

## Retraction

# Retracted: Emotion Analysis for Foreign Language Learning under Scenarios of Network

### Security and Communication Networks

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert reader that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

### References

- [1] J. Zheng and F. Xu, "Emotion Analysis for Foreign Language Learning under Scenarios of Network," *Security and Communication Networks*, vol. 2022, Article ID 2789291, 9 pages, 2022.

## Research Article

# Emotion Analysis for Foreign Language Learning under Scenarios of Network

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With the development of the Internet, modern educational technology is also making continuous progress based on the Internet. Internet technology provides us with abundant online learning resources and creates a brand new teaching mode. Changes in the field of education bring new opportunities and challenges, which affect students' mental and physical health. This study focuses on the psychological problems of students under the background of network teaching. Through data analysis, it can be concluded that emotions not only affect students' interest in learning but also affect their learning process. The results show that emotion plays an important role in students' learning, and different sources of learning emotion and emotional experience have different effects on students' academic performance. Teachers must scientifically use modern educational technology to establish a good learning environment and, at the same time, help students to have a healthy psychology. Only having a healthy body and mind can improve one's comprehensive ability.

## 1. Introduction

With the rapid development of information technology, great changes have taken place in all aspects of society, and the world has entered the Internet era. Under the influence of the Internet, modern educational technology has changed greatly, and online learning, as a new educational model, has become a popular way of learning [1]. With the support of information technology, online learning breaks the traditional teaching mode and makes the multi-interaction between students, teachers, and network learning resources across time and space become a reality. In the context of modern educational technology, network education platform enables intelligent and in-depth communication and interaction between teachers and students and computer learning system [2]. In this era, the exchanges between different nationalities in the world are also becoming increasingly frequent. Language, as the basic medium of communication and the carrier of cultures, is particularly

important. Only by understanding the language can we understand the culture of a country. In this context, the importance of foreign languages is very prominent. Modern educational technology continues to reform and develop, among which the biggest impact is foreign language learning. Foreign language learning not only needs a lot of materials but also needs to understand the cultural knowledge of the foreign language so that learners can easily find their own learning methods. The online platform provides a large number of learning materials for foreign language learning, and students can study online freely and independently [3]. At the same time, with the expansion of network influence, students' learning psychology will also have a certain change. Therefore, educators must pay attention to students' mental health.

Studies on college students' learning focus on the field of mental health, and studies on individual learner differences mainly focus on intelligence and linguistic ability, while studies on emotional factors are ignored. However, it is far

from enough to explain the particularity and complexity of foreign language learning only from a cognitive perspective [4]. With the development of humanistic psychology, the focus of language teaching has gradually shifted from how teachers teach to how students learn, resulting in more and more researchers' attention to emotional problems in foreign language teaching. The affective filtering hypothesis of Krashen [5], an applied linguist, holds that emotional barriers prevent language learners from fully obtaining comprehensible input. When the emotional barrier is strong, language learners may be able to understand the language input, but there will be a screening of language materials, and all materials cannot be smoothly delivered to the language acquisition device for internalization. If the barriers of emotional factors are smaller, the language input will proceed more smoothly and the foreign language learning effect will be better [6]. In this context, researchers are paying more and more attention to the influence of emotional factors on foreign language learning. Due to the examination pressure and learning burden caused by the exam-oriented education system, learners are becoming more and more anxious. Foreign language (English is the most popular foreign language in many countries) has become a subject with a higher level of anxiety among many subjects. The cultivation of emotion in foreign language has become one of the hottest topics for scholars at home and abroad because it is not only an emotion factor but also an important variable in the study of "individual differences." Therefore, it is necessary to study the emotional factor of foreign language anxiety. In order to arouse students' enthusiasm for learning a foreign language and enhance their ability of foreign language learning, foreign language teachers should pay more attention to the complexity and particularity of foreign language learning and attach importance to emotional factors in foreign language learning [7]. On this basis, they should flexibly use teaching methods to effectively organize foreign language teaching activities and establish a harmonious teacher-student relationship, which can effectively relieve students' foreign language anxiety to a certain extent and encourage students to master the method of regulating emotions through Internet technology. Therefore, this study takes college students' mental health as the research object to study the status quo and educational countermeasures of their foreign language learning in online environment. Through specific scientific data analysis to prove the correctness of the research, find the specific emotional state of students.

## 2. Related Work

*2.1. Research on Emotional State of Student Learning.* The most important function of human language is the communication between people, which will involve emotions definitely. People need to express their feelings, communicate with others, and solve problems with languages [8]. Foreign language, as a nonnative language to learn, is bound to cause problems and setbacks to students in the process of learning. Therefore, students with a positive emotional attitude will be of great help to learn English well. Emotional

factors are also a part of psychological quality, which is an important ability of contemporary college students to adapt to the fierce competition of modern life. Therefore, to pay attention to the emotional factors of college students, which reflects the educational thought of taking students as the main body, emphasizing, understanding, and respecting the individual needs of students and paying attention to the cultivation of students' quality are of great significance to cultivate students' ability of independent learning [9].

The development of information technology began to enter the Internet era. A series of information technology synergistic effects have triggered a profound social impact, resulting in many fields including philosophy, psychology, and education, and began to use this new technology. The application of network technology in these fields has long attracted the attention of scholars from all walks of life abroad. Dulay et al. proposed the "affective filter hypothesis," which made a preliminary study on the affective factors related to the learning process, in order to explain how affective factors affect foreign language learning process. Later, Krashen developed the theory on this basis, and he believed that affective filtering is a psychological disorder that prevents learners from completely digesting the comprehensive input obtained in their learning [5]. According to the affective filter hypothesis, language learning varies from person to person, and the differences are mainly due to psychological reasons because each learner has a different intensity in learning motivation, personality, and attitude, thus forming corresponding strong or weak psychological barriers. Sha believes that the more motivated learners are, the more confident they are, the less anxious they are, and the less they filter language input, and the more input they get, the better their learning results will be. On the contrary, learners with low motivation, low self-confidence, and anxiety absorb less comprehensible input and thus have a poorer effect in foreign language learning. Morris distinguishes between positive and negative emotions [10]. He believes that when we study the emotional factors of language learners, we should focus on how to overcome the problems caused by negative emotions and how to create positive and beneficial emotions. He believes that learners' emotional state directly affects their learning behavior and results. Ren concluded from his own and others' research that emotions play a decisive role in foreign language learning and that any failure to learn a foreign language can be attributed to a variety of emotional disorders [11].

*2.2. Emotion of Foreign Language Learning under Network Technology.* Online learning environment is a necessary condition for the introduction of network factors into the learning situation and the development of learning activities [12]. The learning psychology of learners under the influence of modern educational technology is obviously different from that in the traditional learning environment [13]. The uniqueness of learning mode in the network environment will lead to the uniqueness of learning psychology; especially, learners will have obvious feelings of loneliness and anxiety. Supporting asynchronous learning is one of the most

celebrated advantages of online learning, which breaks the limit of time and space for learning activities. However, from another perspective, the separation of time and space between teachers and students will cause a series of problems. For example, the uncertainty of learning situation and the lack of “real contact” will cause anxiety among learners. Educational research under the network environment needs to combine technology, psychology, and teaching [14]. NaoKo, a Japanese scholar, believes that the psychological basis, namely, emotion, is the core of autonomous learning. Many researchers have realized that emotional factors can affect the effect of learning, but there are few studies that combine emotional factors with autonomous learning. For example, English, as a foreign language, should be learned with a positive emotional attitude by learners [15], so as to mobilize their enthusiasm and initiative of learning, thus cultivating the ability of independent learning. Therefore, emotional factors are the key to cultivate the independent learning ability [16].

With the further study, researchers gradually found that emotions play a very important role in online foreign language learning [17], among which network technology factors, teaching process, and online course guidance all affect students’ emotions. For example, the delay of online system will make students feel nervous. Researchers have found that, in online foreign language learning, when learners’ goals are very clear, they will establish a learning direction, manage learning goals, and improve learning motivation. Meanwhile, learners’ time management ability, emotion management ability, their own learning foundation, and learning support are all factors that affect students’ online learning ability [18]. To some extent, the emotions generated by teachers in the process of online teaching as well as how to choose teaching content, design corresponding online teaching activities, and supervise and guide students’ learning process are related to the determination of teaching objectives. All these aspects will affect teachers’ emotions [19]. In online foreign language teaching, teachers can skillfully drive students’ learning atmosphere to feel relaxed and promote students to develop healthy learning emotions. Therefore, whether teachers can create a healthy learning emotional atmosphere plays a key role in students’ learning.

### 3. Research Design

*3.1. Emotion of Foreign Language Learning Based on Network.* With the progress of society, we should not only care about students’ grades but also know their mental health. Most of the research studies on foreign language learning under modern educational technology are concentrated, including teaching methods, teacher feedback, and technology-related aspects. Researchers in the field of computer mostly conduct research studies on the influencing factors of online foreign language learning from the perspective of technology. Network learning is a new form of online information transmission with the rapid development of Internet technology [20]. Because of the development of online learning technology, students’ learning environment has changed.

Online foreign language learning makes full use of the characteristics of Internet technology, such as powerful online interaction, no geographical restrictions, and simplicity, promoting the popularity of foreign language learning. More and more students are carrying out online live streaming of education activities, and the research on all aspects of online learning environment is gradually carried out [21].

Our method is based on the process, causes of students’ emotions, and considers the main environment in which emotions function. Firstly, this paper studies what academic emotions college students will have in the process of online foreign language and what aspects these academic emotions come from. Three hundred and fifty college students were randomly selected as interviewees, including 150 boys and 200 girls. The basic information of interviewees is shown in Table 1.

This research will use qualitative method based on grounded theory (grounded theory is the process of collecting and analyzing relevant data for a phenomenon system and then discovering, developing, and testing theories from it [22]) to verify the academic emotions of college students in online foreign language classes and explore their sources. Text data are obtained through interviews with college students, and the interview content is analyzed by using the coding method of grounded theory. Qualitative research is an integrated exploration and study of certain social phenomena in a natural context with the researcher himself as the research tool and various data collection methods, analyzing the collected data by induction. The qualitative research method does not set a frame in advance, but carries out in-depth and meticulous interaction with the researcher in the research, so as to obtain the overall explanation of this phenomenon.

The interview method is a method to obtain original data through oral communication with the research object. As the most commonly used specific research means to collect data, the interview method uses research tools such as recording pen, interviewee’s consent form, and notebook to ensure the complete use of information in interview. Considering the purpose of the study is to investigate the academic emotions of college students in the online learning environment and the sources of academic emotions so as to prepare interview questions, college students who have attended network classroom were interviewed and the interview content was recorded. Afterwards, Word and qualitative analysis software Nvivo12 were used to transcribe and encode the interview materials. The interview questions are structured so that students can freely express their real thoughts. A small number of students who could not be interviewed face to face in formal interviews were interviewed online through Wechat, Dingding, and other communication media with their consent. Most students mainly conduct face-to-face interviews, and in the process of communication, they can also pay attention to the nonverbal responses of interviewees. The researchers recorded the content manually during the interview or recorded the interview with the consent of interviewees. During the interview, the researcher maintained a respectful attitude and listened carefully to the

TABLE 1: Basic information of interviewees.

Major	Man	Woman	Total
Math	20	40	60
Computer	20	30	50
Electronics and information engineering	30	10	40
Language and literature	10	20	30
Psychology	30	30	60
Ethnonyms	10	30	40
Biology	10	30	40
Art and design	20	10	30
Total	150	200	350

interviewees' answers to the questions. They used Word to transcribe and saved the recordings after the interview. In this study, the minimum interview time of a single interviewee was 10 minutes, the longest was 1 hour, and the average interview time of each interviewee was 30 minutes, with a total of 100,000 words of transcript. In order to ensure the personal information security of interviewees, their information is blurred. It is easier to find students' real emotions in face-to-face communication and survey.

*3.2. The Influence of Web-Based Learning Emotion on Learning Effect.* Based on the research of the first stage, the main academic emotions experienced by college students in online live teaching are happiness, relaxation, boredom, and anxiety. Considering that academic emotions mainly come from two aspects, teaching method and teaching environment, we further investigate the impact of emotional sources and emotional experience based on online foreign language learning on the learning effect, as shown in Figure 1. More than 1,800 college students from different majors were randomly selected, including 780 male students and 1050 female students. According to the emotional assessment questionnaire used by Gross and Levenson (1995), in the study, the emotional assessment of college students adopts 9 points, with 1 indicating that they do not feel such emotions at all and 9 indicating that they feel very strongly about emotions. Four emotional adjectives (happy, relaxed, anxious, and bored) were selected as the main content of the study according to the emotional experience induced by the experiment. We selected different types of online classroom contexts to investigate the emotional state of students in each situation.

### 3.2.1. Relax

*(1) Teaching Environment.* In the online foreign language course, the form of class is very flexible. The teacher does not require every student to turn on the microphone and the camera. You can choose the environment you feel suitable or accustomed to. You can lie on the sofa in your pajamas at home, with your favorite snacks in front of the computer. You are familiar with the use of network class. When students actively answer the questions raised by the teacher in the form of bullet screen, the teacher presents the feedback in the form of emoticons. For good speeches, the teacher gives thumbs up on the interactive panel. The pattern of teaching

is fixed, and there will be no sudden mic or roll call. During the break, the teacher will play some music and organize students to do some interesting activities remotely.

*(2) Teaching Method.* In the online foreign language course, the teacher's teaching method is very flexible, creating a learning atmosphere. The teacher explains the knowledge point very thoroughly and naturally interacts with the students. There is no sense of distance between the teacher and the students when discussing problems together. The teacher has a comprehensive control of the knowledge content, and the theory learning will deepen the understanding of students with examples. After class, the assignment is moderate, and the teacher will give positive feedback to each student after completing the task. Teachers will extend a lot of knowledge points in the online class, and the feedback from teachers through the interactive panel is also very timely. You preview the knowledge to be learned today with the guide before class. You are very familiar with the knowledge points and can follow the progress of the teacher to study in an orderly way.

### 3.2.2. Happiness

*(1) Teaching Environment.* You can choose the way you like in online foreign language classes. There will be a break in the middle of the class, and the class schedule is compact and orderly. The teacher will ask the students to open the camera so that each student can see their own images, and their changes of expression and emotional will be more intuitively presented. Teachers are very familiar with the use of live broadcasting platforms and electronic devices. The network is smooth and the pictures of online classes are bright. The course mode is fixed, and the teacher will not suddenly check the mic or call the roll, but will communicate with the students on the interactive panel. The teacher will organize a group discussion and let students discuss freely on the Internet. Everyone can speak freely and the teacher will give feedback to each student in time on the interactive panel. In the online class, the course content is very clearly presented. At the same time, you can look up information anytime and anywhere. After the lecture, the teacher will use videos related to the course to impress the students. After class, you can also use the replay function to study repeatedly, check the omissions and fill in the gaps, and have a deep understanding of the knowledge points.

*(2) Teaching Method.* In the process of online foreign language courses, teachers will not follow the script, but explain the content based on their own experience or vivid and interesting examples. They will attract students' attention by talking about some topics they are interested in. The teacher prepares the lesson well before class and arranges the rhythm of the lesson. The teacher will not talk about too much digression, and the examples cited are very appropriate to help you understand the course knowledge more fully. Teachers communicate more with students and ask them to answer questions voluntarily. If the students give correct answers, teachers will praise them, fully recognize them, and accept

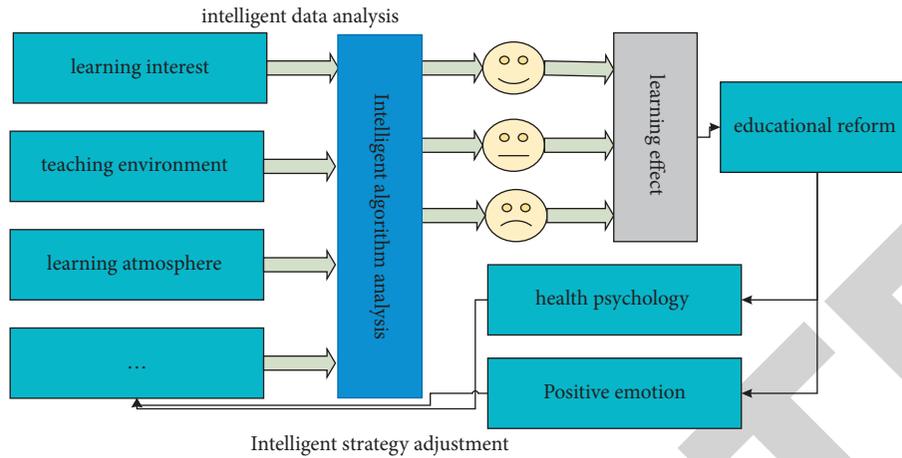


FIGURE 1: The relationship between students' learning emotion and learning effect.

diversified answers. If they give wrong answers, teachers will not criticize students, but give positive feedback and guide students to think in an appropriate way. Rude criticism will bring negative emotions and even psychological barriers to students and skillfully guide students to learn how to solve the problem is more important than the answer.

### 3.2.3. Boredom

(1) *Teaching Environment.* In online foreign language courses, teachers and students do not have cameras on so that they cannot see teachers and classmates. It is easy to be distracted all the time. In class, the teacher cannot see it when students apply for mic to ask questions, and no one answers questions on the interactive panel. If there are any questions or new ideas, the teacher cannot share them with students in time, and discussion and questioning will be very late. The teacher has explained a certain knowledge point in detail, but there are still students who apply for continuous mic and keep asking the teacher. When the teacher asks questions in class, no students apply for the mic, and no one answers the interactive panel. When the teacher is on the air, the picture is not smooth, and the electronic equipment always needs to be adjusted. Teachers have not mastered the functions of some platforms, and there are some technical problems; especially when playing video and audio, they need to constantly switch, which greatly delays the class time. Live broadcast time is long, and there is no rest in the middle, which will make the eyes particularly uncomfortable in class. Teachers, in order to meet class requirements, sometimes make the time of online classes too long. The environment of the teacher's network classroom is very noisy, and the volume of electronic devices is relatively low, which affects the class. Your home environment is not quiet enough, and there is no learning atmosphere. This objective learning environment is often the source of negative emotions.

(2) *Teaching Method.* In online foreign language courses, the teacher speaks too fast and the course schedule is too tight. You cannot follow and accept too many knowledge points

since it is not easy to master. The teacher will talk about a lot of irrelevant topics and give inappropriate examples, which make it difficult to grasp the main points of the course. The content of the course is boring, and most of the time is spent on reading courseware. There are no videos related to the course during the whole class, and no activities are organized to adjust when students are distracted. In online class, due to the lack of interaction, some problems may not unfold. Some of the questions are already well understood, and they go back and forth on that question. The teaching mode is fixed and single, without innovation, causing students distracting and missing knowledge points. The homework assigned by the teacher after class is not given positive feedback and only used as the grading standard.

### 3.2.4. Anxiety

(1) *Teaching Environment.* In online foreign language courses, teachers are not familiar with the operation of computers and the use of software, so the video and audio conversion always wastes a lot of time. In an online class with no playback, the Internet is always not smooth, and you cannot concentrate because of the noisy sound of other students opening mics together. In online class, the surrounding environment is very noisy, which always disturbs you and makes you miss a lot of explanation of knowledge points. Because the network jam, the signal is not good, which makes the screen not clear and the courseware cannot be opened. There is no interactive intimacy because of the screen. In a closed space, there is no one to interact with you and give you feedback when you express your opinion. The class time is very long and there is no rest in the middle. You cannot focus on the class and find your harvest is very little. You forget to turn off the microphone, and your personal voice affects other classmates and teachers.

(2) *Teaching Method.* In online foreign language courses, the teacher's teaching progress is very fast and the explanation of knowledge points is not very thorough. You cannot keep up with the pace of the teacher, cannot accurately understand

the teacher's meaning, and miss the focus of the course. Your teacher will suddenly ask you a question online but you do not hear the question clearly and have no classmate to turn to for help. You do not know how to answer it without preparation. The knowledge points in the course are not consistent, and the key points are not very clear. It is easy to be distracted in class, and you would have missed a lot of content when you return to class. You cannot keep pace with teachers and classmates in learning and cannot timely consult teachers and classmates for the progress of the course and the knowledge points you cannot understand. In a word, negative emotions lead to a significant decrease in learning efficiency, which proves the importance of emotion in teaching.

## 4. Research Results and Analysis

### 4.1. Learning Emotion Based on Network

**4.1.1. Analysis of Experimental Results.** From the interview results, it can be found that the academic emotions experienced by college students in online foreign language learning are boredom, relaxation, happiness, anxiety, helplessness, frustration, tension, and anger. Through the analysis of the frequency and proportion of students experiencing academic emotions in online learning, it can be found that, about 94% of college students in the online foreign language learning experience boredom, 88% of college students in the network classroom experience to relax mood, 77% of college students would experience the happy mood, and 68% of college students experience anxiety. It can be seen that college students mainly experience four kinds of academic emotions in online classes, which are boredom, relaxation, happiness, and anxiety in sequence, as shown in Figure 2.

The emotional sources of college students in online foreign language learning are shown in Figure 3. The academic emotions of college students in online learning mainly come from teaching methods and teaching environment. The academic emotions of college students mainly come from the teaching environment, such as network environment, network broadcast platform, learning atmosphere, interaction between teachers and students, course participation, interaction between classmates, teacher feedback, and online resources. The academic emotions generated by college students also come from teaching methods: course organization, course time arrangement, knowledge framework presentation, and example analysis. In online foreign language learning, teachers' teaching style, difficulty of teaching content, and students' main factors are not the main sources of students' academic emotions.

**4.1.2. Discussion of Research Results.** It can be found from the above research that the main academic emotions experienced by college students in online foreign language courses are boredom, relaxation, happiness, and anxiety. Emotional experience in online foreign language learning mainly comes from teaching environment and teaching method. Online foreign language learning provides a brand

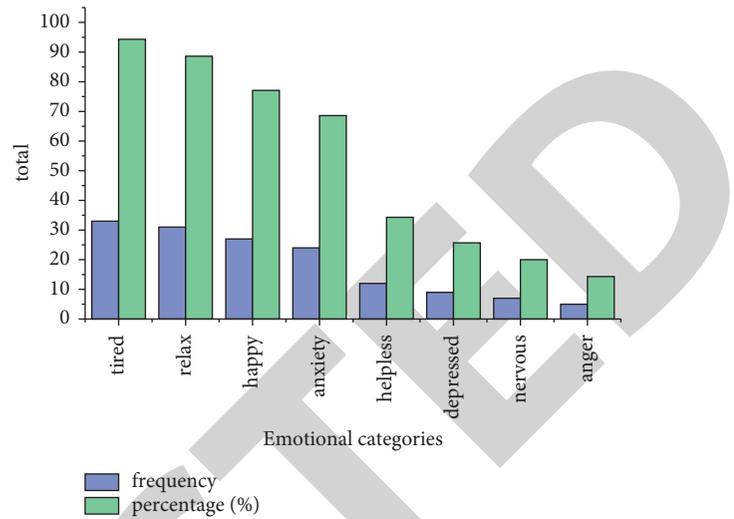


FIGURE 2: College students' emotions in online foreign language learning.

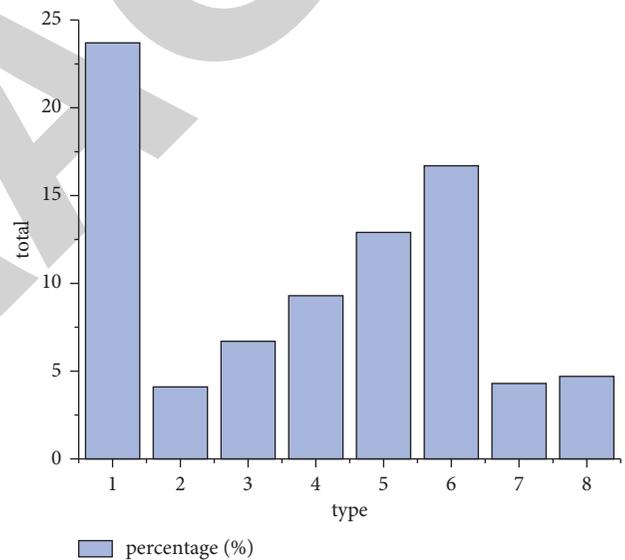


FIGURE 3: Emotional sources of foreign language learning under the context of modern educational technology (Notes:1, way; 2, time; 3, framework; 4, network environment; 5, live webcast; 6, learning atmosphere; 7, teacher's attitude; 8, students' attitude).

new learning environment. Students will have different emotional experiences when facing different network environments, live broadcast platforms, and online interaction modes between teachers and students. At the same time, teachers will also show different teaching methods in the process of live teaching. The organization of online class schedule, the arrangement of course time, and the presentation of relevant knowledge will give students different emotional experience. When college students are able to communicate with teachers at any time, carry out online group discussions with their classmates, and have high participation in the course, they will feel happy.

Teaching environment can make students produce positive academic emotions, such as good teaching

atmosphere and harmonious teacher-student relationship, which can strengthen students' positive emotions. This is confirmed by the research results. In online foreign language learning, college students can interact with teachers and classmates in real time, participate in class discussions, share their own opinions, and answer questions directly with teachers online, experiencing happy emotions in a harmonious learning atmosphere. In the process of distance learning, teachers can accurately identify the emotional state of distance learners and timely give positive online feedback to students in the learning process, which can promote students to actively participate in the classroom environment, improve students' satisfaction with online learning, and effectively improve the online completion rate.

The phenomenon of network lag and delay will occur in online courses, and the unstable network environment will make college students feel bored. When teachers suddenly ask students to turn on their mics or cameras during online classes, students will feel anxious. Due to the diversity of teachers' teaching situations and students' learning situations, different situations and events in the learning process will affect the occurrence and change of students' academic emotional experience. Online academic emotional experience has a strong immediacy. The network environment has an important impact on the emotional experience of college students. Although the Internet develops rapidly in today's era, there are still some students in the learning environment without wireless network. In the network classroom, the stability of the network environment is guaranteed, the courses can be smoothly carried out, and teachers and students can interact online in real time, which will effectively reduce the boredom of students. In the process of teaching activities, students can get teachers' timely response and positive feedback interaction, increasing the understanding of teachers and students to each other. Teachers can really help students adjust their learning attitude by listening to students' feelings and giving feedback information seriously. The environment for students to take online courses is generally closed and lacks learning atmosphere. The learning environment of network classroom is virtual. When teachers and students have real-time dialogue in class, students' sense of participation becomes stronger. Besides, online discussion allows students to adjust their state and gradually focus on the learning atmosphere.

#### 4.2. The Relationship between Modern Educational Technology and Emotion

4.2.1. *Analysis of Experimental Results.* Table 2 shows the mean and standard deviation of the influence of emotional sources and emotional experience on learning effect of college students in online foreign language teaching.

Xuexixiaoguo also calculated the mean and standard deviation of emotional sources and emotional experiences of students of different genders in online foreign language teaching. The statistical result of male students' learning accreditation was 3.561.58 and that of female students was 3.31.59. SPSS22.0 was used for 2×4 two-factor analysis of

TABLE 2: Mean and standard deviation of the influence of learning emotion on learning effect.

Classroom mood	Teaching environment (M ± SD)	Teaching approach (M ± SD)
Happy	4.33 ± 1.9	4.38 ± 1.53
relax	2.96 ± 1.48	4.01 ± 1.35
boredom	3.13 ± 1.18	2.44 ± 1.08
anxiety	3.3 ± 1.26	2.86 ± 1.71

variance. The independent variable is the source of academic emotion (teaching method and teaching environment), emotional experience (happiness, relaxation, boredom, and anxiety), and the dependent variable is learning effect.

The results show that there is no significant difference between different genders and different grades of college students' academic emotions on learning results in online foreign language teaching ( $p > 0.05$ ). In the online learning effect of college students, the main effect of academic emotion is not significant,  $F(1, 175) = 0.003$ ,  $p > 0.05$ . The main effect of emotional experience was significant,  $F(3, 175) = 9.95$ ,  $p < 0.05$ , and the interaction between the source of academic emotion and emotional experience was significant,  $F(3, 175) = 3.28$ ,  $p < 0.05$ . A simple effect test was conducted on the interaction between emotional experience and academic emotion source, and it was found that there was significant difference between relaxation emotion and academic emotion source level, ( $F(1, 175) = 6.22$ ,  $p < 0.05$ ). When academic emotion comes from the teaching environment, the difference between the four emotions is significant,  $F(1, 175) = 4.30$ ,  $p < 0.01$ . When academic emotion comes from the teaching method, there is significant difference between the four emotions,  $F(1, 175) = 9.08$ ,  $p < 0.001$ . In other words, the source of academic emotion and emotional experience will have an impact on the learning effect of college students, as shown in Figure 4.

According to the experimental results in Figure 4, when the academic mood comes from the teaching environment, the learning effect under happy mood is better than that under bored mood, and the learning effect under happy mood is better than that under relaxed mood. When the learning emotion comes from the teaching method, the recognition score under happy mood is significantly higher than that under bored mood, and the recognition score under happy mood is significantly higher than that under anxious mood. When the academic emotion is derived from the teaching method, the recognition performance under relaxed mood is significantly higher than that under bored mood. Learning emotion under relaxed mood is more conducive to learning when it comes from teaching method, while learning effect is not good when it comes from teaching environment.

4.2.2. *Discussion of Research Results.* By studying the influence of different sources of academic emotion and emotional experience on the learning effect in online foreign language teaching, it is found that when the academic emotion comes from the teaching environment, the learning

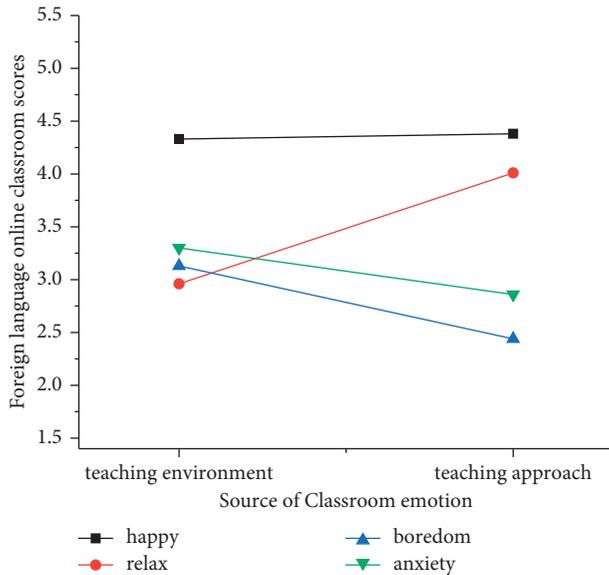


FIGURE 4: The relationship between classroom scores and emotional sources.

effect under happy mood is better than that under bored mood. Studies have shown that most students will be more motivated to learn when they are affirmed by teachers in their communication with teachers. It can be shown that teachers' affirmation is conducive to improving students' positive academic mood and promoting students' learning. Students can focus their attention in online classes, keep up with the pace of the teacher's course, and have a relaxed mood, so as to stimulate their interest in online learning, and the learning effect will be better. When the academic emotion under relaxed mood comes from teaching method, the academic performance under relaxed mood is significantly higher than that under bored mood. Through the network broadcast platform, the online platform is convenient and fast to operate, and the class atmosphere is strong when students communicate with teachers directly, and students have a stronger sense of participation. Students often use discussion boards and assessment tools to exchange ideas and receive quick feedback from their teachers. Students prefer to focus their learning on technology-supported collaborative learning, where interaction between students and faculty is enhanced by sharing knowledge.

When the happy emotion comes from the teaching method, the students' classroom performance is significantly higher than that under the bored mood, and the recognition performance under the happy mood is significantly higher than that under the anxious mood. In other words, the positive emotional experience generated by students in the process of learning is conducive to promoting the maintenance of students' interest in learning and can improve their interest in learning, thus improving their cognitive participation and learning effect. Online foreign language teachers need to give students pre-class guidance, mainly for course preview. In the process of online teaching, teachers set up corresponding discussion parts so that students can ask questions. When the number of students asking questions in

class is small, the teacher can solve students' doubts in class. When a large number of students raise questions, teachers answer them one by one, which will occupy a large amount of class time. However, teachers cannot be online all day long, and it is difficult to give timely and rapid replies to students after class. When teachers fail to pay attention to students' online questions, students get bored and reduce their learning efficiency. When students have anxious academic emotions, they cannot master the knowledge they have learned well, and their thinking efficiency is not high. Some negative emotions will damage learners' efforts and affect learners' use of efficient learning strategies. After the end of the online class, the discussion area can be set up to reply to students' messages.

In the learning process, teachers can provide practical problems for students through the online platform, guide students to use online learning resources to sort out knowledge points, and create a learning atmosphere for students to study independently and actively communicate, which can reduce students' anxiety and effectively improve their learning efficiency. Students' learning attitude helps to stimulate their motivation, develop their potential and adjust their learning, among which students' emotional state in learning will have an impact on students' learning ability. Online learning for middle school students is full of intense emotional experience; the interaction among students and teachers will have some emotional experience. When students' positive emotions are enhanced, they will continue to study online. When students have anxiety during study, it will affect their learning continuity and hinder their learning efficiency. Teachers can make use of the rich online resources to design courses, give students the opportunity to discuss freely, flexibly adjust the class atmosphere, help students generate more positive emotions, cultivate students' good learning attitude, and guide students to study efficiently.

## 5. Conclusion

Contemporary college students are faced with the network environment supported by the Internet and mediated by information resources. On the one hand, with the continuous development and change of computer technology and network technology, the impact of network environment on college students' mental health is multifaceted and all-round. On the other hand, with the improvement of material life, people pay more attention to students' mental health. Therefore, this study takes college students' mental health as the research object to study the close relationship between students' emotion and learning in the network environment. In the context of modern educational technology, teachers can make full use of Internet resources and select examples combining current hot phenomena when explaining knowledge points to attract students' interest in learning and let students explore knowledge points freely. Modern educational technology model puts forward higher requirements for teachers. Teachers should not only learn to use network technology but also guide students to have a positive emotional state of learning. In the network classroom, teachers can obtain a variety of teaching methods

online, reduce the negative emotional state of students, and let students have a healthy psychology; a modern teacher must master skills.

### Data Availability

The experimental data used to support the findings of this study are available from the corresponding author upon request.

### Conflicts of Interest

The authors declare that they have no conflicts of interest to report regarding the present study.

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