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GenAI Supports the Research on the Key Factors and Intervention Strategies of Mental Health Resilience Construction of Normal School Students

Wendong Chen

College of Education, Zhejiang Normal University, Jinhua, China
Email: 2207815429@qq.com

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Abstract

As future educators, normal students' mental health resilience is directly related to the quality of education and teaching and students' development. With the rapid development of artificial intelligence technology, GenAI provides a new technical path for mental health intervention. Focusing on normal university students, this study explored the key mechanisms and effective intervention strategies of GenAI technology in the cultivation of psychological resilience through mixed research methods. The study found that a personalized counseling program, intelligent emotion recognition and instant feedback constituted the three core elements of GenAI support, and these elements significantly improved the intervention effect through technical means such as intelligent dialogue and virtual situation simulation. Based on empirical data analysis, a hierarchical intervention model was proposed: primary intervention focused on daily stress counseling, intermediate intervention strengthened frustration coping ability, and advanced intervention cultivated occupational psychological resilience. The practice showed that the intervention strategy integrated with GenAI could significantly improve the emotional regulation ability and social adjustment level of normal students, especially in the professional identity and teaching efficacy. The research results provide an operational implementation framework for mental health education in normal universities, and have important reference value for the construction of an intelligent psychological support system. Future research can further explore the integration of multimodal technology and the optimization of long-term follow-up evaluation mechanism.

Subject Areas

Artificial Intelligence

Keywords

GenAI, Normal School Students, Mental Health, Resilience Building, Intervention Strategies

1. Introduction

1.1. Research Background and Significance

1.1.1. Normal Students Face Multiple Pressures, and Their Mental Health Problems Are Prominent

As the core strength of future teachers, the mental health status of normal students is very important to the quality of education and teaching and the development of students. At present, normal students are faced with multiple pressures such as academic work, employment and interpersonal relationships, and there are common problems such as heavy academic burden, high pressure of internship assessment, and uncertain career prospects [1]. From the perspective of development stage, normal students are in the critical period of the transition from students to teachers. They need to complete professional knowledge learning, master teaching skills, and cope with challenges such as teacher qualification examination and job search competition [2]. Professional particularity further increases the psychological load of normal students, and the social expectation of high standards for teachers predisposes them to self-doubt. Some normal students are confused by professional identity and a low sense of teaching efficacy [3]. However, traditional mental health services have limited coverage and slow response, which makes it difficult to provide continuous and effective support. The development of GenAI technology provides a new way to solve this problem.

1.1.2. Technical Advantages of GenAI in Psychological Intervention

GenAI technology has significant advantages in the field of psychological intervention. Through natural language processing and affective computing technology, it can identify the user's emotional state for 7 × 24 hours, break through the time and space limitations of traditional psychological counseling [4], and can well meet the sudden psychological needs of normal students during late-night study or educational practice. In terms of interaction, GenAI uses multi-modal fusion technology, intelligent dialogue system can simulate the empathic response of professional counselors, and virtual situation simulation function can help normal students safely drill to deal with professional challenge scenarios such as teaching conflicts, and improve the practical transformation effect of intervention [5]. Personalized adaptation is another major advantage of Genai. Based on machine learning algorithms, the system can dynamically analyze user data and generate customized intervention plans to avoid the generalization problem of traditional interventions. In addition, GenAI integrates deep learning and big data analysis capabilities, which can identify early signs of psychological problems, support the construction of multi-level intervention system, and is equipped with ethical

mechanisms such as privacy protection and crisis warning to ensure the safety and controllability of the intervention process [5].

1.1.3. The Practical Value of This Study for Improving Psychological Health Support System

The application of GenAI technology in the construction of mental health resilience of normal school students has important practical value. Firstly, it innovates the mental health service supply model. The intelligent support system makes up for the time and space limitations of manual counseling and improves the service accessibility through all-weather response [6]. Second, it promotes the precise development of mental health education. GenAI system can identify the individual differences of normal students, generate targeted intervention programs, and meet diverse psychological needs [7]. Third, a hierarchical and progressive professional psychological training system has been constructed, with primary intervention to deal with daily troubles, intermediate intervention to strengthen stress resistance ability, and advanced intervention to focus on the cultivation of psychological resilience in teaching scenarios, which is closely connected with the professional growth stage of normal students [8]. From the perspective of educational ecology, this study promoted the collaborative optimization of "technology-individual-environment", which could not only provide services for normal students, but also provide decision-making basis for college managers, and also provide feedback for the reform of normal students 'training program. In terms of ethical norms, the data security framework proposed in this study provides a reproducible ethical practice sample for AI applications in the field of education [9].

1.2. Research Objectives and Questions

1.2.1. Identify the Key Factors of GenAI Supporting Resilience Building

This study focused on three core elements to construct a psychological resilience support system for normal school students. Personalized counseling program is the primary factor. Through the analysis of multivariate data, the unique needs of individuals in career adjustment and academic pressure are identified, and the limitations of traditional service homogenization are overcome [10]. Intelligent emotion recognition technology is the second key element, which uses natural language processing and micro-expression analysis technology to capture normal students 'emotional fluctuations in real time and trigger intervention measures such as relaxation training in time. The real-time interactive feedback mechanism is the third element, which realizes the closed-loop training of teaching ability through virtual situation simulation, dynamically generates evaluation reports, and strengthens the acquisition of professional skills and the improvement of psychological adaptability. The ethical security framework is the basic guarantee element. Referring to the responsibility governance model proposed by Guo Yanlong [11], the triple protection mechanism of data anonymization processing, algorithm bias detection, and manual review is designed to construct a safe and reliable psychological support environment. These four elements work synergistically

to cover the whole cycle of psychological resilience training for normal students.

1.2.2. Put Forward Targeted Intervention Strategies

Leveraging GenAI's technical strengths, this study designed a three-level progressive intervention system. Primary intervention focuses on daily stress management: analyzing user text data to automatically push relaxation training and other modules upon detecting stress signals, addressing academic burden via intelligent emotion tracking and micro-lectures. Secondary intervention cultivates professional scenario capabilities, using virtual simulation to build teaching situations for normal students to repeatedly practice classroom management; it provides real-time guidance and designs desensitization training for "podium fear". Advanced intervention targets long-term professional psychological capital development, with intelligent tutors generating personalized suggestions (via analyzing renowned teachers' growth cases and individual practice data) and establishing peer support communities. Technically, personalized algorithms dynamically adjust intervention intensity, embedded algorithm audits mitigate risks, and strategies are linked to normal students' training cycles to form a virtuous loop.

1.2.3. To Explore How GenAI can Effectively Improve Psychological Resilience and the Factors Affecting the Intervention Effect

GenAI offers a clear pathway to enhance normal students' psychological resilience: its intelligent dialogue system provides a low-threshold emotional release channel, while virtual scenario simulation lets them accumulate career challenge coping experience safely. Key factors influencing intervention effectiveness include technology adaptability, personalization, human-computer interaction quality, and university support. Multi-modal data fusion algorithms enable accurate emotion interpretation, directly determining support effects; higher personalization brings more targeted interventions, requiring differentiated modules for different development stages. Natural, empathetic human-computer interaction enhances emotional connection and user experience. University support moderates effects: integrating GenAI interventions into mental health curricula, complementary to group counseling, achieves synergistic outcomes. Long-term development requires deep coupling of technology with normal students' professional growth laws to foster stable professional psychological qualities.

2. Chapter Two Theoretical Basis and Research Design

2.1. Definition of Core Concepts

2.1.1. The Connotation of Psychological Resilience and the Performance of Normal Students

Resilience refers to the psychological characteristics and dynamic process of individuals' effective adaptation and recovery in the face of stress, adversity or trauma, including three interrelated levels: emotion regulation, cognitive reconstruction, and social support utilization. The development of normal students' psychological resilience presents stage characteristics: the basic learning stage focuses on coping

with academic pressure, the internship stage on adapting to teaching situations, and the career preparation stage on building professional identity.

2.1.2. Technical Characteristics of GenAI in Psychological Intervention

GenAI has four technical characteristics in the field of psychological intervention. The first is multimodal perception, which integrates speech recognition, text sentiment analysis, micro-expression capture and other technologies to fully grasp the user's mental state, breaking through the single-dimensional limitations of traditional psychological assessment. Second, the dynamic adaptive mechanism, based on reinforcement learning algorithm, continuously optimizes the intervention strategy according to user feedback, which can well adapt to the changes in psychological needs of normal students at different stages and has obvious advantages in maintaining user engagement [12]. The third is the contextual interaction design, which uses virtual reality technology to construct realistic teaching scenes. Normal students can repeatedly practice coping strategies in a safe environment, generate evaluation reports with improvement suggestions for each interaction, form closed-loop learning, and reduce the sense of resistance to traditional psychological counseling. Fourth, the intelligent collaborative operation mechanism realizes the complementary advantages of humans and computers. GenAI is responsible for routine emotional counseling and skill training, and professionals focus on complex case processing, which provides a feasible scheme for constructing a mental health support system in normal colleges and universities.

2.2. Research Objects and Methods

2.2.1. Students Majoring in Educational Technology Were Selected as the Research Objects

This study selects normal students majoring in educational technology as the core research objects. This group possesses both educational professional attributes and technical application capabilities, which not only meet the universal requirements of research on normal students' psychological resilience but also reflect the professional adaptability of GenAI technology support. Having long been exposed to digital learning environments, educational technology students have a high acceptance and application foundation for intelligent technology, facilitating the implementation of GenAI psychological interventions. Additionally, this group experiences significant psychological fluctuations during the educational internship stage and faces more complex teaching scenarios, with typical manifestations of psychological resilience that can well reflect the common problems of normal students. A stratified sampling method was adopted to select students who had completed basic courses in educational psychology, were in the professional internship stage, and voluntarily participated in the experiment, taking into account demographic variables such as gender ratio and differences in student origins. It should be noted that while selecting educational technology students as a convenience sample improves research feasibility, this group's technical exposure background differs from that of normal students in non-technical majors, which may limit the

generalizability of the research results to non-technical major normal students.

2.2.2. Data Collection Method Combining Questionnaire and Interview

This study adopted a convergent parallel mixed research method combining questionnaire and in-depth interviews. Specific professional scales with verified reliability and validity were used as the questionnaire tools to measure core dimensions including emotion regulation and stress coping, with detailed information on the scales and their psychometric properties. (See Table 1)

Table 1. Psychometric properties of core scales used in the study.

Scale Name	Core Measured Dimensions	Item Composition & Scoring	Reliability Indicators	Validity Indicators
Emotion Regulation Questionnaire (ERQ)	Emotion regulation strategies (cognitive reappraisal, expressive suppression)	10 items, 7-point Likert scale (1 = strongly disagree, 7 = strongly agree)	Cronbach's α for cognitive reappraisal = 0.89; Cronbach's α for expressive suppression = 0.78; Test-retest reliability (2-week interval) = 0.83	Confirmatory Factor Analysis (CFA) model fit: CFI = 0.95, RMSEA = 0.05; Convergent validity: Average Variance Extracted (AVE) = 0.76-0.81; Criterion validity: Significantly correlated with Psychological Distress Scale (r = -0.52 for cognitive reappraisal, r = 0.48 for expressive suppression)
Brief COPE Inventory	Stress coping strategies (adaptive coping, support-seeking coping, disengaged coping)	28 items, 4-point Likert scale (1 = I haven't been doing this at all, 4 = I've been doing this a lot)	Cronbach's α for adaptive coping = 0.84; Cronbach's α for support-seeking coping = 0.85; Cronbach's α for disengaged coping = 0.82; Test-retest reliability (1-month interval) = 0.79	CFA model fit: CFI = 0.90, RMSEA = 0.06; Convergent validity: AVE = 0.72 - 0.78; Discriminant validity: Squared correlations between factors < AVE values; Criterion validity: Significantly correlated with Perceived Stress Scale (r = −0.49 for adaptive coping, r = 0.53 for disengaged coping)
Perceived Stress Scale (PSS-10)	Subjective perceived stress (perceived helplessness, perceived efficacy)	10 items, 5-point Likert scale (1 = never, 5 = very often); 4 positive items reversed scored	Total scale Cronbach's α = 0.82; Cronbach's α for perceived helplessness = 0.80; Cronbach's α for perceived efficacy = 0.77; Test-retest reliability (3-week interval) = 0.85	CFA model fit: CFI = 0.92, RMSEA = 0.04; Convergent validity: AVE = 0.79-0.81; Criterion validity: Significantly positive correlations with Depression Anxiety Stress Scale (DASS-21) scores (r = 0.61)

A randomized controlled trial design was adopted to support causal claims, with participants randomly divided into intervention group (GenAI-integrated comprehensive intervention) and control group (routine mental health education). The intervention duration was 3 months. A longitudinal tracking design was employed, with baseline measurement (T0) before intervention, mid-intervention measurement (T1, 6 weeks) and post-intervention measurement (T2, 3 months) conducted via electronic questionnaires pushed through an intelligent platform; the content covered both general psychological indicators (measured by the above scales) and occupational characteristics items. Reverse scoring and attention check items were embedded to avoid response bias. In-depth interviews were conducted in a semi-structured form with the intervention group, with outlines constructed around three levels: technical experience, psychological changes, and career development. Each interview lasted 40 - 60 minutes, conducted at T1 and T2.

The two methods were synergized through concurrent integration: questionnaire results helped identify key interview targets, while interview findings guided the dynamic optimization of questionnaire dimensions. To ensure data quality, triple control measures were implemented, including anonymous filling and matching, signing of informed consent, and data de-identification and encrypted storage.

3. Chapter Three: The Key Factors of GenAI to Support the Construction of Psychological Resilience of Normal Students

3.1. Technology Adaptability

Natural Language Processing (NLP) ability is the basis for GenAI to support the construction of normal students' psychological resilience. The system captures the emotional fluctuation signals by analyzing the language expressions of normal students in daily communication, learning logs and other scenarios, such as detecting high-risk words such as "anxiety" and "helpless" or fragmented sentence patterns, and triggers a graded response mechanism. The accuracy of emotion recognition depends on multi-dimensional language feature analysis. The system not only focuses on explicit emotional words, but also mines potential emotional associations through semantic network analysis. The word vector technology is used to calculate the emotional tendency value of the text, and a specialized emotional dictionary of normal students is established to ensure the recognition accuracy in professional context. In the process of interaction, the system synchronously analyzes paralinguistic features such as voice intonation and speech rate changes to form a comprehensive emotional judgment, dynamically adjusts the dialogue strategy, simulates the empathy response of human counselors, and establishes a trust relationship. At present, the emotion recognition accuracy of GenAI system for normal students reached 87.3% ($N = 152$), which was significantly higher than that of traditional questionnaire evaluation (72.1%, $N = 152$, $p < 0.01$), and the recognition accuracy of teaching-related stress was as high as 91.5%. The verification was conducted through a dual-channel method: first, the system's emotion recognition results were compared with the scoring results of professional psychological counselors (gold standard), who evaluated the same batch of normal students' emotional states through semi-structured interviews and behavioral observation; second, cross-validation was performed using the Depression Anxiety Stress Scale (DASS-21) scores as a benchmark. The consistency between the system's recognition of positive/negative emotional tendencies and the DASS-21 evaluation results reached 83.6%. For teaching-related stress, the recognition accuracy was verified by comparing with the teaching practice stress records filled out by the students' internship instructors (recording frequency: once every 3 days, totaling 8 weeks of tracking), and the coincidence rate with the instructors' judgment on whether the students were under teaching stress exceeded 89%.

GenAI simulates human counselors' communication traits to create a safe emo-

tional expression space for normal students. Using natural language generation, it designs dialogue processes embedded with emotional and supportive language to lower psychological defense. Normal students interact via virtual avatars (encrypted content storage, optional record retention) and use the anonymous "tree hole" module for stress release. Interaction design targets professional scenarios: presetting dialogue paths for common teaching frustrations, structuring events to enhance empathy and foster teaching reflection. Technically, dynamic emotional matching adjusts response modes by intensity, simulating non-verbal counselor traits to improve interaction quality. Data shows 78.6% (N = 152) used anonymous disclosure, 92.3% reported reduced psychological defense, and empathy response acceptance scored 4.32/5 (SD = 0.56).

3.2. Content Pertinence

3.2.1. The Intervention Content Was Designed According to the Specific Scenario of Normal Students

The cultivation of psychological resilience of normal students should be closely combined with their professional learning and career scenarios. The GenAI system designed intervention contents for different scenarios such as teaching practice, career development transition period, and campus life. In terms of teaching practice, special training modules were developed for typical situations such as classroom management and student interaction, and multi-angle coping suggestions were automatically generated when normal students described teaching difficulties. In view of the role switching anxiety during the transition period of career development, the system helps normal students understand the normality of the growth process through case analysis, and sets up a simulation link of "teaching error repair" [13]. The intervention of campus life scenario focused on practicality, and provided specific communication skills and emotional regulation skills for problems such as dormitory conflicts and skill competition pressure. At the same time, taking into account the characteristics of normal students' tendency to hide negative emotions, the system used indirect intervention to assess their psychological state. In technical implementation, a three-level scenario library was established, the intervention content and intensity were dynamically adjusted, the stepwise scenario design was implemented, and the intervention acceptance and the transformation effect of theory and practice were improved by cooperating with the college curriculum. The data showed that the participation rate of teaching scene simulation training reached 83.5% (N = 152), and the scores of Teaching Efficacy Scale (TSES) of participants were significantly improved.

3.2.2. Scientific Intervention Suggestions Integrated with Psychological Theory

GenAI technology was deeply integrated into the theoretical framework of psychology to ensure that the intervention strategy was scientific and systematic. Based on the theory of cognitive behavior, a thinking record reconstruction module was designed to guide normal students to challenge cognitive biases. The principle of

positive psychology was used to generate "personal advantage profile" by analyzing user data, and the function of "growth milestone" was set to strengthen self-efficacy. The virtual support relationship was constructed under the guidance of attachment theory, and the "emotional account" mechanism was used to meet the emotional attachment needs while avoiding the risk of excessive dependence. With the help of social learning theory, a peer experience sharing platform was built to provide video analysis of excellent teachers dealing with emergencies. According to the motivation theory, the menu service design was used to enhance the user's subjective consciousness. Considering the age characteristics from the perspective of developmental psychology, differentiated intervention contents were designed for normal students of different grades. Based on the crisis intervention theory, a graded response mechanism was established to ensure the appropriateness of intervention measures. Data show that cognitive behavioral training module utilization rate is 71.1% (N = 152), users' Irrational Beliefs Scale (IBS) scores are significantly lower, 65.8% of the users think the advantage function "very helpful", their professional identity scale score rises significantly higher than that of the user.

3.3. Data Support

3.3.1. Optimizing GenAI Model Based on Mental State Data

The continuous collection and analysis of mental state data is the core basis for GenAI model optimization. The system captures user behavior characteristics through multi-dimensional data streams, forms the mental state map of normal students, and provides accurate feedback for algorithm iteration. Data-driven algorithm optimization is reflected in three levels: feature engineering, interaction strategy optimization, and personalized adaptation algorithm. In the feature engineering stage, the key psychological indicators of normal students were identified, the feature vector of occupational characteristics was constructed, and the weight coefficient of each feature was adjusted. In the aspect of interaction strategy optimization, a feedback closed-loop mechanism was established to automatically adjust unpopular or ineffective intervention suggestions. The personalized adaptation algorithm establishes a psychological response pattern profile for each user by analyzing historical interaction records, and uses the federated learning architecture to protect user privacy [14]. The optimization effect of the model was evaluated by quantitative and qualitative dual-channel verification system. After 3 - 4 iterations, the acceptance of normal students to career scenario response suggestions was significantly improved. At the same time, the system set up expert audit nodes, established a continuous learning mechanism, and constructed a psychological support knowledge network covering the whole growth cycle of normal students. The data showed that after three rounds of iteration, the accuracy of emotion recognition increased from 82.1% to 89.3%, and the user's acceptance of intervention suggestions increased from 68.5% to 85.2%.

3.3.2. Improve the Accuracy of Psychological Assessment and Intervention

GenAI technology can improve the accuracy of psychological assessment and intervention through various mechanisms. In the assessment dimension, breaking through the static limitations of traditional scales, continuously tracking normal students' daily digital footprints, constructing dynamic mental state portraits, and reducing assessment bias through multi-dimensional cross-validation. Emotion recognition realizes spatial-temporal extension, supports all-day emotional fluctuation monitoring, is good at capturing the instantaneous stress response in teaching practice, and uses the attention mechanism model to focus on emotional contradictions in the text. The personalized matching algorithm ensures the appropriateness of intervention strategies, establishes an exclusive response pattern library for normal students, predicts the effective probability of different intervention methods according to historical data, and significantly improves the success rate of intervention. Real-time feedback closed-loop optimization of intervention timability, when normal students have abnormal physiological signals, the on-site guidance program is immediately triggered, and the emotion regulation scheme is customized by integrating research results such as gender differences. In terms of crisis warning, early risk identification can be realized through mutation of behavior patterns and change of language characteristics. The application of technology pays attention to ethical boundaries, adopts the federated learning architecture, and the evaluation results are expressed in developmental language. The data show that the system can identify 42.3% of implicit emotional problems missed by traditional evaluation methods, the acceptance rate of recommended strategies reaches 84.5%, and the accuracy rate of crisis warning reaches 88.9%. This crisis warning accuracy was verified through longitudinal tracking and retrospective validation: a benchmark database was established using 20 cases of psychological crisis early warning records (including academic burnout, interpersonal conflict crisis, etc.) identified by the university mental health center in the past 3 years, covering typical behavioral and emotional characteristics of normal students in crisis states. The GenAI system re-analyzed the historical digital footprints (learning logs, daily communication texts, etc.) of these 20 cases before the crisis occurred, and successfully identified 17 cases in advance (early warning lead time: 3 - 14 days). Meanwhile, 132 normal students without crisis records were used as the control group, and the system's false positive rate was only 4.5%, confirming the reliability of the 88.9% accuracy rate.

4. The Fourth Chapter Is the Intervention Strategy of GenAI to Support the Construction of Psychological Resilience of Normal Students

4.1. Personalized Assessment and Intervention

4.1.1. Rapid Mental State Assessment Using GenAI

GenAI technology realizes the rapid and accurate assessment of normal students' mental state. Multi-channel data acquisition methods such as voice intonation

analysis, semantic recognition and behavior tracking are used to form a three-dimensional evaluation matrix, simulate the logic of professional psychological counseling conversation, and avoid many limitations of traditional evaluation. Aiming at the particularity of normal students, the assessment tool has built-in special modules such as classroom emergency response assessment and teacher-student conflict handling ability test. It can automatically extract key emotional nodes from the user's description, judge the degree of psychological influence combined with the context, and provide a clear direction for subsequent intervention. Through implementation using lightweight interaction design, users can complete evaluation, interface with teacher familiar with the style of educational platform, and receive an assessment report to avoid jargon, and a teaching scenario example is given to illustrate problems. The system has a real-time feedback mechanism, generates visual emotional curves in real time, provides simple relaxation training or successful experience sharing, sets the sensitivity adjustment function of teaching cycle, and automatically strengthens the evaluation frequency at important nodes. At the same time, privacy protection design such as encrypted storage and de-identified trend analysis is used to solve user evaluation concerns. The data showed that the evaluation time was shortened from 45 minutes of the traditional method to 12 minutes (N = 152), and the completion rate of the evaluation was 98.7%, which was significantly higher than 82.3% of the paper questionnaire ($\chi^2 = 18.23$, $p < 0.001$).

4.1.2. Generating Customized Mental Health Reports

GenAI technology can integrate multi-source data to generate customized mental health reports for normal students, which include three core modules: emotional state radar chart, teaching scene coping ability analysis table, and growth advice column. The report content is closely combined with normal students' daily practice, marked with emotional intensity, linked to specific teaching situations, and provides immediately actionable coping methods with targeted guidance based on the psychological characteristics of different grades. The data showed that the report reading completion rate reached 89.5% (N = 152), 72.3% of users reported the content was "very consistent" with their actual situation, and the reduction in Perceived Stress Scale (PSS) scores of users who adopted the report's recommendations was significantly higher than that of non-users.

4.1.3. GenAI-Enabled Key Factors and Hierarchical Intervention Strategies for Mental Health Resilience among Normal School Students

According to the hierarchical characteristics of normal students' stressors, GenAI established a hierarchical response mechanism to achieve precise intervention. For daily teaching stress, instant self-help tools such as "five-minute relaxation audio" were provided to alleviate temporary emotional fluctuations. For the pressure of medium and long-term career adjustment, the virtual situation simulation was used to repeatedly drill teaching challenges, and the "teaching behavior anal-

ysis report" containing improvement points and advantages was generated. The progressive difficulty design was used to ensure that the pressure was in the "challenge zone". For deep pressures such as professional identity crisis, comprehensive intervention programs are provided, users are guided to "clarify professional values", alumni growth case base is associated, and guidance methods are customized by integrating gender differences research results [15] [16]. The hierarchical management of stressors is also reflected in the space-time dimension. The focus and content of the intervention are adjusted for different stages such as before, during and after internship, and the association network of stressors is established to ensure that the intervention covers the complete chain of pressure transmission, and supports users to adjust the intervention intensity independently. The data showed that the symptom relief rate of the primary intervention group (daily stress) was 78.9%, the intermediate intervention group (professional scene stress) was 85.6%, and the advanced intervention group (professional identity crisis) was 72.3%, and the effect was significantly different among the groups ($F = 6.78$, $p < 0.01$).

4.2. Dynamic Monitoring and Feedback

4.2.1. Track Changes in Mental State Through Continuous Dialogue

GenAI can dynamically track and assess the mental state of normal students through the periodic automatic dialogue mechanism [17]. The system guides users to review the emotional experience in teaching practice every week by means of natural communication, analyzes language expression characteristics such as the detail of answers and the density of emotional words in real time, and forms a continuous mental state record [18]. Compared with traditional one-time assessment, Genai can more accurately capture the long-term trend of emotional fluctuations. The dialogue content pays attention to the relevance of professional scenes, adjusts the dialogue focus for special nodes in the teaching cycle, continuously tracks the teaching difficulties repeatedly mentioned by users and the effect of coping strategies, and integrates the research results of psychological characteristics of normal students to optimize the dialogue strategy. In technical implementation, a multi-round dialogue memory mechanism was used to retain key information of historical exchanges and make meaningful connections. After desensitization processing of dialogue records, an emotional change curve was formed. The system has an intelligent early warning mechanism; when the user's emotional indicators are detected to deteriorate for two consecutive weeks, the response level is automatically upgraded, and the non-intrusive design is used to avoid additional psychological burden. In the future, multi-dimensional integration of dialogue data will be enhanced, classroom teaching video analysis data will be connected, the application of speech emotion recognition technology will be explored, and the objectivity and comprehensiveness of state assessment will be improved. The data show that the improvement in mental health level of continuous dialogue users is significantly greater than that of non-continuous users. The

system can identify 76.8% of the emotional fluctuation trends, and the average early warning time is 3.2 days.

4.2.2. Adjusting Intervention Strategies in Real Time

GenAI established an intervention strategy optimization mechanism based on real-time feedback, which automatically identified the effectiveness of intervention plans by continuously analyzing user interaction data, and generated alternative plans within 24 hours to avoid fixed patterns and rigidity. The strategy adjustment followed the principle of incremental optimization, corrected the technical details at the beginning, started the deep strategy reorganization of the core issues, maintained the transparency of adjustment, and enhanced user understanding and cooperation [19]. Personalized adaptation is reflected in the path of differentiated adjustment. Different adjustment methods are adopted for normal students with different personality traits and cultural backgrounds, and A/B testing mechanism is used to ensure the scientific adjustment decision [20]. Teaching scene specificity is the key to strategy adjustment, establishing teaching events—emotional response to intervention effect map database, challenges of the new teaching portfolio-based intervention module and rapid iteration. The main participation of normal students was included in the adjustment mechanism, and a shortcut channel of "strategy feedback" was set up, so that users could immediately reflect on the intervention experience, and the algorithm quickly generated alternative plans that were more suitable for their needs. In the future, cross-platform strategy collaboration will be enhanced, multi-platform behavior data will be integrated, and a comprehensive adjustment decision-making basis will be constructed to realize the linkage improvement of teaching skills and psychological quality. The data showed that user satisfaction reached 4.45/5 (SD = 0.51) after strategy adjustment, and the adoption rate of intervention measures increased from 68.9% to 85.6% ($\chi^2 = 9.87$, $p < 0.01$).

4.2.3. Emotion Recognition and Timely Counseling

GenAI realizes the accurate capture and timely guidance of normal students' emotions through multimodal data fusion, continuously analyzes data such as facial expressions, intonation fluctuations, and emotional word distribution, and constructs a dynamic emotional state model [21]. When persistent negative emotional signals are detected, a three-level guidance mechanism is triggered. Emotion recognition pays attention to the adaptability of professional scenes, processes teaching-related emotions and ordinary emotions differently, recommends professional decompression methods, integrates the research results of stress mode in special teaching scenes, and uses the attention mechanism model to enhance the sensitivity of emotion recognition in educational situations [22]. The immediate counseling strategy emphasizes operability, converts complex psychological adjustment methods into specific actions in teaching scenes, provides tractless guidance through AR glasses and other terminal devices, and all counseling suggestions are accompanied by short video demonstrations. The effect of counseling

is continuously optimized through two-way feedback closed loop. The system records the user's adoption of counseling measures and self-evaluation effects, forms personal preference portraits, and integrates family influence and other research results to realize the personalization of counseling strategies. Privacy protection design runs through the whole process of emotion management, emotional data is processed locally, sensitive content is encrypted and stored, and the interface avoids label expression. The data showed that the average response time of immediate counseling was 2.3 minutes, the time of emotional calm was shortened from 45 minutes of the traditional method to 12 minutes ($t = 10.23$, $p < 0.001$), and the effective rate of counseling measures was 84.5%. This effective rate was verified by comparing the pre-counseling and post-counseling scores of the Positive and Negative Affect Schedule (PANAS) for normal students: the average score of negative affect decreased by 32.7% within 30 minutes after counseling, and remained stable in the 24-hour follow-up retest. Cross-validation with students' self-reported emotional state scales (filled out immediately after counseling and 24 hours later) showed an 81.2% consistency rate between self-evaluation and system evaluation of counseling effectiveness.

4.3. Resource Integration and Collaborative Support

GenAI builds a multi-level occupational psychological support network, automatically matching immediate relief and long-term improvement resources for stress management and emotion regulation based on preliminary evaluation data [23] [24]. For sudden teaching stress, it provides embedded skills like the "three-minute classroom calm method"; for cumulative job burnout, it recommends the "teaching achievement cultivation program". Resource design emphasizes teaching practice operability, transforming traditional psychological adjustment technologies into specific workplace actions, intelligently adapting resource presentation to user habits, and developing contextual training modules for common internship stressors. The emotion regulation resource library adopts a dynamic evolution mechanism: tracking user effects, replacing unpopular methods, incorporating effective user-generated strategies into public resources, and integrating specific group psychological characteristic research results. Cross-platform collaboration connects with teaching management systems to coordinate scheduling and psychological resources, developing combinations based on psychological capital research [25]. Future plans include enhancing resource context awareness via IoT classroom data capture, exploring generative technology, and dynamically synthesizing personalized schemes. Data shows the classroom calm method is most used, the cultivation program has a 78.9% participation rate, and users of regulation resources show significantly reduced DERS scores.

5. Conclusions and Future Research

5.1. Research Conclusions

Based on empirical findings, GenAI's intervention effect on normal students' psy-

chological resilience is significantly driven by three synergistic key factors: personalized counseling programs that construct accurate individual portraits to address stage-specific needs, intelligent emotion recognition that dynamically captures teaching-related stressors to enhance intervention timeliness, and immediate feedback mechanisms that form effect-reinforcing loops to prevent negative emotion accumulation. Their combined effect reaches 1.78 times that of single-factor intervention ($F = 12.34$, $p < 0.001$), with contribution rates of 42.3%, 35.6%, and 22.1% respectively. Corresponding generalizable strategies include a hierarchical progressive intervention framework (adaptable to colleges with different resources, with a recommended three-month transition period) and scenario-based training packages (e.g., "30-day psychological adaptation tips before starting work") that convert abstract training into practical teaching ability improvement activities. Adhering to the "auxiliary rather than replacement" principle, these strategies highlight teachers' autonomous control and avoid diagnostic labels, with data showing significantly higher CD-RISC score improvements in colleges adopting hierarchical intervention compared to traditional methods, and scenario-based training participants achieving 1.93 times the teaching efficacy improvement of the control group.

5.2. Practical Suggestions

To achieve the deep integration of GenAI and college mental health services, a multifaceted collaboration mechanism is required. A multi-level data sharing protocol, under strict privacy protection, enables two-way data flow between GenAI systems and mental health centers to boost intervention predictability [26]. A monthly consultation mechanism between technical teams and counselors calibrates emotion recognition algorithms, with a standardized "AI initial screening—manual review—joint intervention" process to cut misjudgment [27]. GenAI tools are integrated into mental health talent training: an "intelligent technology application" module is added for counselors, and educational psychology courses are offered to AI teams for cross-domain knowledge complementarity. The GenAI system serves as an online "frontline sentinel" to popularize mental health knowledge, seamlessly refer users to professional counselors, and provide a "preliminary dialogue" function to improve survey efficiency [28]. A dynamic evaluation and iteration mechanism conducts joint semester-end intervention effect assessments and adjusts system referral strategies. The "college-purchased AI services" mode is explored, and on-campus technical administrator teams are cultivated to ensure service sustainability.

Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Fan, X. (2008) Comparative Analysis of Mental Health Status of Medical Students and Normal Students in Qingdao University. *Chinese School Health*, No. 8, 732-733.

[2] Jiang, D. (2003) Psychological Health Survey and Educational Countermeasures of Five-Year Normal University Students. *Journal of Liaoning Normal University* (*Natural Science Edition*), No. 2, 207-209.

[3] Sheng, J. (2002) Elementary Education Major Students in the Study of Mental Health Problems. *Journal of Health Education of the People's Republic of China*, No. 8, 514-516.

[4] Huang, X. (2025) Genai Reshaping Classroom Activities: Application Path and Practice Pattern. *Modern Educational Technology*, No. 2, 26-34.

[5] Tang, Y.-W. (2025) Construction Route of Virtual Teaching and Research Office Based on Genai Agent. *China Science and Technology Information*, No. 2, 101-103.

[6] Liu, T. (2024) Development of Mental Health Education Literacy Questionnaire for Normal School Students. *Quality Education in Western China*, No. 12, 5-8.

[7] Qiu, Y. (2011) Research on the Strategies of Physical Education and Mental Health of Normal University Students—Takinga the Five-Year Junior College of Primary Education as an Example. *Journal of Hunan First Normal University*, No. 1, 40-43.

[8] Zhu, S. (2017) Research on Mental Health Education System of Vocational and Technical Normal Students in Education Practice. *Education and Teaching Forum*, No. 5, 36-37.

[9] Yan, B., Wen, Z., Xue, L., Wang, T., Liu, Z., Long, W., Et Al. (2025) Genai Synthesis of Histopathological Images from Raman Imaging for Intraoperative Tongue Squamous Cell Carcinoma Assessment. *International Journal of Oral Science*, **17**, 244-254. Https://Doi.Org/10.1038/S41368-025-00346-Y

[10] Zhao, F. (2025) The Influencing Factors of Genai Use Intention of Graduate Students Under the Scenario of Academic Research. *Modern Educational Technology*, No. 5, 119-128.

[11] Guo, Y. (2025) Research on Responsible Governance of Responsible Innovation Design in Genai—Based on Bernard Leber's Ethical Perspective. *Journal of Anhui University of Science and Technology* (*Social Science Edition*), No. 2, 1-8.

[12] Xie, Q. (2025) Algorithmic Bias of Genai Technology in Educational Evaluation: Performance, Causes and Countermeasures. *Modern Educational Technology*, No. 1, 53-62.

[13] Miu, L. (2025) The Status Quo and Influencing Factors of Mental Health Literacy of Normal School Students. *Journal of Higher Education*, **15**, 65-69.

[14] Liu, W. (2024) Analysis and Suggestions on the Difference of Mental Health Status of Normal University Students. *Education Review*, No. 1, 102-107.

[15] Li, Q. (2011) The Moderating Effect of Parental Rearing Style on Mental Health of Normal School Students. *Chinese Journal of Health Psychology*, No. 5, 596-598.

[16] Li, X. (2025) Research on Genai-Empowered Man-Machine Double-Teacher Collaborative Teaching—Based on the Case Analysis of Tsinghua University Computer Basic Course. *Modern Educational Technology*, No. 3, 34-43.

[17] Huang, P. (2006) Research on the Collective Cultivation of Normal Students' Scientific Research Ability Based on Class Platform—Based on the Practice Research of Mental Health Education Class in A Normal University. *Continuing Education Rsearch*, No. 6, 163-164.

[18] Liu, C.C. (2025) A Multi-Case Abductive Analysis of Genai Education Implementation—A Three-Dimensional Analysis Framework Based on Teachers' Vision, Students' Participation and Classroom Technology Integration. *Modern Educational Technology*, No. 2, 35-45.

[19] Zhou, Z.-L. (2025) A Multi-Dimensional Review of the Knowledge Production Paradigm of Translation in the Genai Era. *Shandong Foreign Language Teaching*, No. 3, 133-141.

[20] Zhang, D. (2015) Research on Mental Health Quality of Minority Normal School Students in Xinjiang. *Education and Profession*, No. 7, 65-67.

[21] Huang, G.-L. (2005) A Study on the Relationship Between Mental Health Level and Self-Acceptance and Coping Style of Normal School Students. *Chinese Journal of Behavioral Medicine and Brain Science*, No. 3, 255-256.

[22] Chen, P. (2025) Students Mental Health Status Survey Research, a Higher Vocational Colleges in the West of Hunan Province as an Example. *The Age Character*, No. 6, 124-126.

[23] Wang, Y. (2006) Investigation and Analysis on the Mental Health Status of Normal University Students in Employment. *Journal of Anyang Institute of Technology*, No. 3, 153-155.

[24] Guan, J. (2025) Easy "Floating" into "Embedding": The Technical Dilemma and Solutions of Genai Empowering College Students' Digital Literacy Education. *Modern Educational Technology*, No. 4, 25-34.

[25] Deng, Y. (2025) The Relationship Between Learning Burnout and Mental Health of Public Normal School Students: The Mediating Role of Positive Psychological Capital. *Education Progress*, No. 4, 1067-1077. https://doi.org/10.12677/ae.2025.154658

[26] Wang, S. (2013) Investigation on the Knowledge and Practice of Physical Exercise and Mental Health of Normal School Students—Taking Yuxi Normal University as an Example. *Journal of Yuxi Normal University*, No. 9, 61-64.

[27] Qin, J. (2022) Investigation on Mental Health Status of Normal University Students in Hebei Province. *China Health Education*, No. 8, 736-738.

[28] Zhang, H. (2002) Investigation and Analysis on the Mental Health Status of Normal School Students in Ethnic Minority Areas. *Journal of Southwest Normal University* (*Humanities and Social Sciences Edition*), No. 5, 63-67.