study on the impact and the Teacher's role, Education and Information Technologies, 25(2), 2020. https://doi.org/10.1007/s10639-019-10009-1

[9]   Gao F.: Computer-Assisted Teaching and Cultivate Students' Innovative Thinking Ability, International Conference on Machine Learning and Big Data Analytics for IoT Security and Privacy, Springer, Cham, 2, 2020, 237-242. https://doi.org/10.1007/978-3-030-62746-1_35

[10]   Willyarto M.-N.; Werhoru D.; Januarta S.: Visual aid presentation as a learning method: a case study in learning English of management students in Binus University, Journal of Physics: Conference Series, IOP Publishing, 1566(1), 2020, 012023. https://doi.org/10.1088/1742-6596/1566/1/012023/meta

[11]   Pindiprolu S.-S.; Marks L.-J.: Preventing Summer Reading Slide: Examining the Effects of Two Computer-Assisted Reading Programs, Rural Special Education Quarterly, 39(3), 2020, 116-127. https://doi.org/10.1177/8756870520914281