RESEARCH ON REFLECTIVE PRACTICAL MUSIC EDUCATION FOR CHILDREN WITH CONGENITAL MEMORY IMPAIRMENT

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SUMMARY

Background: Reflective practical education is a practical teaching based on summarizing educational problems and considering children’s actual situation and existing teaching forms. This educational model can achieve ideal teaching results. The specific functions of reflective practical teaching are as follows, which can stimulate children’s innovative consciousness, improve children’s spiritual literacy and increase children’s learning enthusiasm.

Subjects and methods: 400 children with congenital memory impairment were selected as the research object to analyze the effect of reflective practical music education on children with congenital memory impairment. The improvement of children’s memory impairment was analyzed by K-means clustering algorithm for grade evaluation. Congenital memory impairment is divided into six types: memory enhancement, memory decline, forgetting, misconstruction, fiction and latent memory, and four reflective practical music education strategies: clarifying the design form of music teaching, determining reflective teaching objectives, innovating teaching system and expanding knowledge content, which are expressed by strategy1-strategy4 respectively. The evaluation grade quantifies the degree of improvement through five grades 1-5. 1 indicates no improvement, 2 indicates slight improvement, 3 indicates improvement, 4 indicates significant improvement and 5 indicates serious improvement.

Results: The four reflective practical music education strategies can improve six kinds of children’s memory disorders, especially clarify the form of music teaching design and determine the reflective teaching objectives.

Conclusions: Four reflective practical music education strategies can improve six kinds of children’s memory disorders, especially clarifying the form of music teaching design and determining the reflective teaching goal.

Key words: congenital memory impairment - children - reflective music education

INTRODUCTION

Congenital memory impairment refers to the impairment of related functions and even disorders caused by the imperfect development of brain tissue in the early stage of hair and brain development (Fernández-Alarcón 2020). Acquired memory impairment refers to the patient’s memory function is affected by trauma, or the brain center is temporarily damaged due to external stimulation, which will lead to the operation failure of brain tissue in the memory area (Perrotta 2020). According to different clinical manifestations, memory impairment can be divided into six types: memory enhancement, memory decline, forgetting, misconstruction, fiction and latent memory. Congenital memory impairment in children is a common disease that puzzles clinicians (Hieu 2020). At present, there is no active and effective treatment. Some studies believe that reflective practical music education can improve children’s congenital memory impairment.

Hazen m and other scholars believe that memory impairment refers to the state that individuals cannot recall and remember information and knowledge, which may be temporary or permanent memory impairment caused by pathological, physiological, situational and other reasons (Hazan 2020). Yilai and other researchers believe that conductive hearing loss is the damage caused by the mechanical transmission of sound waves through the outer and middle ears. Memory includes memory, retention and reproduction, which is closely related to neuropsychological function. According to neurophysiological and biochemical research, memory can be divided into three types: common sense memory, short-term memory and instantaneous memory (Yilai 2019). Akhr Mendon and other researchers analyzed the mechanism of neurological damage, and the research results provided help for the treatment of patients with clinical neurological dysfunction (Mendoça & Lima 2018).

Memory impairment refers to a state in which an individual is unable to recall and remember information and knowledge, which may be a temporary or permanent memory impairment caused by pathological, physiological, situational and other reasons. Memory includes memorization, retention and reproduction, which is closely related to neuropsychological function. According to neurophysiological and biochemical research, memory can be divided into three types: common sense memory, short-term memory and instantaneous memory (Hasegawa 2018). Memory and forgetting complement each other, and forgetting has selectivity and time regularity. According to the causes, memory impairment can be divided into congenital memory impairment and acquired memory impairment (Wang 2018). Congenital memory impairment refers to the impairment of related functions and even disorders caused by the imperfect development of brain tissue in the early stage of hair and brain development. Acquired
memory impairment refers to that patients’ memory function is affected by trauma, or the brain center is temporarily damaged due to external stimulation, which will lead to the operation failure of brain tissue in the memory area. According to different clinical manifestations, memory impairment can be divided into six types: memory enhancement, memory decline, forgetting, misconception, fiction and latent memory. In clinical practice, memory enhancement can be manifested in that patients with hypomania have accelerated Association and never forget, and can recall the details of the past that cannot be recalled at ordinary times. At the same time, patients with depression also have a similar situation, mainly manifested in the deepening of memory of minor faults, but this symptom will disappear rapidly after the condition is relieved (Ren 2021). Memory impairment refers to the overall decline in memory in patients with brain organic mental disorder, which often occurs in patients with Alzheimer’s disease.

Forgetting refers to the inability to recall something or a certain experience, which can be divided into psychogenic forgetting, retrograde forgetting and anterograde forgetting. Psychogenic forgetting has the characteristics of selective forgetting, which usually occurs when encountering things or experiences that cause psychological pain. It can be divided into acute stress disorder and dissociative disorder (Szubielska 2019). Progressive amnesia and retrograde amnesia often occur in amnesia caused by old trauma (Perrotta 2019). Missing refers to the confusion or error of remembering the time or place when recalling the events, you have experienced (Ulrika 2019). Fiction means that patients forget their own experiences and replace and fill them with fictional stories. Implicit memory is also called distorted memory. Patients regard the experience they have seen or the experience of others as their own real experience.

The concept of “reflective practice” originated from Aristotle’s classification of knowledge. He divided all knowledge into three categories: theoretical knowledge, technical knowledge and reflective practical knowledge. What is theoretical knowledge, that is, the knowledge pursued for itself. This kind of knowledge is fixed and universal. Technical knowledge and reflective practical knowledge are carried out on the basis of theoretical knowledge and learned through practice (Miragaia 2021). The difference between the two lies in the different depth and application purpose in the process of pursuing and creating existing knowledge. For technical knowledge, it shows that when one starts a new plan action, he knows how to achieve his goal and what kind of goal to achieve (Su 2021). There is a linear relationship between action and result, which is not restricted by the external environment. On the contrary, reflective practical knowledge is a kind of knowledge applied to a certain situation in human society and politics. Generally, in this situation, it is impossible to know the exact result of their actions. Its process is not invariable and needs to be analyzed and examined by themselves. Therefore, reflective practical knowledge is very vulnerable to the changes of the external environment. Figure 1 refers to the significance of reflective practical education and the application of reflective practical music education.

Reflective practical music education is a teaching form to improve and optimize problems, which can improve patients to some extent. Taking children with congenital memory impairment as the research object, this study analyzes the effect of reflective practical music education on children with congenital memory impairment, in order to improve the memory function of children with congenital memory impairment.

**SUBJECTS AND METHODS**

**Study setting**

Reflective practical education is a practical teaching based on summarizing educational problems and considering children’s actual situation and existing teaching forms. This educational model can achieve...
ideal teaching results. The specific functions of reflective practical teaching are as follows, which can stimulate children’s innovative consciousness, improve children’s spiritual literacy and increase children’s learning enthusiasm (Miragaia et al. 2021; Su & Jiang 2021). The specific applications of music education combined with reflective practical teaching are as follows: clarify the design form of music teaching, determine the reflective teaching objectives, innovate the teaching system and expand the knowledge content. In order to reduce the influence of negative factors, instructional design is of great significance in the teaching process. Music teaching can not only improve their own quality, but also achieve the ideal design effect through reasonable teaching design. Reflective teaching can promote the improvement of children’s learning ability, but first of all, we need to clarify the teaching objectives and analyze the teaching content, and constantly expand the teaching field.

**Design**

In order to analyze the effect of reflective practical music education on children with congenital memory impairment, DAS data statistical analysis software and K-means clustering algorithm were used to analyze the improvement of children’s memory impairment for grade evaluation. The experimental period was 6 months. 400 children with congenital memory impairment were selected as the research object to analyze the effect of reflective practical music education on children with congenital memory impairment. The congenital memory impairment was divided into six types: memory enhancement, memory decline, forgetting, illusion, fiction and latent memory, as well as clarifying the design form of music teaching, determining reflective teaching objectives, innovating teaching system four reflective practical music education strategies for expanding knowledge content are represented by strategy1-strategy4 respectively. The evaluation grade quantifies the degree of improvement through five grades 1-5. 1 indicates no improvement, 2 indicates slight improvement, 3 indicates improvement, 4 indicates significant improvement and 5 indicates serious improvement. In order to avoid the interference of personal subjective influence on the results in the evaluation process, the average value of the research object is selected and the data after rounding is taken as the final result. Table 1 refers to the basic information of the research object.

**Table 1. Basic information of research objects**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Numerical value</th>
<th>Attribute</th>
<th>Numerical value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>195</td>
<td>Memory enhancement</td>
<td>41</td>
</tr>
<tr>
<td>Female</td>
<td>205</td>
<td>Memory loss</td>
<td>56</td>
</tr>
<tr>
<td>Age / year</td>
<td>10.02±6.56</td>
<td>Forget</td>
<td>71</td>
</tr>
<tr>
<td>Course of disease / days</td>
<td>56.02±11.23</td>
<td>Misconstruction</td>
<td>75</td>
</tr>
<tr>
<td>Latent memory</td>
<td>56</td>
<td>Fictitious</td>
<td>101</td>
</tr>
</tbody>
</table>

The comparison between count data groups was analyzed by independent sample t-test, and the data comparison at different time points was analyzed by repeated measurement variance test. \( P < 0.05 \) indicates that the gap has significant statistical difference, and \( P < 0.01 \) indicates that the gap has very significant statistical difference.

As a classical data mining algorithm, the core idea of K-means algorithm used in the research is to find the partition scheme of clusters, and finally minimize the overall error of the mean value of clusters. Clustering algorithm is a classification method of unsupervised learning. It divides the data without similar labels and disordered arrangement into fixed categories through data processing. This method can divide the samples with small difference and high similarity into the same category (cluster), and finally make all data samples be divided into different categories. Before clustering, select one sample point from all sample points as the center of the first stage clustering, and then put the rest of the data into the cluster with the shortest distance from the cluster center. Finally, the iterative method of constantly moving the center is used to divide the cluster. The similarity criterion of the algorithm is the distance between data, which indicates that the smaller the distance, the higher the similarity of data, and the greater the possibility of being divided into the same category. Although the algorithm steps of this method are simple and the processing effect is high and efficient, there are also the following problems. The algorithm is easy to fall into the local optimal solution and has a strong dependence on the initial conditions.

Since the parity of the original set data cannot be determined, it will be put into the group. This ensures that one set is the two closest data objects in the data set, eliminates the random uncertainty in classification, and shows the spatial distribution uniformity of cluster centers in the selection stage, so as to avoid the concentration of initial cluster centers. However, the algorithm is not suitable for dealing with discrete data, and has a good effect on continuous data. Therefore, a small amount of education time field data is selected for the training sample set. Given training \( W \), sample \( \{x(0), ..., x(m)\} \), where \( x(i) \in \mathbb{R}^k \). K-means algorithm is based on the sum of squares of minimum error, and its cost function is formula (1).

\[
W = \sum_{i} \sum_{n} n_i \left\| x(i) - u_n \right\|^2
\]
In formula (1), \( u_w \) refers to the category of the first sample. The value of \( r_m \) depends on whether the data \( x^{(i)} \) is classified as \( u_w \). If so, the value is 1. Otherwise, the value is 0.

The calculation formula of the criterion function is shown in formula (2).

\[
E = \sum_{i=1}^{k} \sum_{P=C_i} (P-m)^2 \tag{2}
\]

In formula (2), a point in all object spaces in the database is represented by \( P \), the mean value of cluster \( C_i \) is represented by \( m_i \), and the sum of square errors between each object and the corresponding cluster center is represented by \( E \). The calculation formula of probability \( T \) that the sample is selected as the cluster center is formula (3).

\[
T = B(x)^2 / \sum_{i=1}^{n} B(x)^2 \tag{3}
\]

In formula (3), \( B(x) \) refers to the similarity between data, which is calculated by various distance formulas. Euclidean distance calculation formula is adopted in the study.

### RESULTS

Table 2 shows the improvement effects of four reflective practical music education strategies on six kinds of children’s memory disorders after six months of the experiment. In the six types of memory enhancement, memory decline, forgetting, misconception, fiction and latent memory, it is clear that the improvement effect of music teaching design form is 4, 4, 5, 4, 5 and 4. Determine the improvement effect of reflective teaching objectives as 4, 5, 4, 5, 4 and 4. The improvement effect of innovative teaching system is 3, 4, 4, 4, 3, 3. The improvement effect of expanding knowledge content is 4, 3, 4, 3, 4, 3. The four reflective practical music education strategies can improve six kinds of children’s memory disorders, especially clarify the form of music teaching design and determine the reflective teaching objectives.

<table>
<thead>
<tr>
<th>Index</th>
<th>Strategy 1</th>
<th>Strategy 2</th>
<th>Strategy 3</th>
<th>Strategy 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory enhancement</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Memory loss</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Forget</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Misconstruction</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Fictitious</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Latent memory</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Figure 2 shows the improvement effect of music teaching design form on children’s memory impairment during the whole experiment. It can be seen from Figure 2 that after one month of reflective practical music teaching intervention, the influence values of memory enhancement, memory decline, forgetting, illusion, fiction and latent memory are 2, 2, 2, 3, 3 and 3 respectively. After 2 months of intervention, the influence values of memory enhancement, memory decline, forgetting, illusion, fiction and latent memory were 3, 3, 2, 4 and 3 respectively. After 6 months of intervention, the influence values of memory enhancement, memory decline, forgetting, illusion, fiction and latent memory were 4, 4, 4, 4, 5 and 4 respectively. With the increase of experimental time, the improvement effect of children’s memory impairment in six types was improved. Compared with before clarifying the form of music teaching design, the improvement effect after intervention for 1 month, 2 months and 6 months is higher. This further shows that clarifying the form of music teaching design can improve children’s memory impairment.
Children with memory impairment need to pay attention to the construction of family environment. A warm family atmosphere is more conducive to reduce pessimism, negativity and other emotions. Most scholars point out that depression and anxiety are also the main risk factors affecting the rehabilitation effect of children with memory impairment. Depression and anxiety will lead to pathological changes and atrophy in the amygdala, hippocampus and frontal lobe of the brain, change the structure and function of the central nervous system, and further aggravate negative emotions. The study found that children with memory impairment have depression and anxiety. Experts pointed out that it may be related to the patients’ great concern about the loss of work ability and poor self-care ability after their onset, whether there are sequelae in their future life, the economic situation of the family is very convenient and there will be greater psychological pressure. Therefore, in the process of patients’ early rehabilitation treatment, timely communication can help patients establish confidence, understand patients’ concerns, psychological counseling and emotional counseling, help patients and their families learn relevant knowledge of prognosis and methods of rehabilitation training, and help patients get out of depression and anxiety and establish a positive and optimistic attitude with the help of music relaxation method or game interaction. After a period of intervention through music education, children with memory impairment are more willing to communicate with medical staff or family members, and can actively express their emotions. In the process of treatment and rehabilitation of patients, good and professional spiritual communication, more company and care will be more helpful to the ability of patients to restore health and promote the rehabilitation of patients. The treatment of music education can effectively treat children with memory impairment. The analysis of the reasons is mainly reflected in two aspects. On the one hand, music therapy can significantly relax the spirit of patients, promote the improvement of physical immune function,
and then play the dual role of health care and treatment. On the other hand, music education therapy can directly affect the physiological and psychological effects, affect the brain stem and hypothalamus of patients, and then improve the function of cerebral cortex. In the rehabilitation treatment of schizophrenia, music therapy will play a very good auxiliary role, and this treatment method can be actively promoted in clinic. In the rehabilitation treatment of children’s memory impairment, music therapy will play a very good auxiliary role, and this treatment method can be actively promoted in clinic. The results of most scholars are consistent with the results of this study. The intervention program under reflective practical music education can improve the improvement rate of patients with memory impairment. Some scholars pointed out that psychologists and parents can choose a more appropriate way to intervene patients through medical cooperation, which is also their common responsibility. A few scholars pointed out that the intervention program under reflective practical music education has good clinical application value and can improve the cognitive ability of patients.

CONCLUSIONS

Children’s congenital memory impairment is directly related to their physical and mental health. Based on the analysis of congenital children’s memory impairment, this paper puts forward a music education strategy combined with reflective practical teaching, which is to clarify the design form of music teaching, determine the reflective teaching goal, innovate the teaching system and expand the knowledge content. The results show that the improvement effect of music teaching design is 4-5 in the six types of memory enhancement, memory decline, forgetting, misconstruction, fiction and latent memory. Determine the improvement effect of reflective teaching objectives as 4-5. The improvement effect of innovative teaching system is 3-4. The improvement effect of expanding knowledge content is 3-4. Four reflective practical music education strategies can improve six kinds of children’s memory disorders, especially clarifying the form of music teaching design and determining the reflective teaching goal.

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Conflict of interest: None to declare.

Reference

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ON THE CORRELATION BETWEEN JOB BURNOUT, MENTAL HEALTH AND PERSONALITY TRAITS OF COLLEGE PHYSICAL EDUCATION TEACHERS

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SUMMARY

Background: Job Burnout includes three parts: emotional exhaustion, depersonalization and low personal achievement. Personality traits include “extraversion”, “sense of responsibility”, “openness”, “agreeableness” and “neuroticism”. Job burnout and personality traits are related to individual behavior orientation and mental health. The fixity of teachers’ profession makes it easy to produce job burnout. Therefore, in order to reduce the negative emotion and burnout psychology of college physical education teachers and improve their mental health level, this paper studies and discusses the relationship between job burnout, mental health and personality traits, and puts forward targeted suggestions for them.

Subjects and methods: The research take college physical education teachers as the research object, carries on the correlation analysis with the method of principal component analysis, the experimental time is three months, and with the help of mental health evaluation scale and SPSS20.0 tool to analyze and process the experimental data.

Results: The emotional exhaustion of physical education teachers is more serious, and the score of personal achievement is low. There is a significant negative correlation between extroversion and job burnout, and introverted teachers are more likely to have psychological problems and negative emotions.

Conclusions: There is a significant correlation between teachers’ personal characteristics and their job burnout. Physical education teachers should correctly treat the relationship between personality characteristics and their own career, reduce job burnout and get rid of negative emotions.

Key words: job burnout - mental health - personality traits - PE teacher personal – achievement - career orientation

INTRODUCTION

Job burnout includes three parts: emotional exhaustion, depersonalization and low personal achievement. Emotional exhaustion refers to the extreme fatigue of personal emotion, while depersonalization and low personal achievement refer to the impact on self-worth judgment and identity when individuals show a negative, negative or indifferent attitude towards service objects due to the influence of work environment and work content (Sang 2019). Due to the differences of cognitive level, age structure, educational background and social experience, different individuals have individual differences in their cognitive attitude towards work. Furthermore, in the long-term boring working environment, the degree of negative and negative emotions generated by their own work is also different (Choi et al. 2017). Mental health refers to that an individual still maintains a good emotional state and psychological quality under the interference of external things. Different types of personality traits will affect an individual’s personality representation, tolerance and mental health quality. The nature of teachers’ work makes it difficult for them to maintain their work enthusiasm in relatively repetitive work, and their work attitude has a great impact on their psychological status and emotional problems.

Different scholars have more research results on job burnout, mental health and personality traits, and also began to explore the relationship between the three, in order to provide guiding suggestions for individual physical and mental health. By investigating the mediating role of meditation, empathy and gender between negative emotion and job burnout, Liu a found that the negative emotion of news media workers was positively correlated with their job burnout. Meditation and high-level empathy can effectively play an intermediary role in emotion regulation, and this intermediary relationship between women is more prominent. Therefore, it is believed that expressing appropriate empathy and strengthening psychological intervention in the face of pressure or negative emotional state can effectively reduce the job burnout of news media workers (Liu et al. 2021). Job burnout will not only affect the individual’s attitude towards work, but also have a close relationship with the individual’s behavior orientation and health level. Meng introduces the psychological contract theory to analyze and intervene the job burnout of university managers, and puts forward targeted improvement suggestions in order to improve the work enthusiasm of managers (Meng & Liu 2022). Onuigbo discussed the clinical benefits of rational emotional stress management treatment plan in reducing the level of job burnout symptoms and dysfunctional depression of special education teachers. The results show that positive psychological intervention can effectively alleviate teachers’ negative emotions and job burnout (Onuigbo et al. 2020). Kourtessis and Thomas believe that the quality of teaching level and sports facilities will affect the work enthusiasm and

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