Research Article

Mobile English Teaching Information Service Platform Based on Edge Computing

Tingyu Jiao

Department of Basic Education, Luxun Academy of Fine Arts, Shenyang 110816, Liaoning, China

Correspondence should be addressed to Tingyu Jiao; jiaotingyu@lumei.edu.cn

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Mobile edge computing was born in 2013 and is still in the process of technology R&D and industrialization. Although it is still in the early stages of development, as one of the core technologies of 5G, it has broad development prospects; this article aims to study the design and implementation of a mobile English teaching information service platform under edge computing, so as to improve the efficiency and level of English teaching. The implication of mobile English teaching is that English teachers and students use mobile devices for English teaching and communication at the same time. This article mainly focuses on the research of mobile English teaching information service platform based on edge computing. It discusses edge computing model and edge network architecture and is based on cognitive flexibility theory, informal learning theory, and situational cognition and learning theory. A mobile English teaching model based on “listening, reading, and listening” is constructed, and a mobile English teaching information service platform is designed and implemented. After investigation and research, it is concluded that this platform can improve the efficiency of teacher scheduling by 5%–6% and the student’s 2-3% course selection efficiency.

1. Introduction

1.1. Background. With the rapid development of the Internet, people’s demand for information service systems is increasing. Information service platforms can bring convenience to people and improve people’s quality of life. Mobile edge computing enables mobile users to perform services provided by IT or cloud computing within the range of wireless networks. The main goal is to reduce the transmission delay caused by data transmission through the core network. Mobile edge computing can be defined as a business-oriented cloud computing platform that provides mobile users with wireless access to nearby networks to receive services for delay-sensitive and context-aware applications.

1.2. Significance. Mobile English learning based on edge computing is an extension of online education. In addition to the characteristics of online education, it also has the characteristics of not being limited by space and time. It can be used for different purposes and in different ways of learning

anytime and anywhere. In a mobile state, both teachers and students can teach English anytime and anywhere.

1.3. Related Work. The proliferation of the Internet of Things and the success of rich cloud services have promoted the development of a new computing paradigm, edge computing, which requires data processing at the edge of the network. Edge computing has the potential to solve response time requirements, battery life limitation, save bandwidth costs, and data security and privacy. Shi et al. introduced the definition of edge computing and then conducted some case studies, from cloud offloading to smart homes and cities, and collaborative edge to realize the concept of edge computing. Finally, they put forward some challenges and opportunities in the field of edge computing, and they hope that their research can attract the attention of the community and stimulate more research in this direction [1]. However, they only conducted in-depth analysis and discussion on smart homes and smart cities and studied data security and privacy based on edge computing. They did not conduct related in-

depth research on the education field based on edge computing. Modern solutions for cloud-supported edge data analysis usually apply analysis techniques in a strict bottom-up approach, regardless of the source of the data. Typically, data are generated at the edge of the infrastructure and transmitted to the cloud using traditional data analysis techniques. Currently, when designing, developing, and operating data analysis applications, developers are forced to resort to temporary solutions tailored specifically to the available infrastructure (such as edge devices). Here, a novel approach enables cloud-supported real-time data analysis in edge computing applications. Nastic S and others introduced their serverless edge data analysis platform and application model and discussed their main design requirements and challenges based on actual healthcare use case scenarios [2]. But they only discussed the design requirements and challenges and did not make corresponding actual actions. In order to comply with the trend of mobile informatization and meet the government's mobile office needs, Wu et al. proposed a smart city construction information service platform including mobile applications and back-end maintenance, which can monitor important city construction projects in real time. At present, their design and development platform has been put into operation in Ningbo, which helps the government to effectively supervise the project. They described the overall framework of the system and its functional components in detail [3]. However, the information service platform they designed is only helpful for urban construction, and they have not developed an information service platform related to students' English learning and teachers' English teaching.

1.4. Innovation. Using edge computing to design an English teaching service information platform can increase an order of magnitude of users, and the server can be connected to more devices. Especially in some schools, we need to use complex equipment, such as English teaching resources and other servers that require a lot of data. If we use edge computing, we can save space and resources for the server. Through combining the theory and literature, it can be seen that the research on mobile learning and teaching design in the mobile learning environment is gradually increasing, which reflects the current enthusiasm of the majority of educators to put it into teaching practice. It is also feasible. Through research in English teaching practice, it is found that, with the popularization of smart mobile terminals and the development of mobile Internet, it is very easy to construct a mobile learning environment. This can be seen from our previous interviews and questionnaire surveys. What teachers should do is how to make full use of the mobile learning environment for teaching design, so that it can realize personalized teaching as much as possible. Based on this, this article combines the software and hardware characteristics of the latest edge computing technology to construct a suitable mobile learning environment design for teaching. The teaching practice and later interviews and survey questionnaires concluded that English teaching in a marginal technology environment is acceptable to teachers,

students, and parents. It integrates traditional teaching and mobile teaching to make teachers' teaching more effective and focus on making students more interested in English learning.

2. Methods and Related Concepts

2.1. Universal Model of Edge Computing. Mobile edge computing (MEC) effectively integrates wireless network and Internet technologies and adds computing, storage, and processing functions on the wireless network side. The idea of edge computing is to unload all or part of the cloud computing at the application layer to the edge facilities close to the device and only send some necessary status messages and other data to the cloud. Most of the computing data is between the device and the edge processing center. Time is consumed [4]. The basic model of edge computing is shown in Figure 1.

2.2. Edge Computing Resource Allocation. Research on resource allocation has always been an indispensable issue in the field of wireless communications. Regarding issues related to resource allocation such as power control, interference suppression, spectrum optimization, energy efficiency optimization, and throughput maximization in heterogeneous networks, the research methods and theories will involve convex optimization theory, dual decomposition dichotomy theory, and game theory, etc. [5]. Many literature studies on resource allocation will construct objective optimization functions, such as maximizing energy efficiency or minimizing execution delay, then set constraint conditions, such as transmission power limitation and maximum transmission delay limitation, and finally through some classic algorithms and theory solve this resource allocation problem. In the process of researching resource allocation, there will always be many relationships between competition and cooperation. Therefore, the resource allocation problem in cellular networks is combined with game theory to find competition and cooperation relationships among users in the network and establish appropriate punishment mechanisms and constraint conditions; the resource allocation problem is modeled as a game problem so that game theory or auction theory is used to model and analyze power control, energy efficiency optimization, and spectrum efficiency optimization in heterogeneous networks, and then combined with convex optimization theory, various swarm intelligence algorithms are used to solve the problem [6]. For a variety of resource allocation in the mobile edge network environment, if you decide to uninstall all or part of the application to the MEC server, you must properly allocate computing resources [7]. Intensive mobile data traffic poses a great test for energy-constrained mobile devices. Through effective resource allocation, it can effectively reduce the execution delay of uninstalling applications, improve system throughput and computing resource utilization, and reduce energy consumption [8,9].

FIGURE 1: The basic model of edge computing.

2.3. Stackelberg Game Theory. The Stackelberg game model is one of the duopoly models in economics. The two participants in this game are leader and follower. In the model, both parties choose their own strategies based on the other's possible strategies to ensure that they maximize their interests under the other's strategies, so as to achieve the Nash equilibrium. Stackelberg game is a game model in economics. It is a game that studies the economic behavior competition between a leader and several followers. In this model, there are levels among participants. The high level is the leader, who makes the decision first, and the low level is the follower, who makes the decision after the leader makes the decision. Therefore, the leader is in a strong position relative to the follower, but the leader also needs to consider the best response of the follower when setting the game strategy. The follower gives his own best after making the best decision of the leader. Stackelberg game theory is to treat edge cloud and mobile users as game leaders and followers, respectively. Edge cloud maximizes the utility of limited computing power by pricing its own computing power, while mobile users make a pricing strategy for edge cloud. The corresponding decision of data unloading is used to design the information service platform, which can achieve the greatest optimization effect on English teaching services. In the Stackelberg game, according to the specific circumstances, there are many relationships between the leader and the follower [10]. It can be a one-to-one relationship, that is, a leader and a follower, which is called one master and one follower; it can also be a one-to-many relationship, that is, a leader and multiple followers, which is called one master and multiple followers; it can also be a many-to-many relationship, that is, multiple leaders and multiple followers, called multiple masters and multiple followers. Assuming that there are two decision-making levels in the game process, including the upper-level leadership and the lower-level n followers, $F \{1, 2, \dots, n\}$ is used to denote the follower set. Let s_1 and s_2 represent the leader and follower; strategy sets $u_1(s_1, s_2)$ and $u_2(s_1, s_2)$, respectively, represent the utility functions of the leader and follower, where $s_1 \in S_1$ and $s_2 \in S_2$. The leader makes the decision first, and then the

follower makes decision s_2 according to the leader's strategy s_1 , so the condition for selecting s_2 is as shown as follows:

$$u_2(s_1, s_2) \geq u_2(s_1, t), \quad t \in S_2. \quad (1)$$

It is said that s_2 is the follower's best response to the leader's strategy.

For any given strategy s_2 belonging to the best response set of the follower, the following formula always holds:

$$u_1(s_1^*, s_2) \geq u_1(s_1, s_2). \quad (2)$$

At this time, the response time for the best follower of s_1^* is s_2^* ; then (s_1^*, s_2^*) is an equilibrium solution of the Stackelberg game; that is, the Stackelberg equilibrium is reached. At this time, game theory satisfies

$$u_1(s_1^*, s_2^*) \geq u_1(s_1, s_2^*), \quad s_1 \in S_1. \quad (3)$$

$$u_2(s_1^*, s_2^*) \geq u_2(s_1^*, s_2), \quad s_2 \in S_2. \quad (4)$$

When the follower has the only best response to any strategy of the leader, the leader's benefit when reaching the Stackelberg game is not less than the benefit of the Nash equilibrium point. Followers will make their own decisions based on the leader's strategy and the strategies of other followers to maximize their own benefits [11].

2.4. Edge Network. Define ω_i^l as the local CPU calculation rate, which is measured by the number of CPU cycles per second, in cycles/s. When the task is executed locally, the local execution time t_i^l can be written as

$$t_i^l = \frac{C_i}{\omega_i^l}. \quad (5)$$

When SMD decides to offload the task to the MEC server to start execution, use ω_i^e to represent the calculation rate of the edge server, and the calculation time on the edge server can be recorded as

$$t_i^e = \frac{Ci}{\omega_i^c}. \quad (6)$$

When SMD is transmitted to BS through channel k , according to the Shannon formula, the passed uplink transmission rate can be expressed as

$$r_{i,k} = B \log 2 \left(1 + \frac{p_{i,k} g_{i,k}}{\sigma k^2 + I_{i,k}} \right), \quad (7)$$

where B is the subchannel bandwidth, $p_{i,k}$ is the transmit power of device i on subchannel k , σk^2 is the Gaussian white noise on subchannel K , $I_{i,k}$ is the interference of other devices on device i on subchannel k , and $g_{i,k}$ is the device i channel gain on channel k .

Therefore, the uplink transmission rate of the entire device can be written as

$$R_i = \sum_{k=1}^K a_{i,k} B \log 2 \left(1 + \frac{p_{i,k} g_{i,k}}{\sigma k^2 + I_{i,k}} \right). \quad (8)$$

Record $a_{i,k}$ as the calculation uninstalation decision. If the device chooses to execute locally, then $a_{i,k} = 0$. If the device chooses to uninstal the task to the MEC server, then $a_{i,k} = 1$. Record t_i^r as the data transmission time required for SMD i to offload the task to the MEC server; then t_i^r can be expressed as

$$t_i^r = \frac{Di}{R_i}. \quad (9)$$

Define t_i^o as the total time when the task is unloaded to the MEC server, including the transmission time and the calculation time on the MEC server, which can be recorded as

$$t_i^o = t_i^r + t_i^e = \frac{Di}{R_i} + \frac{Ci}{\omega_i^c}. \quad (10)$$

Due to the strong computing power of the edge server, the execution time on the edge server is much shorter than the transmission time, so t_i^e can be ignored. The time for the entire task to be offloaded to the MEC server can be recorded as

$$t_i^o = t_i^r = \frac{Di}{R_i}. \quad (11)$$

When SMD chooses to offload tasks to the edge server, it must satisfy that the time for calculating offloading cannot exceed the maximum delay limit, so

$$t_i^o \leq T_i^{\max}. \quad (12)$$

From formula (11) and formula (12), we can deduce the following formula:

$$\frac{Di}{R_i} \leq T_i^{\max}. \quad (13)$$

Formula (13) can also be expressed in the following form:

$$R_i \geq R_i^{\min}. \quad (14)$$

$R_i^{\min}$ is the minimum transmission rate during the unloading process. In addition, in order to ensure the

transmission quality, the normal calculation and offloading can be performed when the SNR is set to be higher than a certain threshold. It is assumed that the SNR satisfies

$$\text{SNR} = \frac{\sum_{i=1}^K a_{i,k} p_{i,k} g_{i,k}}{I_{i,k} + \sigma k^2} \geq \lambda D. \quad (15)$$

2.5. Mobile English Teaching. Mobile English learning based on edge computing is essentially an extension of the long-distance wireless teaching model, so its characteristics must be consistent with and inherited from the long-distance teaching. It inherits the five most representative advantages of distance education, namely, flexibility of teaching time and space, initiative in choosing learning content, reversibility of teaching process, diversity of teaching resources, and diversity of teaching methods. In addition, mobile English learning also shows many unique characteristics of its own [12].

- (1) It includes learning flexibility, portable learning tools, and learning space anytime, anywhere. These characteristics of mobile learning enable students to freely control time and space and obtain information such as voice, video, and text data [13, 14].
- (2) The key to mobile learning is contextualized learning associated with learning activities. The situation is conducive to enhancing the meaning of learning, changing the passive acquisition of knowledge to the application in a new situation. Mobile learning has produced a new way of interaction, realizing the interaction between students and the situation [15].
- (3) Fast and fast interaction superstrong communication and interaction function is an important feature of mobile devices, allowing students to interact with their learning partners and teachers at any time. In the learning process of individual inquiry, students can supplement group collaborative learning.

While mobile learning has these advantages, due to the limitations of technology and education, as well as some inherent characteristics of the English subject, it has revealed some urgent problems to be solved [16], such as the following.

2.5.1. The Randomness of the Learning Process. Due to the flexibility of mobile learning, learning may start anytime and anywhere, or it may be interrupted anytime and anywhere [17]. This will affect the integrity of knowledge transfer in the teaching process. The presentation state of knowledge imparted in foreign language teaching is systematically structured, which is conducive to collective imparting and ensuring the correctness of knowledge [18]. The main task of foreign language education is to organize and process, improve, and disseminate scattered and fragmented foreign language knowledge in a systematic and complete manner. The mobile English teaching method based on edge computing provides greater selectivity and convenience while learning characteristics of randomization of the process will

inevitably affect the integrity and systemicity of knowledge transfer [19].

2.5.2. Dispersion of Study Time. In the English learning process based on edge computing, there is a lot of time to rest during the learning process. The scattered learning time makes learning itself discontinuous, and external factors interfere with the learning process: problems such as concentration, memory of knowledge, and anxiety are very sensitive, which will affect the effect of mobile English learning [20].

2.5.3. Slightly Higher Learning Costs. Due to the impact of the development of smart phones, the mobile English information service platform based on edge computing has higher requirements for the mobile phone configuration used by students, which is not affordable for some families. Therefore, the cost of using this platform to learn is becoming higher and higher [21,22].

3. Mobile English Teaching Information Service Platform Based on Edge Computing

3.1. English Teaching Design Model. We propose a mobile English teaching model based on edge computing. With the assistance of mobile phone short messages and real-time connection mode based on browsing and connection mode, an English teaching platform can be constructed that can realize the main functions related to the existing foreign language online teaching in a mobile environment. In order to be more in line with the characteristics of English teaching, we mainly consider the two dimensions of process and time when designing the model. As shown in Figure 2, the time dimension is mainly to design mobile learning activities in units of days, weeks, and months. The process dimensions include preclass, in-class, and after-class. The design of activities is mainly combined with in-class consideration from two aspects: preclass preview and after-class review [23].

3.2. Overall Structure of the English Teaching Platform. The administrators of this platform can manage students and teachers uniformly through the Internet and can add, delete, and modify the information in the database server at any time. The platform network environment relies on the Internet, and the mobile smart client access method can be through the campus WIFI wireless service or based on the mobile phone digital network. In the mobile phone signal digital network environment, there is no need to consider the client density in the unit space. The teaching information platform relies on Java technology, network communication is implemented, and the Apache Http Client module is implemented. User requests and server responses use Servlet independent of the platform and protocol as the middle layer, and the data server uses MySQL to access the database through JDBC [24]. On the mobile smart terminal, the SQLite database is used to greatly reduce the amount of

network communication data. At the same time, some functions can also be realized when the network is unstable. SQLite is a lightweight database and a relational database management system that complies with ACID. The most important thing is that it is faster than the world-famous MySQL database. The network framework is the foundation and prerequisite for the operation of the platform, and it needs to be planned with multiple factors as shown in Figure 3.

3.3. Module Design of English Teaching Information Service Platform. After analyzing the needs of the platform, the platform is finally designed into 3 functional modules, including the student personal center module, the English teacher management course module, and the platform administrator module. The detailed framework of the platform module is shown in Figure 4.

3.3.1. Student Module. The main function of the student module is to help students choose their favorite English courses for learning, such as oral English, English reading, English listening, English writing, and other related courses. Each student must choose four different English courses to study, and each semester can only choose one English course. In addition, students can also modify their personal information, such as height, weight, personal avatar, and motto. After choosing an English course to study, you must finish the relevant course before you can take the final exam [25].

3.3.2. Teacher Module. The main function of the teacher module is to help English teachers in teaching and managing courses, allowing teachers to arrange and adjust lessons. Under the premise of edge computing, the arrangement of English courses should not cause the time conflict between English teachers and students. For example, the same teacher cannot take two English classes at the same time, the same student cannot take two English classes at the same time, and the same student's English class time does not exceed 2 hours per week. After the English final exam at the end of the semester, the teacher can also input the English scores of each student into this system, so that students can check their English scores in time.

3.3.3. Administrator Module. The main function of the administrator module is to allow the system administrator to be responsible for the maintenance of the information stored in the database, to prevent the loss and leakage of user information and data of teachers and students, and to update and enter the latest English course teaching resources in a timely manner. Students and teacher users can add and delete. If there are new teachers, you can add related teacher information. If there are teachers who resign or transfer to other schools, you can delete teacher information.

The three modules of this platform are divided into labor and cooperation to realize the functions of their own modules. The student module improves the efficiency of

FIGURE 2: English teaching design model.

FIGURE 3: Overall plan of the platform.

FIGURE 4: Framework diagram between the various modules of the platform.

students' choice of courses and learning, the teacher module reduces the teaching pressure of English teachers, and the administrator module improves the effectiveness of courses arrangement of teachers.

3.4. Functional Requirement Design

3.4.1. Platform Requirements. Platform requirements are mainly to solve the delay problem of traditional information service platform information services. Regardless of whether it is developed by C/S mode or B/S mode, users actively initiate information service requests, and then the platform provides relevant information. For most studies, such information services cannot meet the requirements. The reason is that the school's teaching service information is generated very quickly, but the service objects (teachers and students) often do not know that the information has been generated or changed, so they cannot obtain the information in a timely manner through active inquiry. The design of this platform adopts the concept of information push. The platform monitors the dynamic changes of various teaching information, and once it is generated, it will be pushed to the relevant teachers and students in a timely manner. The current class adjustment and suspension management is often operated by the academic staff on the platform, but the students must be manually notified. Because the number of students is relatively large, and in the credit system environment, many teaching classes are often not composed of natural classes, so the workload is very heavy, and it is easy to miss and cause teaching accidents. The main process of score push is shown in Table 1.

The main process of schedule push is shown in Table 2.

3.4.2. English Teacher Needs. According to the classification of the state data collection platform of the Ministry of Education's talent training program, teachers are generally divided into full-time teachers in the school, part-time teachers in the school, part-time teachers outside the school, and part-time teachers outside the school. Among them, full-time teachers in schools refer to frontline teachers in teaching positions, part-time teachers in schools refer to teachers who are also responsible for teaching tasks in administrative positions, part-time teachers outside schools refer to enterprise personnel hired to undertake courses such as training and guidance, and part-time English teachers outside school refer to teachers from other colleges and universities who come to our school to undertake teaching tasks. In the context of the current increase in the number of educated people and the increasing emphasis on English, the proportion of part-time English teachers outside school is increasing year by year, playing an increasingly important role in the entire school teaching activities. However, off-campus part-time English teachers often undertake corresponding work in enterprises at the same time, so there are certain difficulties in obtaining teaching information and implementing teaching routines. Table 3 shows the main process of querying the elective list.

TABLE 1: Result push process.

Example	Grade push
Initiator	Platform
Main process	
(1) The platform monitors the database of the educational administration system and finds new student achievement information	
(2) The platform queries the newly added student achievement information	
(3) The platform formats student achievement information and adds it to the queue in the form of SMS	
(4) The platform sends a text message to remind the results	

TABLE 2: Schedule push process.

Example	Curriculum push
Initiator	Platform
Main process	
(1) The platform monitors the educational administration platform database and finds that the teaching tasks have been arranged	
(2) The platform queries the timetable information of each teacher	
(3) The platform formats the teacher's schedule information and adds it to the queue in the form of SMS	
(4) The platform sends a reminder text message for the class schedule	

TABLE 3: The main process of querying the elective list.

Example	Course selection list query
Initiator	Teacher
Main process	
(1) The teacher logs into the mobile web portal of the English teaching information service platform	
(2) The teacher selects the function of querying the elective list	
(3) The teacher chooses a course in this semester	
(4) The platform provides information on the list of all students who have chosen courses	

The main process of English teacher platform registration is shown in Table 4.

3.4.3. Student Needs. Currently, the computer penetration rate among school students has reached about 80%. Among them, first-year students cannot be equipped with computers according to regulations; third-year students do internships in enterprises, often without a computer network; only second-year students are basically equipped with computers. Because the educational administration management system and the current school's digital campus facilities are deployed based on PCs and computer networks, most students cannot access the campus network in time to obtain teaching service information. One of the original intentions of this article is to use the existing edge computing technology to design a platform that can provide all students

TABLE 4: The main process of English teacher platform registration.

Example	Registered
Initiator	Teacher
Main process	
(1) The teacher sends a short message in the specified format to the platform service number	
(2) The platform records the teacher's faculty account number and mobile phone number in the mobile information service platform database platform	

TABLE 5: The main process of the student's timetable query.

Example	Timetable query
Initiator	Student
Main process	
(1) Students log in to the mobile web portal of the English teaching information service platform	
(2) Students choose the timetable query function	
(3) The platform finds all the course numbers selected by the student	
(4) According to these course numbers, the platform finds the starting time, location, and teacher of this week	
(5) The platform formats the timetable information and returns it to the students	

with real-time English teaching service information, so that all students can enjoy the convenience brought by campus digitalization. Table 5 shows the main process of the student's timetable query.

Table 6 shows the main process of student English course score query.

4. Performance of Mobile English Teaching Information Service Platform

4.1. Course Selection in English Teaching Courses. After completing the overall design of the experiment and the analysis of the functional module requirements, we conducted simulation experiments on the mobile English teaching information service platform in the next few months. We invited 20 English teachers from a college and English majors from the Foreign Languages Institute. A total of 200 students in four grades use the edge computing-based mobile English teaching information service platform designed in this paper for testing. The development environment and development tools are shown in Table 7.

After logging into the platform as an administrator from the background, we conducted statistics and data analysis on the students' course selection. The test results are shown in Figure 5.

It can be seen from Figure 5 that the two lower grades, freshmen and sophomores, have a large number of students who choose oral English and English reading courses because it has not been long since the freshman and sophomore entered the university and they still do not understand the various rules and regulations of the university. They want to show themselves more and express themselves, so they are more willing to choose language output courses for learning, and juniors and seniors are calmer and are more willing to choose language input English reading and writing courses.

4.2. Satisfaction Survey. We also designed 20 questionnaires on the design of the English teaching information service

TABLE 6: The main process of student English course score query.

Example	Grades inquiry
Initiator	Student
Main process	
(1) Students log in to the mobile web portal of the English teaching information service platform	
(2) Students choose the result query function	
(3) The platform finds out all the score information of the student and returns it to the student	

TABLE 7: System development environment and development tools.

CPU	Intel Core i5-7300u
GPU	GeForce GTX 1060Ti
Operating system	Windows 10 Professional Edition 64 bit
RAM	8 GB
JRE version	1.8
Development platform	Eclipse
Server	Tomcat8.5

platform for 20 college English teachers to fill out. These 20 English teachers from the same university are roughly the same in terms of highest academic qualifications, teaching ability, and popularity among students. A total of 20 questionnaires were issued, 20 questionnaires were returned, and 1 invalid questionnaire was eliminated, and the remaining 19 were valid. For questionnaires, after we count the survey results, we draw them into the form of statistical graphs, and the display results are shown in Figure 6.

It can be seen from Figure 6 that more than 80% of English teachers are satisfied with the English teaching information service platform designed this time. Only a few teachers are not satisfied with this platform and believe that this platform still has some defects, such as server crashes and inaccurate course information. The problem needs to be improved and perfected.

FIGURE 5: Course selection status of students in each grade.

FIGURE 6: Satisfaction of teachers of different ages.

5. Conclusions

The mobile English teaching information service platform designed in this article brings convenience to the majority of English teachers and students, so that students can learn English anytime and anywhere, so that they can fall in love with English and enjoy the fun of mobile English teaching. But this platform still has many flaws and vulnerabilities that need to be improved. It can be seen from this article that both hardware and software developments are good news for mobile teaching based on edge computing. For basic education, the advancement of technology and concepts is

conducive to the effective connection between classroom learning and extracurricular learning, helping students efficiently manage scattered spare time and providing students with the possibility of learning in a nonclassroom mode. Most of the current mobile learning platforms embody more of the essence of a commodity. Their fundamental starting point is from a commercial point of view, which is driven by commerce and lacks discussion and conscious research on the combination of equipment application, software design, and education and teaching. Guidance makes the learning effect poor and highlights its limitations. Therefore, the future research trend should be to scientifically and

reasonably guide the research of mobile learning models from the perspective of the essence, characteristics, and methods of education.

Data Availability

No data were used to support this study.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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