

Retraction

Retracted: Analysis of the Factors Influencing the Adaptability of College English Learning Based on Artificial Intelligence Teaching Assistance

Mathematical Problems in Engineering

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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 readers 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.

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] L. Cao and S. Zhu, "Analysis of the Factors Influencing the Adaptability of College English Learning Based on Artificial Intelligence Teaching Assistance," *Mathematical Problems in Engineering*, vol. 2022, Article ID 8543492, 9 pages, 2022.

Research Article

Analysis of the Factors Influencing the Adaptability of College English Learning Based on Artificial Intelligence Teaching Assistance

Lingmei Cao  and Shuxian Zhu

Department of Foreign Languages, Shanghai University of Finance and Economics Zhejiang College, Zhejiang, Jinhua 321000, China

Correspondence should be addressed to Lingmei Cao; z2011229@shufe-zj.edu.cn

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Good learning adaptability is the key to ensure students' learning quality. Learning maladjustment not only affects students' learning effect but also affects the effectiveness of AI-enabled English learning. Although some studies have found that there is a certain degree of poor learning adaptability in the practice of artificial intelligence (AI) supporting English teaching, most studies only describe the phenomenon and do not further explore the causes of poor learning adaptability. Therefore, the research intends to understand the current situation of college students' English learning adaptability under the support of AI through the investigation and analysis of college students' English learning adaptability under the support of AI and clarifies the impact of various influencing factors on learning adaptability as well as the relationship between learning adaptability and various factors, and put forward strategies to improve students' learning adaptability. This research is a new exploration of learning adaptability in the field of AI English learning. At the same time, it is also an extension of the research environment of learning adaptability in information-based learning and a supplement to the research results. This paper combs the composition structure of college students' English learning adaptability under the support of AI and constructs the influencing factor model of college students' English learning adaptability under the support of AI. The research has certain theoretical significance and practical value.

1. Introduction

The iterative updating of science and technology has accelerated the transition from the information age to the intelligent age, and the society has entered a new era of intelligence and informatization [1–4]. The development of technology in the new era has changed the traditional educational concept [5], innovated the educational model and optimized the teaching methods. The purpose of educational reform is to promote the improvement of education. From the early stage, we practiced pronunciation with the help of phonograph, conducted listening and speaking training with the tape recorder, started audio-visual learning through video recorder, realized a wide range of TV teaching with TV, and brought network learning and mobile learning with

modern multimedia and network. Technology always acts as a “booster” in English learning. At present, modern information technology led by artificial intelligence (AI) technology is playing a role in English learning [6–11]. Based on AI technology, it conducts personalized and accurate tests on students' English level, helps students correct their pronunciation in time, tracks and accurately records students' learning behavior data, and then promotes learning efficiency through scientific digital portrait analysis [12–16]. AI supporting learning has become the research frontier of the current English education informatization. It tries to change the traditional teaching mode through AI technology, improve teachers' teaching quality, enable students to get a better learning experience, and promote the improvement of English learning quality.

Learning adaptability, as one of the important indicators to measure students' learning effect, is the key to determine the quality of learning. Many studies have shown that good learning adaptability is an important guarantee for students to achieve better academic performance, and learning adaptability has a significant positive predictive effect on academic performance. On the contrary, poor learning adaptability may lead to decline in interest, lack of motivation, emotional instability, and lack of confidence, thus affecting the normal academic development and physical and mental health growth of students. Educational psychology research shows that learning adaptability is a common problem. Learning through any form of teaching organization has the problem of learning adaptability. Even if the class teaching has been used for hundreds of years, not all learners can adapt. The integration of AI and English education has brought about changes in English teaching environment and teaching content, as well as in teachers' teaching mode and students' learning style. For college students, participating in English learning supported by AI is still a new experience. They need to adapt to the new learning environment and new learning methods and master new learning methods so as to ensure the good development of their English performance in the intelligent learning environment.

At present, the support of AI for English learning is in continuous development, and relevant research is in full swing. It has preliminarily realized the diversification of the functions of AI to support English learning with full coverage of application scenarios. It has been widely recognized by many students and teachers in practical applications. Relevant studies have found that in English teaching and learning, AI has been very effective in personal assisted writing, man-machine dialogue writing, and machine automatic writing and group collaboration. At the same time, some studies have found that with the development of AI to support English learning practice, there is also a certain degree of learning inadaptability, such as the lack of participation of some students in intelligent speech learning, the inadaptability of autonomous learning strategies, and the poor adaptability to English resources and platforms. These problems directly affect the effect and quality of students' English learning and the effectiveness of AI enabled English learning and are not conducive to the development of students' psychological quality in the intelligent education environment. Therefore, it is necessary to further explore the problem of students' English learning adaptability under the support of AI so as to improve students' learning adaptation level and learning quality under the support of AI.

Learning adaptability is one of the important indicators to measure students' learning effect, and it is the key to determine students' learning quality in the information environment. Learning maladjustment not only affects students' learning effect but also directly affects the effectiveness of AI enabled English learning. Therefore, based on the current situation, what is the learning adaptability of college students to English learning supported by AI? And what factors affect the learning adaptability of college students? This is an urgent problem to be solved in improving

the quality of college students' English learning supported by AI. Therefore, the author believes that the premise is to help AI support the improvement of English learning quality, to understand the specific situation of English learning adaptability supported by AI, and mainly to identify the main factors that affect students' adaptability to AI support English learning.

2. Related Work

English bears the labels such as "worldwide," "global," "globalization," and "most important," and plays an important role in the global language. Moreover, with the development of world economic globalization, the use of English has expanded, and its importance has become prominent. People have a stronger demand for English acquisition. For a long time, English learning has always been closely linked with technology. At the beginning of the advent of computers, the United States began the experiment of "computer-assisted instruction" (CAL), in which "computer-assisted language instruction" (call) is an important field in many research fields of call. Call stands for a new language teaching method. Learners learn the language learning resources provided by the computer through the computer screen. At the same time, the computer is also an intelligent assistant for language teachers' teaching or research. It can be said that call has a significant change in the traditional language teaching method. In the development of technology, call makes full use of computer science, information technology, psychology [17–20], and the further combination with automatic analysis technology, the Internet (WWW), natural language processing, and other technologies so that the call system has high intelligence (such as oral response and voice scoring) and further develops call into "AI computer-assisted language teaching" (Icall). Icall is the combination of language teaching and AI technology, which promotes the modernization of language teaching. At present, the research results of the combination of AI and English teaching have been very fruitful. From the combing of relevant literature, the process of technology development has never been interrupted in the research of AI and English teaching, and more and more attention has been paid to the practical application in education and teaching in recent years. Next, it will be described from the two research perspectives of "technology inquiry" and "teaching practice." From the perspective of "technological inquiry," in the field of technology development, the early American scholar Marina Dodigovic developed an intelligent tutor of academic English for non-native English learners. With the help of AI technology, it helps non-native English learners correct errors in language learning. Marina Dodigovic's teaching practice has verified the effectiveness of the system. In 1990, the United States educational examination center began to develop an automatic scoring system. By the end of the 1990s, three automatic composition scoring systems, such as intelligent essay assessor (IEA), electronic essay rater (e-rater), and intellimetric, had come out. And the ETS' criterion English practice system can score and analyze students' English compositions within 20

seconds. In the early development stage of Tennessee University, the United States introduced AI technology into English teaching and developed an AI teaching system. Through the AI teaching system, students can learn English, which improves the efficiency of English teaching, breaks the wall of English classroom teaching, realizes independent learning, customizes the “personalized” learning mode, changes the traditional knowledge presentation mode, and innovates the traditional teaching mode. It has promoted the improvement of school English education.

With the maturity of technology and the deepening of research, the research on AI supporting English education has changed from “technology inquiry” to “teaching practice.” The research of “teaching practice” is mainly to explore the design of English teaching mode and learning path supported by AI and further explores the rules of English teaching and learning in the intelligent environment based on technical support so as to optimize the learning effect and improve the teaching quality. AI has a great potential in English education. Machine translation, natural language understanding, and speech recognition technology have been applied to English learning. As for how AI supports English learning, from the existing research, it is mainly reflected in the following aspects: AI supports listening training, AI supports oral learning, and AI supports writing training, as shown in Figure 1.

- (1) AI supports listening training: Listening is an important module in college students’ English test. The AI supports English listening training mainly by providing students with a huge English listening learning resource base based on the AI corpus. Intelligently assess students’ listening level, automatically retrieve appropriate listening learning materials for students according to their personalized choices and record their learning habits, and provide personalized and accurate learning services for students.
- (2) AI supports oral practice: Oral English is an important part of language learning, which combines listening and speaking. Oral expression can test students’ language learning and reflect their ability to apply language knowledge. Based on AI technology, the machine can understand human language and give timely feedback. Manually support oral learning, create a virtual oral dialogue and exchange scene, and timely correct the wrong expression in the students’ dialogue scene. Oral expression pays attention to accurate pronunciation and smooth expression. For pronunciation practice, AI can demonstrate pronunciation, recognize and analyze students’ pronunciation through speech recognition, natural language processing, and other technologies, conduct accurate and real-time evaluation, correct pronunciation, and students can practice pronunciation repeatedly through extensive reading and follow-up for unlimited times. The training of students’ oral fluency is mainly virtual scene dialogue practice. AI technology creates various virtual “mother tongue” communication scenes. Students

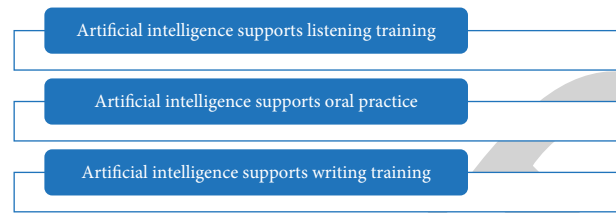


FIGURE 1: AI supports English learning.

conduct man-machine dialogue based on virtual scenes. AI technology will comment on the accuracy, pronunciation, intonation, and speed of students’ language expression, so that students can understand their oral learning in real time.

- (3) AI supports writing training: The writing level reflects the students’ comprehensive language application ability and logical thinking ability. The training of English writing supported by AI is mainly to guide students’ writing and to correct and comment on English compositions. The AI writing system is mainly based on corpus, cloud computing, natural language processing technology, etc. On the one hand, virtual teachers guide students’ writing according to the writing theme, help students build a writing framework, provide reference vocabulary according to the writing process, exercise students’ writing language organization ability, and assist students to complete writing. On the one hand, it can automatically identify the misspellings of students’ compositions, analyze sentence patterns, words, grammar, collocation, expression content, etc., make specific corrections, make revision guidance, and score the overall score. Students can revise it repeatedly to improve their writing ability.

3. An Analysis of the Influencing Factors of College English Learning Adaptability Assisted by AI Teaching

This study is about the adaptability of college students’ English learning under the support of AI. The subjects of the study are mainly college students. The samples are randomly selected from colleges and universities in Beijing. Exclude the options set in the basic information section of the questionnaire that have not participated in AI English learning as well as the questionnaires that have the same choice of all the scale topics and are suspected of being perfunctory and filling in indiscriminately. Finally, 552 valid questionnaires were obtained.

3.1. Reliability and Validity Test of Questionnaire

3.1.1. Reliability and Validity Test of Learning Adaptability Questionnaire

- (i) Reliability test: Cronbach’s alpha was used to measure the reliability α . The value range is (0, 1). The larger the coefficient, the higher the reliability, and the higher the reliability of the measurement results.

SPSS 25.0 was used to conduct “reliability analysis” on the questionnaire. The analysis results are shown in Table 1. The total reliability of the learning adaptability questionnaire was 0.913, and the reliability of a single dimension was tested. In addition to the “physical and mental health” dimension $\alpha = 0.749$ for other dimensions, i.e., α above 0.800. According to the Cronbach’s coefficient α criteria, if the coefficient is more than 0.8, the reliability is good; it is acceptable between 0.7 and 0.8; if it is less than 0.7, then the reliability is poor. Then the reliability of the learning adaptability questionnaire in this study is acceptable, and the internal consistency of the data is good.

- (ii) Validity test: The structural validity was tested by the KMO test and Bartlett’s spherical test. SPSS 25.0 was used to conduct “factor analysis” on the sample data. $KMO = 0.903$ and $P = 0.01$ of the learning adaptability questionnaire; the criterion for academic basis is the KMO value range (0, 1). The closer the KMO value is to 1, the stronger the correlation between variables. When the KMO test coefficient is greater than 0.5 and the Bartlett sphere test P value is less than 0.05, then factor analysis can be performed only when the two indicators meet the standard. It shows that the validity of the learning adaptability questionnaire in this study is acceptable, and factor analysis can be carried out. Factor analysis verifies whether the dimension division of the learning adaptability questionnaire is reasonable. The principal component analysis method is used for factor analysis to extract the common factor with five-factor eigenvalues greater than 1, which is basically consistent with the research idea. The cumulative variance contribution rate reached 70.980%, which is more than 60% of the total, indicating that the selected factors are well representative and the factor extraction results are ideal. Using the maximum difference method for factor rotation, the indicators and corresponding dimensions are basically consistent with the scales preliminarily combed in the study, so the dimensions divided in the study are more scientific and reasonable. In conclusion, the reliability and validity of the learning adaptability questionnaire in this study have passed the test and can be used for subsequent research and analysis.

3.1.2. Reliability and Validity of the Questionnaire on Influencing Factors of Learning Adaptability

- (i) Reliability test: Cronbach’s reliability coefficient test of learning adaptability influencing factors questionnaire results, as shown in Table 2, show the total table reliability coefficient of the questionnaire on influencing factors [21] of learning adaptability $\alpha = 0.809$ and single dimension reliability α . All factors above 0.785 and if the reliability of test results are acceptable, then the reliability of the questionnaire is good.

- (ii) Validity test: The KMO test and Bartlett’s spherical test of learning adaptability questionnaire gives $KMO = 0.904$ and $P = 0.01$ for the questionnaire of influencing factors of learning adaptability. When the KMO test coefficient is greater than 0.5 and the Bartlett sphere test P value is less than 0.05, factor analysis can be performed when the two indicators meet the standard. To sum up, the reliability and validity (structural validity, convergent validity, and discriminant validity) of the questionnaire on the influencing factors of learning adaptability in this study have passed the test and can be used for subsequent research and analysis.

3.2. Analysis of College Students’ English Learning Adaptability Supported by AI

3.2.1. Analysis of the Learning Adaptation Level.

Descriptive analysis describes the overall situation of the data through the mean or median and generally uses the mean to measure the overall level of the variables. The questionnaire adopts “five points” scoring. According to the score, four levels can be specified: low adaptability ($1 \leq$ average adaptability < 2), general adaptability ($2 \leq$ average adaptability < 3), medium adaptability ($3 \leq$ average adaptability < 4), and high adaptability ($4 \leq$ average adaptability < 5). First of all, from the average value m , it can be seen that the average adaptation value of each dimension is above 3, and the average value of the total score is $m = 3.382$, indicating that the overall learning adaptability level of college students in AI supported English learning is medium ($3 < m < 4$), the standard deviation is less than 1 which is relatively small, and the dispersion of sample data is relatively low, indicating that the overall learning adaptability level of college students is relatively stable in AI supported English learning.

The average values of each dimension from high to low are learning interaction ($M = 3.499$), learning attitude ($m = 3.448$), learning environment ($m = 3.425$), physical and mental health ($m = 3.33$), and autonomous learning ability ($m = 3.208$). It can be seen that the average value of a single variable in the learning adaptability level of college students in the process of AI supporting English learning is also above 3 points, which is at the medium level. Among them, the average value of “learning interaction” is the highest, with a score of 3.499, but it does not reach more than 4 points, which needs to be improved. Looking at the ranking of scores, the scores of “physical and mental health” ($m = 3.33$) and “autonomous learning ability” ($m = 3.208$) are lower than the overall learning adaptability level ($m = 3.382$). It can be seen that if you want to improve the learning adaptability of college students in AI English, you can focus on how to improve the education and training of learners in these two aspects. Further analysis is done on the two dimensions of “physical and mental health” and “autonomous learning ability.”

3.2.2. Analysis on the Difference Characteristics of Learning Adaptability.

In order to deeply understand the specific situation of college students’ English learning adaptability

TABLE 1: Learning adaptability questionnaire Cronbach's α reliability analysis.

Dimensions	Number of items	Sample size	Cronbach's α coefficient
Learning attitude	3	552	0.858
Autonomous learning ability	3	552	0.826
Learning interaction	3	552	0.893
Learning environment	3	552	0.867
Physical and mental health	3	552	0.749
Total reliability value	15	552	0.913

TABLE 2: Cronbach's questionnaire on influencing factors of learning adaptability α reliability analysis.

Dimensions	Number of items	Sample size	Cronbach's α coefficient
Learning motivation	3	552	0.809
Self-ability accomplishment	3	552	0.812
Learning self-efficacy	3	552	0.785
Teacher support	3	552	0.789
Resource platform	3	552	0.818
Total reliability value	15	552	0.896

supported by AI, independent sample t -test, one-way ANOVA, and other methods are used to analyze the differences. Its various dimensions in individual variables include gender, grade, discipline background, and English major or not.

- (i) Differences in adaptability of AI to English learning among college students of different genders: The independent sample t -test is used to study the differences of English learning adaptability of college students of different genders under the support of AI. The results show that the learning adaptability of male and female students is consistent in the level of AI support for English learning, there is no significant difference, and they are all at the medium level. However, in the dimension of "learning interaction," female students are significantly higher than male students.
- (ii) Differences in the adaptability of AI to English learning among college students of different grades: One-way analysis of variance (ANOVA) was used to analyze the adaptability of AI to English learning of college students in different grades. The results show that there is no significant difference in the level of learning adaptability among college students of different grades in AI supported English learning, but there are significant differences in "learning interaction" and "learning environment." The learning adaptability of third grade students is significantly lower than that of other grades.
- (iii) Differences in the adaptability of AI to English learning among college students with different subject backgrounds: The independent sample t -test is used to study the differences of students' learning adaptability in different subject backgrounds. The results show that there is no significant difference in the adaptability of college students' AI to support English learning in different subject backgrounds. From the perspective of specific dimensions, there

was no significant difference in each dimension between different subject backgrounds ($P > 0.05$).

- (iv) Differences in learning adaptability between English majors and non-English majors: The independent sample t -test is used to study the differences of English learning adaptability. The results show that English/non-English majors show significant differences in the level of learning adaptability in English learning supported by AI. The learning adaptability of English majors is significantly higher than that of non-English majors. There are also significant differences in learning attitude, learning interaction, and learning environment. English majors' adaptability to learning attitude, learning interaction, and learning environment is significantly higher than that of non-English majors.

4. Result Discussion and Analysis

4.1. Discussion and Analysis of Investigation Results of the Learning Adaptation Level

- (1) Under the support of AI, college students' English learning adaptability is at the medium level, and relatively speaking, the adaptability of students' autonomous learning ability is poor, and the adaptability of learning interaction is good. Through descriptive statistical analysis, it is found that college students' English learning adaptability supported by AI is at the medium level ($m = 3.382$). This is consistent with previous studies. From the perspective of specific dimensions, there is no significant difference between the dimensions. The score of "learning interaction" dimension is higher than that of other dimensions ($m = 3.499$), and the score of autonomous learning ability is the lowest ($m = 3.208$), which is contrary to the previous survey results. On the one hand, the possible reasons for these differences lie in different types of students, different sampling, different research environments, etc., so the research

results will also be inconsistent. Second, language itself is a tool for communication. Compared with other disciplines, there may be more opportunities for communication and interaction in the learning process. In addition, the learning supported by AI can timely feedback and instructions to students and evaluate students' learning results in real time so as to improve students' learning interaction experience and better adaptability of learning interaction.

- (2) There are differences in individual variables of college students' English learning adaptability supported by AI: Through the analysis, it is found that the overall level of college students' English learning adaptability supported by AI has no significant difference in gender, grade, and subject background, but there are significant differences between English majors and non-English majors. Among them, in terms of gender, the adaptability of AI support for English learning of female students is higher than that of male students, but there is no significant difference, which is consistent with the research conclusions in other information-based learning environments. For boys and girls in "learning interaction," "there is a significant difference in language learning. Girls' learning interaction adaptability is significantly better than boys' learning adaptability. Many foreign studies on the differences between gender and language learning show that girls usually have more advantages in language learning than boys. Girls' thinking tends to imitate, think in images, and are better at language learning, while boys are more into independent thinking, abstract thinking, and good at logical reasoning. Therefore, this may be a branch of girls' AI." The reason that English learning interaction is better among girls than boys and learning adaptability is slightly higher among girls than boys hold true. In terms of subject differences, there is no significant difference in English learning adaptability supported by AI in different subjects. The research results are basically consistent with the findings of Liushujun et al. It shows that no matter other information-based learning environments are still in the learning environment supported by AI, disciplines have little impact on college students' learning adaptability.

4.2. Discussion on the Investigation Results of the Factors Influencing Learning Adaptability

- (1) In English learning supported by AI, college students' learning motivation, intelligence literacy, learning self-efficacy and resource platform all have a significant direct and positive impact on learning adaptability. When one aspect is improved, it will directly improve students' learning adaptability to a certain extent. Among them, the improvement of learning self-efficacy (0.237) has the greatest direct

impact on their learning adaptability. For every unit of learning self-efficacy, learning adaptability will increase by 0.237 units.

- (2) In English learning supported by AI, intelligent literacy, teacher support and intelligent platform have an indirect impact on college students' learning adaptability. Through indirect influence, the total effect value of learning adaptability is increased. Among them, improving students' intelligence literacy, strengthening the support of learning teachers, and optimizing the intelligent platform will improve students' learning motivation and indirectly improve learning adaptation.
- (3) The effects of each influencing factor on learning adaptation from large to small are intelligent literacy (0.401), resource platform (0.280), learning self-efficacy (0.237), learning motivation (0.228), and teacher support (0.163). Whether it is the direct effect or the total effect, the effect value of intelligent literacy on learning adaptability has a high effect value. When improving students' learning adaptability, improving students' intelligence literacy can achieve good results in improving learning adaptability.

5. Strategies for Improving College Students' English Learning Adaptability Supported by AI

Through the analysis of the level of college students' English learning adaptability supported by AI and the effect relationship of its influencing factors, it is understood that at present, college students' learning adaptability in English learning supported by AI is at a medium level, and the level of students' learning adaptability in all aspects needs to be improved, and there is a complex structural relationship between the influencing factors of learning adaptability. According to the research results, aiming at improving college students' English learning adaptability under the support of AI, combined with constructivist learning theory and social learning theory, this study puts forward corresponding strategies from the individual level of students, the level of teachers, and the level of resources. as shown in Figure 2.

5.1. Individual Level: Autonomous Learning Ability and Intelligent Literacy Improvement

5.1.1. *Improvement of Autonomous Learning Ability.* It is found that college students' autonomous learning ability is relatively poor in the English learning supported by AI. Therefore, we should focus on improving students' autonomous learning ability in order to better adapt to the English learning supported by AI. In the learning environment supported by AI, with the teaching concept "learner centered" and relying on AI technology, students can change from the original "knowledge receiver" to "knowledge builder," truly realize the transformation from "educatee" to

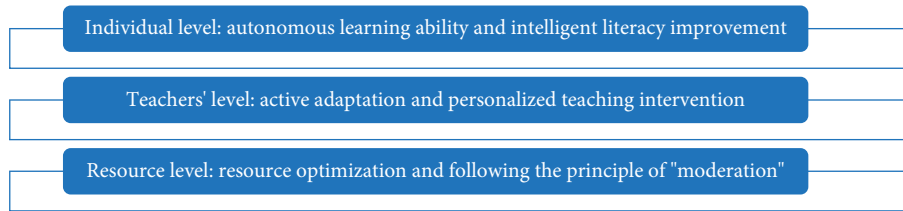


FIGURE 2: Corresponding strategies at different levels.

“learner,” and let students have more free and independent power. While students get more freedom, autonomy, and personalization, it also requires students’ autonomous learning ability to adapt to intelligent learning so as to achieve effective development. Therefore, the better autonomous learning ability of college students is the key to promote the development of students’ intelligent learning and realize the transformation of college students’ adaptation from “educatee” to “learner.” The adaptation of students’ autonomous learning ability is an important part of students’ learning adaptability.

5.1.2. Intelligent Literacy Improvement. The education of intelligent society poses a challenge to students’ intelligent literacy. Sitting on high-quality learning resources does not mean that students can carry out effective learning. Students need to have the ability to independently select resources and reasonably use resources in order to obtain effective learning. Therefore, the improvement of students’ intelligence literacy can not only enhance the objective evaluation of AI English learning tools to a certain extent but also improve students’ ability to control the AI English learning resource platform. The cultivation of college students’ AI literacy is inseparable from the direct education of the school. Universities offer courses in the public basic disciplines of AI to guide students to understand the relevant knowledge and applications of AI, stimulate students’ curiosity and interest in AI, and enable students to form intelligence awareness. Moreover, teachers, as the practitioners of intelligent education, are also the guide for students’ intelligent literacy. Teachers integrate “AI” into English classroom teaching, drive students to learn to use AI learning tools to complete learning tasks, promote students’ intelligence application level through practice, help students establish correct intelligence ethics, and thus improve students’ intelligence literacy.

5.2. Teachers’ Level: Active Adaptation and Personalized Teaching Intervention. With the integration of AI and education, AI has gradually realized the simulation, extension, and even replacement of teachers’ work to some extent. However, it must also be clear that “AI will not replace teachers, but teachers who use AI will replace teachers who do not use AI.” Human-computer cooperation is the trend of future education development. AI can improve teachers’ teaching efficiency and help teachers carry out personalized teaching. Only when teachers take the initiative to adapt and

make full preparations, can they meet the challenges of AI and adapt to the future educational form of human-computer cooperative operation. Teachers should take the initiative to adapt to the change of their roles as a guide in the era of AI. Teachers should take the initiative to adapt to the teaching in the era of AI. First, they should establish the educational concept “learner centered,” carry out teaching design guided by the educational concept “learner centered,” and innovate teaching models. Second, they should actively accept and make objective evaluation. In learning, students are teachers oriented and imitative. Students’ learning behavior and learning style are influenced by teachers. Therefore, teachers are required to “set an example for others and set an example.” Teachers should first adapt to the teaching form of AI. The acceptance and the skillful use and good evaluation of AI teaching tools will affect students’ subjective evaluation of AI learning, arouse students’ attention to AI learning tools, stimulate learning motivation, and improve learning adaptability. Third, teachers should take the initiative to improve their own intelligent education literacy. Teachers’ intelligent education literacy refers to mastering basic AI knowledge and principles, making reasonable judgments on the educational value of AI, using AI to improve subject ability and teaching ability, and cooperating with AI to carry out teaching. Teachers actively and consciously participate in teacher education and training, make full use of the Internet platform to observe excellent teaching cases, actively participate in AI teaching competitions, enrich their own AI knowledge, create a teaching mode of “AI +” discipline, and education literacy in practice.

5.3. Resource Level: Resource Optimization and Following the Principle of “Moderation”. Learning takes place in a certain environment. In a learning environment, learning resources have an important direct impact on students’ learning adaptability. High-quality learning resources can bring better learning experience to students, can enhance students’ perceived usefulness and perceived ease of use of resources, that is, improve students’ acceptance, so as to achieve better learning results. In addition, high-quality learning resources can attract students’ attention, stimulate their learning motivation, and promote appropriate learning. At present, there are already a large number of English learning resources based on AI technology. Their functions and positioning are different, showing the phenomenon of excessive resources and uneven quality. To a certain extent, it is more difficult for students and scholars to choose

resources that adapt to their own learning needs. For students, the simpler and the more convenient the operation is, the more applicable the learning content is, and the easier it is to be accepted. Therefore, in the design and development of learning resource platform, students' perception should be taken as an important reference item. The content of learning resources should adapt to students' cognitive development. Too simple or difficult learning content is not suitable for students' development. In a word, the development of resource platform should follow the principle of "moderation."

6. Conclusion and Future Prospects

It is an important period for the integration and development of AI. The importance of AI to educational reform is self-evident. English learning is the frontier of the research on the development of English educational technology. At present, great achievements have been made in the practice of AI to support college students' English learning. A certain degree of learning adaptability is also found to be poor. The learning adaptability of college students is not only related to the quality of learning but also affects the performance of AI to support learning to a certain extent. AI supporting learning is the inevitable trend of future education development. Students' learning adaptability is the key to students' academic development and the effectiveness of AI. This research on college students' English learning adaptability under the support of AI is a preliminary study on the problem of students' learning adaptability in the education and teaching supported by AI. The study only conducted data collection in Guizhou universities. Whether the research conclusions can be applied to all college students remains to be further studied and verified. Learning adaptability is affected by many factors. This study discusses the impact on learning adaptability from five aspects. There are other dimensions that are not involved. We will continue to explore in-depth in the follow-up research.

Data Availability

*The dataset can be accessed upon request to the corresponding author.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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