

# Generative AI: A New Frontier for Classroom Emotion Management in Basic Education English Teaching

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**Abstract:** *This study investigates the application of generative artificial intelligence (AI) in classroom emotion management within basic education English teaching. Despite the growing importance of emotion management in educational settings, its integration into English classrooms remains underexplored. The paper examines the current status, advantages, and challenges of using generative AI to enhance classroom emotion management. Through a review of existing literature, the study proposes practical strategies for teachers, including designing diverse teaching tasks, monitoring student emotions in real-time, providing personalized feedback, and optimizing classroom interaction. The findings suggest that generative AI can significantly improve teaching quality and student learning experiences by creating a more positive and engaging classroom atmosphere. However, challenges such as teachers' limited AI application skills and resource constraints in educational environments hinder its widespread adoption. Future research should focus on developing tailored AI tools and enhancing teacher training to promote the effective integration of AI in basic education English teaching.*

**Keywords:** *Generative AI; Classroom Emotion Management; Basic Education; English Teaching; Emotion Regulation*

## 1. Introduction

In the context of basic education, English teaching is not merely the transmission of linguistic knowledge, but also a crucial component in shaping students' emotions, attitudes, and values. Classroom emotion management, as a key factor in the teaching process, directly impacts students' interest in learning, their level of participation, and the effectiveness of teaching <sup>[1]</sup>. A positive classroom emotional atmosphere can facilitate active interaction between teachers and students, thereby enhancing students' motivation to learn and their psychological well-being. However, emotion management in English classrooms at the basic education level has not yet received sufficient attention, and teachers still face numerous challenges in the application of emotion regulation strategies <sup>[2]</sup>.

With the rapid development of artificial intelligence (AI) technology, the field of education has been presented with new opportunities. Generative AI, with its powerful data processing and generation capabilities, offers innovative solutions for teaching practices. AI tools can monitor students' emotions in real-time and provide teachers with immediate feedback, thereby assisting teachers in better regulating classroom emotions. Moreover, generative AI can create personalized teaching tasks and encouraging messages, which can stimulate students' interest and enthusiasm for learning, thus optimizing classroom emotion management.

The application of AI technology in basic education has gradually gained attention. The Chinese government has issued a series of policy documents to promote the popularization and application of AI in education, leading to rapid development and significant progress in AI education at the basic education level. However, the application of generative AI in English teaching at the basic education stage is still in its infancy. Teachers' familiarity and application skills with AI tools are limited, and most related research is concentrated at the theoretical level, lacking practical case studies and empirical research <sup>[3]</sup>. Particularly in the area of classroom emotion management, the application of generative AI technology has not yet received sufficient attention and widespread adoption. This research gap urgently needs to be filled to promote the effective application of generative AI in English teaching at the basic education stage.

Therefore, this study aims to explore the current application, advantages, and challenges of generative AI in classroom emotion management in English teaching at the basic education stage. By analyzing existing research, this study seeks to provide practical guidance for teachers, promote the widespread application of generative AI in English teaching at the basic education level, and enhance teaching quality and students' learning experiences.

## **2. Literature Review**

### **2.1 Theoretical Exposition of Emotion Management**

Emotion management refers to the process by which individuals or groups regulate their emotional states through cognitive and behavioral strategies. This concept was first introduced by Salovey and Mayer in 1990 and was subsequently elaborated by Goleman in his 1995 publication, *Emotional Intelligence*. Goleman emphasized the significance of emotional intelligence in personal development and social interactions<sup>[4]</sup>. Emotional intelligence encompasses four dimensions: emotion recognition, emotion understanding, emotion regulation, and emotion utilization. In the field of education, the theory of emotional intelligence has laid the foundation for research on teachers' emotion management, highlighting that teachers' levels of emotional intelligence directly impact their teaching effectiveness and classroom atmosphere<sup>[5]</sup>.

In recent years, researchers have further explored the application of emotion regulation strategies in education. These strategies primarily include cognitive reappraisal and behavioral regulation. Cognitive reappraisal involves altering one's perception of emotional events to modulate emotional responses, while behavioral regulation focuses on modifying behaviors to influence emotional states<sup>[6]</sup>. These strategies are of great significance in classroom emotion management, as they can help teachers better address emotional challenges in teaching and foster a positive classroom environment.

### **2.2 An Overview of Classroom Emotion Management**

Classroom emotion management is the process by which teachers employ various strategies and methods to regulate the emotional climate in the classroom in order to achieve teaching objectives. Its origins can be traced back to the 1990s, when researchers began to investigate the impact of teachers' emotional intelligence on teaching effectiveness. Since then, classroom emotion management has emerged as a significant area of educational research, with scholars exploring how emotion management strategies can enhance classroom performance and student learning experiences.

The primary factors influencing classroom emotion management include teachers' levels of emotional intelligence, emotional awareness, emotion regulation skills, teaching methods, and teaching experience<sup>[7]</sup>. Additionally, student-related factors such as individual differences, emotional states, interest in learning, and classroom participation also significantly impact classroom emotion management<sup>[8]</sup>. Research has shown that effective classroom emotion management can promote positive interactions between teachers and students, enhance students' interest and engagement in learning, and ultimately improve teaching effectiveness<sup>[9]</sup>.

### **2.3 Applications of Artificial Intelligence in Education**

With the rapid advancement of artificial intelligence technologies, their applications in the field of education have garnered increasing attention. Generative AI, in particular, has emerged as a powerful tool for educational practice due to its robust capabilities in data processing and content generation. The applications of AI in education primarily include intelligent tutoring systems, personalized learning path design, emotion analysis, and enhanced classroom interaction<sup>[10]</sup>.

In the context of basic-level English education, the application of generative AI holds significant importance. AI tools are capable of monitoring students' emotional states in real-time and providing teachers with immediate feedback, thereby assisting teachers in better regulating classroom emotions<sup>[11]</sup>. Furthermore, generative AI can create a variety of instructional tasks and personalized encouraging messages, which can stimulate students' interest and enthusiasm for learning, thus optimizing classroom emotion management. For instance, AI tools can generate personalized learning paths based on students' progress and emotional states, offering timely encouragement and feedback to help students maintain a positive attitude towards learning.

### **3. Existing Issues of Classroom Emotion Management in Basic Education English Teaching under the Context of AI in Education**

#### ***3.1 Insufficient Awareness and Capability of Teachers in Emotion Management***

English teachers in basic education often lack sufficient understanding of the importance of classroom emotion management and systematic training in emotion management practices. Teachers tend to focus primarily on the delivery of teaching content, neglecting the emotional states of students and the regulation of classroom atmosphere<sup>[12]</sup>. Additionally, teachers' overall emotional intelligence levels need improvement, particularly in emotion recognition, understanding, and regulation. This issue is more pronounced in remote areas and schools with limited resources, where teachers have limited knowledge of emotion management theory and practice, making it difficult to effectively apply emotion management strategies.

#### ***3.2 Weak Emotion Management Skills of Students***

Students in basic education are in adolescence, experiencing rapid and unstable psychological and emotional development with significant emotional fluctuations. They are easily influenced by academic pressure, peer relationships, and family environments<sup>[13]</sup>. Research indicates that minor learners generally have weaker emotion management skills and lack effective emotion regulation strategies, often displaying anxiety, irritability, and negative emotions in the classroom, which can affect learning outcomes and classroom atmosphere<sup>[14]</sup>.

#### ***3.3 Limited Application of Emotion Management Strategies***

Despite some teachers' awareness of the importance of classroom emotion management, the application of emotion management strategies in actual teaching remains limited. Teachers primarily rely on traditional teaching methods, such as lecturing and group discussions, lacking diverse interactive and emotion regulation tools. Moreover, teachers' observation and feedback on students' emotions in the classroom are often not timely, making it difficult to flexibly adjust teaching strategies based on students' emotional states.

#### ***3.4 Lag in the Application of AI Technology***

Although the application of generative AI technology in education has gradually attracted attention, its use in basic education English teaching is still in its infancy. Teachers' familiarity and application skills with AI tools are limited, and most related research is concentrated at the theoretical level, lacking practical case studies and empirical research<sup>[15]</sup>. In particular, the application of generative AI technology in classroom emotion management has not yet received sufficient attention and widespread adoption, making it difficult for teachers to effectively use AI tools for emotion management in actual teaching.

### **4. Strategies for Classroom Emotion Management and Regulation for Basic Education English Teachers under the Context of AI**

#### ***4.1 Designing Diverse Teaching Tasks with AI***

Teachers can leverage generative AI to design diverse teaching tasks based on teaching objectives and students' learning progress, such as project-based learning, group discussions, and role-playing. These tasks not only stimulate students' interest in learning but also enhance their participation and positive emotions through interaction and collaborative learning<sup>[16]</sup>. Additionally, teachers can use AI tools to create personalized learning paths for students, providing learning content tailored to their levels and interests through intelligent recommendation systems, thereby helping students maintain a positive attitude towards learning<sup>[17]</sup>. Moreover, AI tools can monitor students' learning progress and emotional responses in real-time, providing immediate feedback to teachers. Teachers can adjust the difficulty and format of teaching tasks based on this feedback, ensuring that each student learns at a suitable pace and reducing anxiety and negative emotions<sup>[18]</sup>.

#### **4.2 Monitoring Students' Emotional States with AI**

Teachers can utilize AI technology to analyze data such as students' facial expressions, vocal tones, and text inputs to identify their emotional states in real-time. These technologies help teachers detect emotional changes in students, such as anxiety, confusion, or excitement, and provide early emotional warnings. When negative emotions are detected, teachers can promptly intervene by adjusting teaching methods or providing individual tutoring. Furthermore, AI systems can track students' emotional trends over time, helping teachers understand their emotional development trajectories and formulate more effective long-term emotion management strategies.

#### **4.3 Providing Personalized Encouragement and Feedback with AI**

Generative AI can create personalized encouraging messages based on students' learning performance and emotional states. These messages, which can be in text, voice, or image formats, aim to boost students' self-confidence and motivation. For example, AI tools can provide positive feedback after students' complete tasks, encouraging them to continue striving. Teachers can also use AI tools' immediate feedback functions to help students understand their learning progress in real-time, enhancing their sense of achievement and helping them adjust their learning strategies to reduce negative emotions caused by setbacks. Additionally, teachers can use virtual assistants or chatbots to provide emotional support and motivation, simulating teachers' encouragement and guidance to help students maintain a positive emotional state during learning<sup>[19]</sup>.

#### **4.4 Optimizing Classroom Interaction and Atmosphere with AI**

AI technology can provide intelligent interactive tools, such as online discussion platforms, virtual laboratories, and interactive games, to enhance classroom interactivity and fun. These tools not only increase students' participation but also enhance their positive emotions through interactive learning. AI tools can analyze classroom interaction data to provide suggestions for optimizing classroom atmosphere. For example, AI can recommend that teachers increase group collaboration activities or adjust the teaching pace to create a more positive classroom environment<sup>[20]</sup>. Additionally, teachers can use AI's sentiment analysis functions to understand students' overall feelings towards classroom activities and adjust teaching methods and activity designs based on these analyses to ensure a consistently positive and lively classroom atmosphere<sup>[21]</sup>.

### **5. Conclusion**

This study explores the current application of AI technology in classroom emotion management in basic education English teaching and proposes strategies to enhance teaching quality and student learning experiences. Through diverse task design, real-time emotion monitoring, personalized feedback, and optimized interaction, teachers can more effectively regulate classroom emotions and create a positive learning environment. However, challenges such as teachers' limited AI application skills and constraints in educational environment and resources still hinder its widespread adoption. Future efforts should focus on strengthening teacher training, developing AI tools tailored for basic education, and promoting empirical research to achieve deeper integration of AI and English teaching, thereby supporting high-quality education development.

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