# Research on the Optimization Path of Mental Health Education Curriculum Content Based on Data Flow Modeling

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**Abstract** Under the background of the rapid development of new media and big data technology, it is found that students in colleges and universities have certain psychological problems, and the improvement of students' mental health and the quality of education in colleges and universities is a topic of current pedagogical focus. According to the data flow model has a good application prospect in the field of education, a path of mental health education course content optimization based on the data flow model is designed from the three aspects of curriculum system, lecture content and teaching mode. In order to verify the real effect of its path, a corresponding validation research plan is formulated, and the independent sample t-test is used to validate and analyze the path. After a period of experimental intervention, the experimental group and the control group showed significant differences in learning motivation, interpersonal relationship, and emotional intelligence ($P<0.05$), which concluded that the introduction of the data flow model is beneficial to the development of students' mental health at the level of traditional mental health education curriculum content.

**Index Terms** data flow model, independent sample t-test, optimization path, mental health education

## I. Introduction

With the intensification of social competition and the increase of academic pressure, the mental health problems of college students are becoming more and more prominent [1]. The importance of mental health education programs as the main means of preventing and intervening in students' psychological problems is self-evident [2]. Internationally, college students' mental health education has been carried out in various forms and formed a system in some colleges and universities in Europe and America [3]. From the current situation, some colleges and universities have also opened college student mental health education courses and achieved results [4]. However, most colleges and universities are in a gap in the mental health education program. This status quo not only affects whether the psychological needs of our students can be satisfied in the short term, but also has an impact on the cultural atmosphere of university campuses, college students' quality and other hidden aspects in the long term. Therefore, it is not only necessary, but also urgently needed to provide psychological education programs for college students in colleges and universities [5], [6].

In the new era, the various environments faced by college students are becoming more and more complicated and diversified, which leads to an increase in the number of psychological problems of college students, thus bringing new challenges to the cultivation of sound personality of college students [7]. Mental health education is important to improve the ability of college students to adapt to social life, cultivate good personality and psychological quality of college students, and promote the coordinated development of psychological quality and cultural quality, professional quality, physical quality and ideological and moral quality [8]-[11]. It is of great significance to recognize the status and role of mental health education in personality cultivation, and to take positive measures to enhance the scientific, targeted and effective cultivation of college students' personality, so as to realize the goal of sound personality cultivation of college students [12], [13].

In order to improve the quality of mental health education courses in colleges and universities and students' mental health, a data flow model-based mental health education course content optimization path is designed, with specific paths for the curriculum system, lecture content, and teaching mode. Starting from the research purpose, the research hypothesis is put forward, then the research object and test scale are determined, and after completing a series of preparatory work, the corresponding variables are set, and finally the verification test program of the optimization path of mental health education course content is completed. Under the dual role of the scale test data and independent sample t-test method, the optimization path designed in this paper is explored and analyzed.

## II. Exploring the Optimization of Psychological Education Curriculum

### II. A. Data flow modeling theory and its applications

#### II. A. 1) Data flow modeling theory

Data flow model is a parallel programming model which is used in many applications with success, such as in and graphics, multimedia, digital signal processing, and optimization of college courses, which have been tried effectively and successfully [14]. Data flow is a model of parallel computation associated with a network of processes, a data flow program is usually described as a graph, called a data flow graph [15]. Execution units are called Actors, so in general, a dataflow program in the traditional dataflow model usually consists of multiple Actors, and communication between multiple Actors can only be accessed through a first-in-first-out buffer queue.

#### II. A. 2) Data flow applications

Java language is an excellent object-oriented programming language, portable, cross-platform and other characteristics, by the programmers of the favorite. It has an extremely wide range of applications, from complex enterprise-level large-scale applications to general - desktop office software applications, to small mobile devices, software development, everywhere you can see the active figure of Java. the Java language provides a multi-threaded model based on the pipeline, this model will produce data competition and conflict, but in the data flow Java Programming model, the connection between each component is done through explicit data, and at the same time, the sharing of implicit data is prohibited, which can avoid the shortcomings brought by the Java language, avoiding the data competition and conflict of the multithreaded model, making the data not interfere with each other, which is conducive to the realization of the program. The data flow model can not only make the program more optimized, but also provide a series of help for mental health courses in colleges and universities, which can reduce students' psychological anxiety and provide effective guidance for optimizing the path of mental health education course content. The application of data flow model in mental health education courses will be expressed in detail in the next subsection.

### II. B. Data flow-based pathways for mental health optimization

Mental health education is a key link in the development of college education, specifically to the psychological service system in colleges and universities is to pay attention to the construction of mental health education courses [16]. Mental health education program is an effective way to carry out psychological education, is an important position for shaping the healthy psychology of college students. College students, with their active thinking and strong ability to accept new things, are loyal followers and extensive users of the data flow model. The data flow model is profoundly influencing the college students in terms of their thoughts, thinking and behaviors. Therefore, the optimization path of mental health based on data flow is proposed from the three aspects of curriculum system, lecture content and teaching mode, in order to make the course really help the healthy development of college students' psychology and adapt to the new requirements put forward by the times.

#### II. B. 1) Improving the mental health education curriculum system

In the face of the impact and challenge of the data flow model in the mode of communication and conversation, we must study the needs of the times and the needs of the students, and we can use the data flow model to build a curriculum system that meets the interests and growth characteristics of the students, so as to promote the psychological health of the students to grow up and become successful. A perfect mental health education curriculum should be based on basic psychological theoretical knowledge and technology, targeting the law of students' psychological and psychosocial development as well as the characteristics of school's professional distribution, and it should take into full consideration of the new changes of students in the context of the times and the needs of special student groups, and fully mobilize the available educational resources and the data flow model to fit the psychological needs of students' mental health education curriculum system.

#### II. B. 2) Updating the content of lectures

For a long time, many school mental health education classes have low student interest, the classroom atmosphere is dead, teachers gradually lose enthusiasm, the content of the lecture can not be updated in a timely manner, can not be combined with the physical and mental characteristics of the students and the changes of the times to solve the students' most concerned about the most urgent problems, so that the classroom is inefficient and in a state of formality. To reverse this situation, teachers should be able to obtain students' psychological characteristics as well as appropriate mental health course content through the data flow model to meet students' individual needs. Different professional groups have different psychological needs, the content should be fully researched, targeted selection of content. At the same time, students can directly through the data flow model to obtain information can

be passed over, focusing on mining common problems, focus problems, popular problems, to solve the distress, to enhance the effect of psychological education.

### II. B. 3) Innovative teaching models

In the context of the big data era, mental health courses should adopt flexible and varied teaching methods for the characteristics of different students and different teaching contents, change the traditional and old-fashioned mode of "a book, a pen, a blackboard", and integrate the data flow model with the mental health course to stimulate students' potential and enhance the initiative of learning, enthusiasm, and improve mental health. For example, with the technical support of streaming data model, combining the interactivity and equality of data streaming model, the reform of the teaching mode should make full use of the "three ways", i.e., experiential, participatory and interactive teaching methods, integrating emotions into the classroom, bringing hotspots into the classroom, and blowing the winds of democracy into the classroom, and mobilizing the new technologies such as audio, video, etc., and adopting the new technologies that are popular and popular among college students. In order to achieve twice the result with half the effort, we need to adopt the language that is popular and acceptable to college students, so that they can take the initiative to integrate into the classroom and become active constructors of the classroom.

## III. Study design

### III. A. Purpose of the experiment and hypothesis

#### III. A. 1) Purpose of the experiment

Mental health education is a program that promotes the physical and mental development of the recipient and improves many aspects of the recipient's learning ability, interpersonal relationships, and emotional management. Improving students' interpersonal relationships is a top priority of mental health education programs. In recent years, colleges and universities have also attempted to conduct intervention studies on students' interpersonal relationship problems, such as using group counseling, lectures, and systematic training, all of which have yielded significant results. Most of these ways use extracurricular modes, and no systematic educational experimental intervention studies have been seen. This paper focuses on the current situation of students' interpersonal relationship, emotion management and learning motivation in colleges and universities, and uses the data flow model to conduct mental health education intervention experiments, to explore whether the optimization path of mental health education based on the data flow model has a better promotion and effectiveness on students' interpersonal relationship, emotion management and learning motivation compared with the traditional mental health education path.

#### III. A. 2) Research hypotheses

Compared to the traditional mental health education pathway, the data flow model-based mental health education pathway is more likely to promote students' interpersonal relationships, academic motivation, and emotional management states.

### III. B. Study population and test scales

#### III. B. 1) Objects of study

In this study, freshmen students from a key undergraduate college in a province were selected as the research subjects. Questionnaires were distributed by means of WeChat and e-mail, and 2 classes with homogeneous interpersonal relationship, emotion management and study motivation situations were screened out, and Class A was randomly determined as the experimental group and Class B as the control group.

#### III. B. 2) Test scales

(1) Learning Motivation Scale

The Student Learning Motivation Scale is used to test whether students in the mental health teaching stage have some problems in learning goals, learning interest, and learning motivation. The questionnaire has twenty questions, and each question selects "Yes (for 1 point)" or "No (for 0 points)". These 20 questions are divided into four subscales, which respectively examine the difficulty of students in learning level: weak motivation (1~5 questions to check whether students' learning motivation is too weak), too strong motivation (6~10 questions to check whether students' learning motivation is too strong), learning interest (11~15 questions to check whether there is a problem with students' learning interests), and learning objectives (16~20 questions to check whether there are problems with students' learning goals).

(2) Interpersonal Relationship Test Scale

Regarding the interpersonal relationship scale is adopted as the students' peer relationship and teacher-student relationship quiz scale, which is used to detect the problems of interpersonal relationship of students in the study stage. For this test, the questionnaire of peer relationship and teacher-student relationship was selected, which

consists of 28 questions. The choices are either "Yes (1 point)" or "No (0 points)", and all the choices are added up to the total score of the test. The larger the score, the greater the problem the student has in interacting with classmates. The reliability coefficient of the Students' Peer Relationship Test Questionnaire is 0.811.

(3) Emotional Intelligence Scale

The Emotional Intelligence Scale has high reliability and validity, and its reliability (0.842) was also verified. So this study decided to use this scale for the study. The scale consists of 33 questions with four dimensions (emotion perception, emotion facilitated thinking, emotion understanding, and emotion management) and five levels of scoring, whose seals are 1, 2, 3, 4, and 5. The scores are positively proportional to the level of emotional intelligence.

## III. C. Experimental Procedures

This experiment is divided into four phases, which are:

Phase I, (April 2022 - August 2022)

(1) Reviewing relevant literature, developing and revising the research program, identifying research tools, and contacting experimental schools.

(2) Determine teaching materials and prepare a method for optimizing the path of mental health education based on the data flow model.

(3) Conduct questionnaire distribution and select homogeneous classes.

Phase II, (September 2022 - December 2022)

(1) Teaching mental health classes in the experimental group class and the control group class respectively, with the course content theme of interpersonal relationship interaction module.

(2) The experimental and control classes were taught the same content, the study time was to meet the maximization of the same as possible, and only the mode of delivery was different between the experimental and control groups.

(3) A questionnaire post-test was conducted in the experimental and control classes.

In the third stage, the data were analyzed and processed.

In the fourth stage, the first draft of the paper was written, repeatedly revised and finalized.

## III. D. Experimental Interventions and Control of Irrelevant Variables

### III. D. 1) Experimental interventions

(1) Teaching content: The teaching material is the experimental textbook "Mental Health Education" published by the Science and Technology Press and approved by the Provincial Textbook Examination and Approval Committee. The teaching content is the theme of interpersonal communication, which is "My Interpersonal Circle", "The Charm of Affinity", "Conflict Resolution", "Towards a Win-Win Situation", "The Art of Communication", "I Want to Say to You", "Only by Knowing You Can I Understand You Better", and "Interpersonal Trust".

(2) Lecture time and mode of delivery: the control group followed the traditional mental health education path, with the course being once a week for a total of eight class hours; the experimental group followed the optimized path of mental health education based on the data flow model. In order to ensure that members of the experimental group and the control group have the same learning time, ideally, we try our best to limit the internalization and absorption time of the members of the experimental group to one class hour. Then, the lecture time of the experimental group is also divided into eight class hours, four times in class and four times out of class, also once a week.

(3) Course lesson plan: the control group in accordance with the "mental health education" supporting the lesson plan, the experimental group in this lesson plan as the basis, according to the path of mental health education in this paper, make changes.

### III. D. 2) Control of Unrelated Variables

(1) Ensure homogeneity of pretest results between the experimental and control groups. Based on the plenary pre-test questionnaire, it was determined that the starting levels of the three areas of motivation, interpersonal relationships, and emotional management were roughly the same.

(2) Ensure that the content of the lectures is the same and the duration of the lectures is the same under idealized conditions.

(3) Control for other extraneous variables that affect the effectiveness of the course. For example, teachers should not imply their subjective expectations of students in different classes, not disclose the purpose of this research experiment, and ensure that students learn in a stable emotional state.

### III. E.  Data processing methods

The research data of the control group and the experimental group were obtained through the scale test, and the independent samples t-test was used to process the obtained research data and confirm the validity of the data-flow-based mental health course content optimization path based on the data analysis results. The principles and formulas for calculating the independent samples t-test are shown below:

(1) Propose the null hypothesis:

$$H_0 : \mu_1 - \mu_2 = 0; H_1 ; \mu_1 - \mu_2 \neq 0 \tag{1}$$

where $\mu_1$ and $\mu_2$ are the means of the first and second aggregate, respectively.

(2) Selection of test statistic

The first case: when the variances of the two aggregates are unknown and equal, i.e., $\sigma_1 = \sigma_2$, under the condition that $H_0$ holds, the choice of test statistic is:

$$t = \frac{\overline{X}_1 - \overline{X}_2 - (\mu_1 - \mu_2)}{S_w \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} = \frac{\overline{X}_1 - \overline{X}_2 - 2}{S_w \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \sim t(n_1 + n_2 - 2) \tag{2}$$

where $S_w^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}$.

The second case: when the two overall variances are unknown and unequal, i.e., $\sigma_1 \neq \sigma_2$, the choice of test statistic is:

$$t = \frac{\overline{X}_1 - \overline{X}_2 - (\mu_1 - \mu_2)}{\sqrt{\sigma_{12}^2}} \tag{3}$$

where $\sigma_{12}^2 = \frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}$ obeys a t-distribution of modified degrees of freedom.

The modified degrees of freedom are defined as:

$$f = \frac{\left(S_1^2 / n_1 + S_2^2 / n_2\right)^2}{\left(S_1^2 / n_1\right)^2 / n_1 + \left(S_2^2 / n_2\right)^2 / n_2} \tag{4}$$

(3) Calculate the observed values and P-values of the test statistics

The purpose of this step is to calculate the observed values of the $F$ statistic and the $t$ statistic and the corresponding $P$ values.SPSS will automatically calculate the $F$ statistic and the $P$ values based on a one-way ANOVA and will automatically substitute the mean, the number of samples, and the variance of the sampling distributions of the two groups of samples into the $t = \frac{\overline{X}_1 - \overline{X}_2 - (\mu_1 - \mu_2)}{\sqrt{\sigma_{12}^2}}$, and compute the observed values of the $t$ statistic and the corresponding $P$ values.

(4) Give the significance level $\alpha$ and make a decision.

## IV.  Exploratory Analysis of the Optimization Path of Mental Health Curriculum Content

### IV. A.  Comparative Analysis of Learning Motivation

#### IV. A. 1)  Comparative analysis of pre-intervention data

The students' motivation to learn in the experimental and control groups before the intervention were subjected to independent samples t-test, and the results of the comparative analysis of the pre-intervention data are shown in Fig. 1, where (a) to (d) are too weak motivation, too strong motivation, interest in learning, and learning goals, and EG to CG in the figure denote the experimental group and the control group, respectively. Students in the experimental and control groups before the intervention, the results of too weak motivation, too strong motivation, interest in learning, and learning goals did not reach the level of significance (p>0.05), and the differences between the groups were not significant. It can be seen that the experimental and control group students are homogeneous in terms of weak motivation, strong motivation, interest in learning, and learning goals, and can be intervened in the experimental group's mental health learning motivation under the assumption that the family learning support

received by the students is stable, and a number of post-intervention differences in the amount of change in the measurements will indicate that the intervention in this study is effective and the study is feasible.
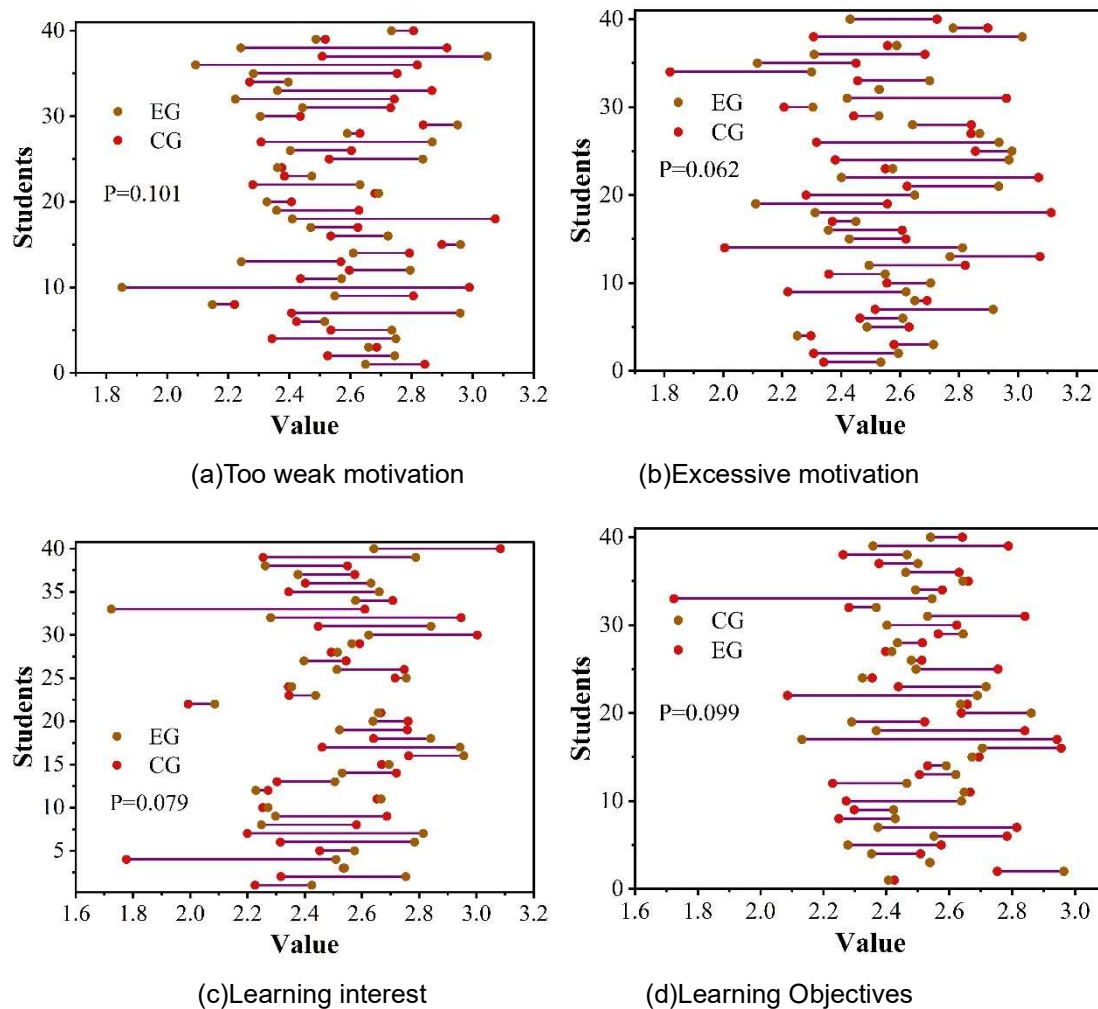


(a)Too weak motivation           (b)Excessive motivation

(c)Learning interest           (d)Learning Objectives

Figure 1: Comparative analysis of data before intervention

## IV. A. 2) Comparative analysis of post-intervention data

After the experimental intervention was carried out on 40 students in the experimental group, data were again collected and statistically analyzed for the experimental and control groups. The post-intervention learning motivation scale scores of the experimental and control groups were used as the dependent variable, and the group was used as the independent variable for the test of difference between groups, and the results of the comparative analysis of the post-intervention data are shown in Figure 2. After the experimental intervention, students in the experimental group who received the intervention were significantly higher than students in the control group in the levels of too weak motivation, too strong motivation, interest in learning, and learning goals, indicating that compared with the traditional mental health education path, the optimization path of mental health education based on the data flow model improves students' motivation to a great extent.

## IV. A. 3) Comparative analysis of experimental and control groups before and after intervention

Paired samples t-tests were conducted on students' motivation before and after the intervention in the experimental and control group classes, respectively, and the specific results are shown in Figures 3 to 4. From the data in Figure 3, it can be seen that after the intervention of the mental health education optimization path based on the data flow model, the students' post-test scores were significantly higher than the pre-test scores at the levels of weak motivation, over-motivation, learning interest and learning goals, and the values of each dimension were improved and reached a significant level (P<0.05), which verified the promotion effect of the mental health education optimization path based on the data flow model on students' learning motivation.
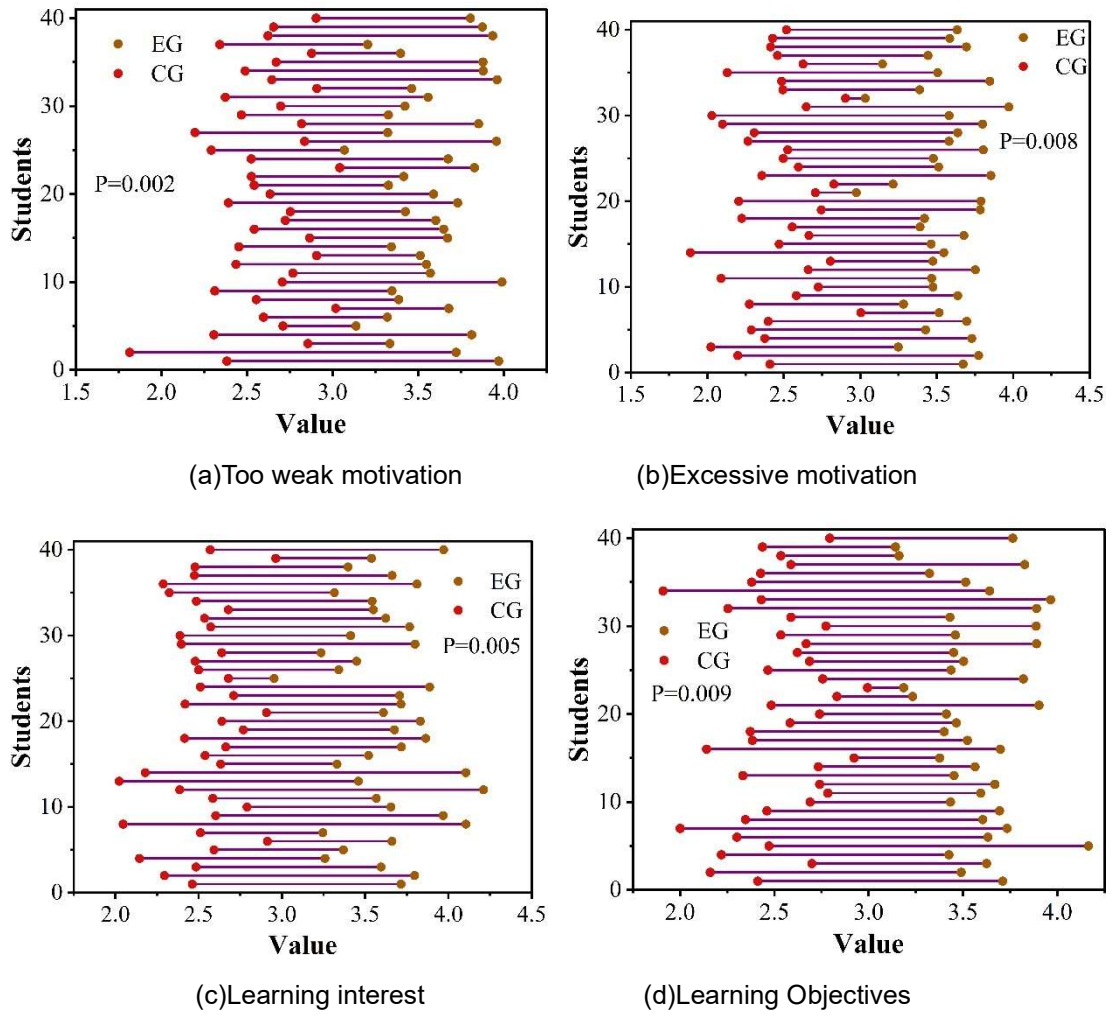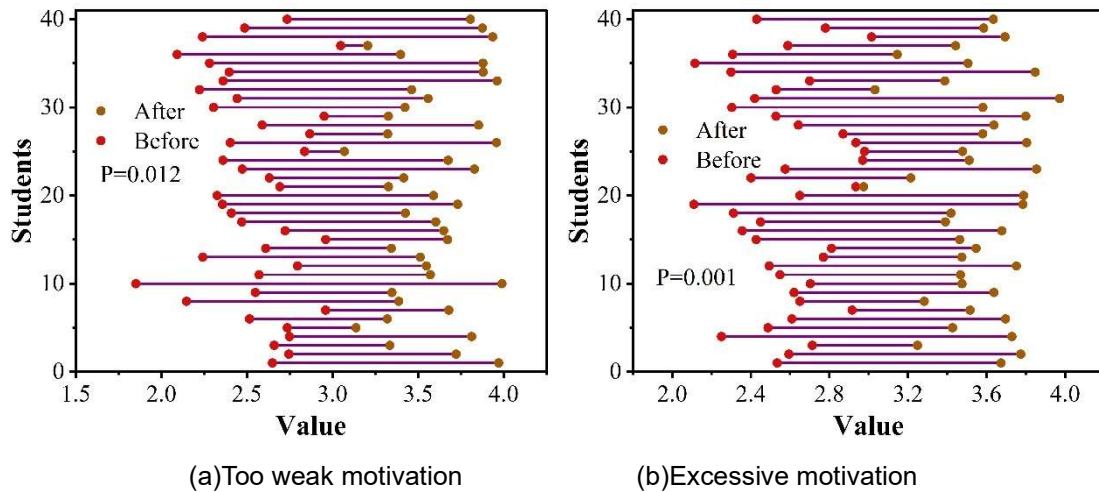
(a)Too weak motivation

(b)Excessive motivation

(c)Learning interest

(d)Learning Objectives

Figure 2: The results of data comparison and analysis after the intervention



(a)Too weak motivation

(b)Excessive motivation

(c)Learning interest
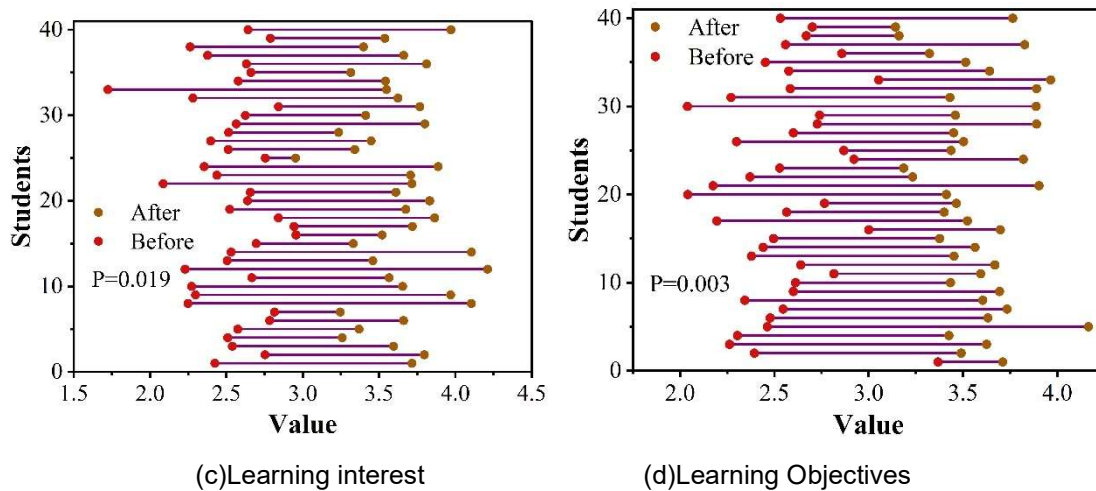
(d)Learning Objectives

Figure 3: Comparative analysis of Experimental group before and after the intervention

During the intervention study period, students in the control group were given any intervention using the traditional mental health education pathway, and as can be seen in Figure 4, there were no significant differences between the pre and post-test scores of the control group in the levels of overly weak motivation, overly strong motivation, interest in learning, and learning goals in the same time period.



(a)Too weak motivation

(b)Excessive motivation



(c)Learning interest

(d)Learning Objectives
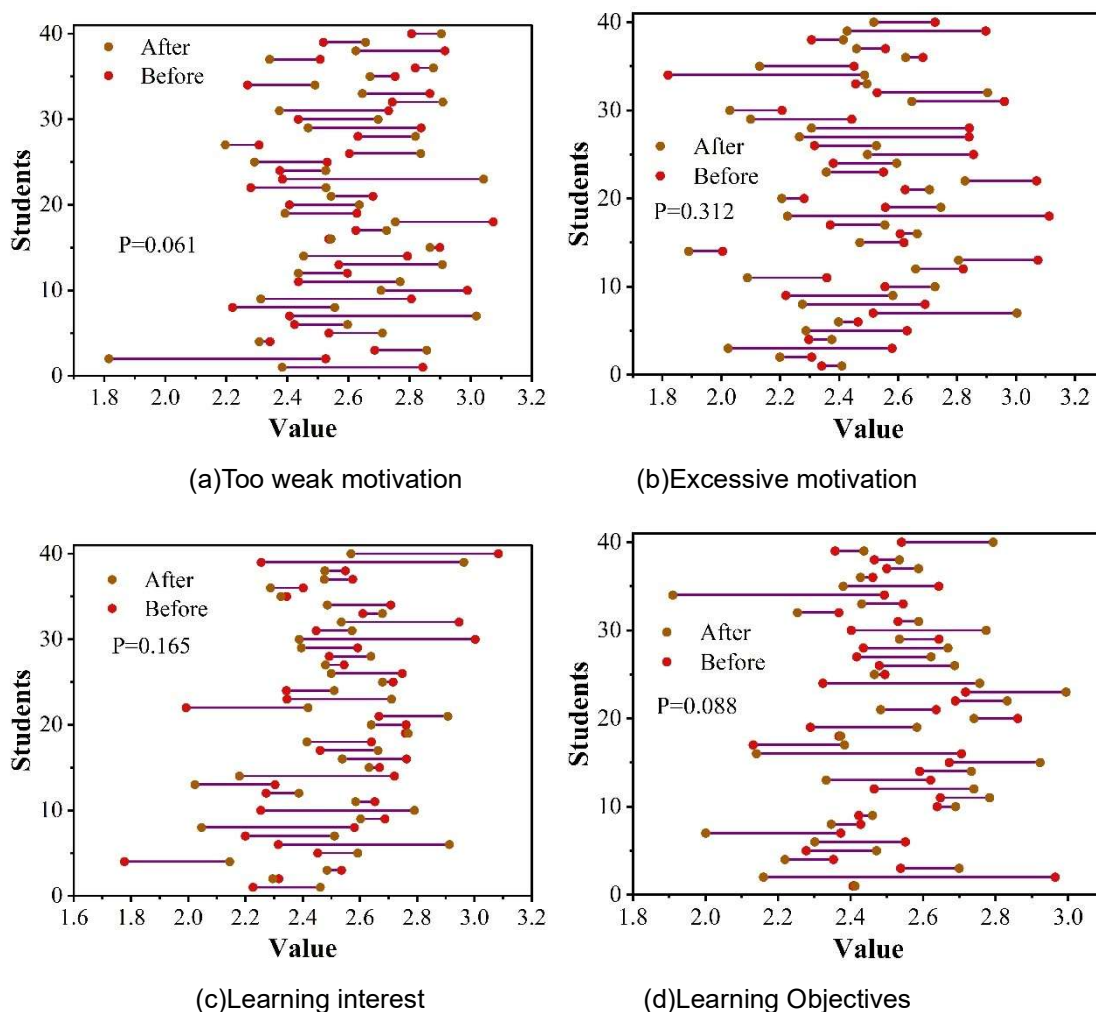
Figure 4: Comparative analysis of the control group before and after the intervention

### IV. B. Comparative analysis of interpersonal relationships

#### IV. B. 1) Comparison of experimental and control group pre-tests

In order to test the practical application efficacy of the optimization path of mental health education based on the data flow model, different methods were used to effectively intervene in the research subjects, aiming to promote the high-quality development of mental health education in colleges and universities. Using independent samples t-test, test and analyze the dimensions of the interpersonal relationship scale of the students in the experimental group and the control group before the intervention, and analyze whether there is a significant difference between the experimental group and the control group in the dimensions of the interpersonal congratulations scale, and the difference between the experimental group and the control group in the pre-test is shown in Fig. 5, in which (a) ~ (b) are the classmate relationship and the teacher-student relationship, respectively. According to the data we can see that there is no significant difference between the experimental group and the control group in students' interpersonal relationships before the intervention, which indicates that the two groups have equal levels of mental health before the intervention, and ensures that the results of the subsequent study are persuasive and rigorous.
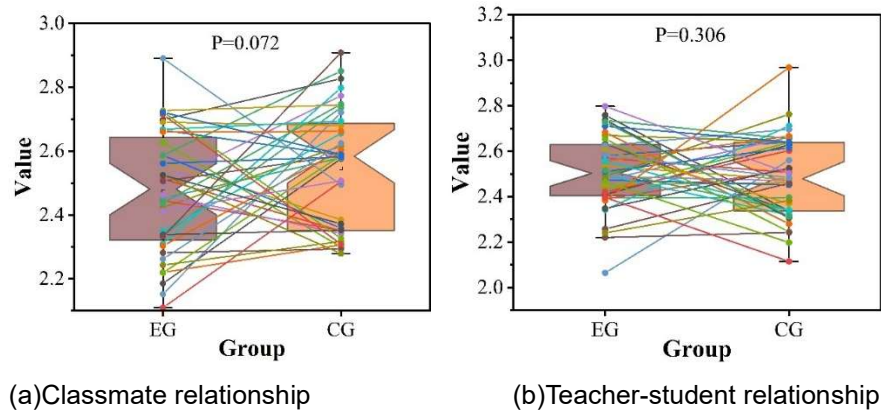


(a)Classmate relationship                    (b)Teacher-student relationship

Figure 5: The comparison of the pre-test between the EG and the CG

#### IV. B. 2) Control group pre- and post-intervention comparison

Using independent samples t-test, the control group's scale dimensions were analyzed in comparison with the pre- and post-tests, to analyze whether there were significant differences between the control group's pre- and post-tests in the scale dimensions, and whether there were any significant changes, and the results of the control group's pre- and post-intervention comparisons are shown in Figure 6. According to the data, it can be concluded that there is no significant difference in the interpersonal relationship scale and its dimensions in the control group after the experimental group carried out the traditional mental health education path intervention experiment (P>0.05), indicating that the results of the control group in the pre- and post-tests basically did not change, reflecting that the traditional mental health education path does not have a prominent effect on the enhancement of students' interpersonal relationships.
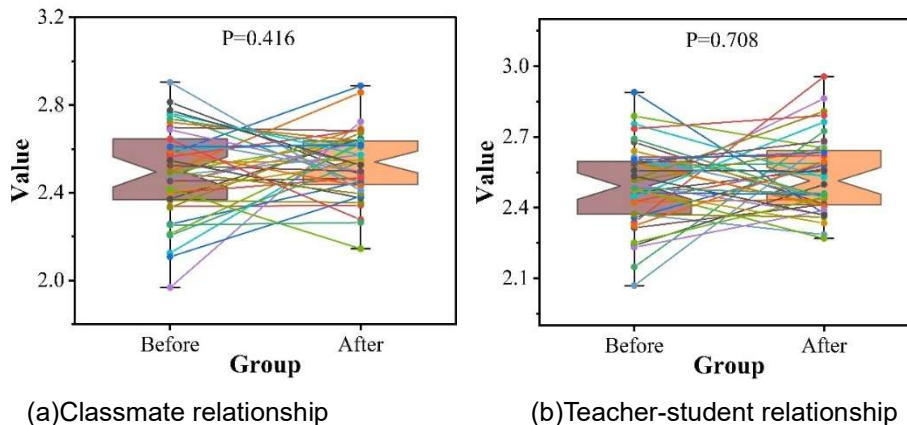


(a)Classmate relationship                    (b)Teacher-student relationship

Figure 6: Comparison of the control group before and after the intervention

**IV. B. 3)  Comparison of the experimental group before and after the intervention**

The results of the pre-test and post-test of the experimental group were analyzed to find out whether the optimization path of mental health education curriculum content based on the data flow model has an impact on students' interpersonal relationships and whether it is feasible. Using independent samples t-test, the experimental group's interpersonal relationship scale dimensions were pretested and posttested and analyzed comparatively to analyze the differences between the experimental group's pretest and posttest in the dimensions of the interpersonal relationship scale, as well as the forms of change, and the results of the pre- and post-intervention comparisons of the experimental group are shown in Figure 7. According to Figure 7, it can be seen that the experimental group before and after the test in the various dimensions of the interpersonal relationship scale, the difference is significant. After statistical analysis, there is a significant difference in the data, through the results can be shown that the experimental group in the data flow model based on the mental health education curriculum content optimization path after the intervention, the students of the interpersonal relationship aspects of the problem has significantly improved, proving that the research program of this paper practical application value.
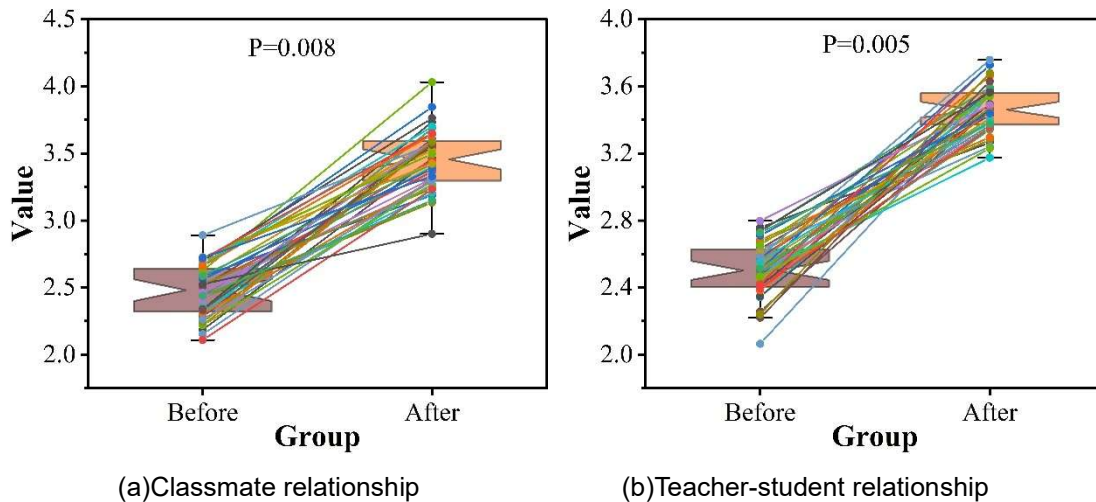


(a)Classmate relationship          (b)Teacher-student relationship

Figure 7: Comparison of the experimental group before and after the intervention

### IV. C.  Differential Analysis of Emotional Intelligence

**IV. C. 1)   Analysis of pre-test differences between experimental and control groups**

Independent samples t-test was conducted on the members of the two groups before the beginning of the experiment, and the results of the pre-test difference analysis between the experimental group and the control group are shown in Fig. 8, where X1~X4 denote emotion perception, emotion-promoting thinking, emotion understanding, and emotion management, respectively. The results showed that the p-values of the dimensions of emotional intelligence, i.e., emotional perception, emotion-promoting thinking, emotional understanding, and emotional management of the students in the experimental group and the control group before the beginning of the intervention were all greater than 0.05, and there was no significant difference.
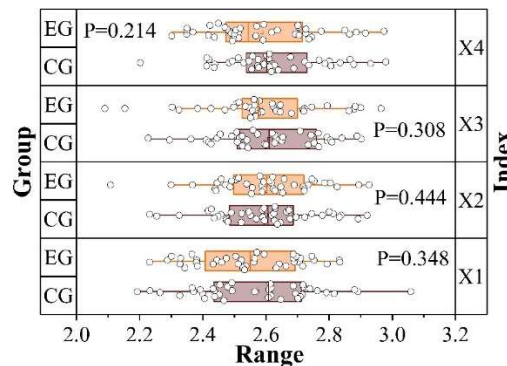


Figure 8: The pretest differences between the EG and the CG

**IV. C. 2) Analysis of differences between pre- and post-tests in the experimental group**

In this subsection, the scale data collected before and after the beginning and the end of the Data Flow Model-based Mental Health Education Curriculum Content Optimization Pathway intervention were collated and analyzed using a contrasting samples t-test, and the results of the pre- and post-test difference analysis for the experimental group are shown in Figure 9. The results showed that under the experimental intervention of the data flow model-based mental health education curriculum content optimization path, significant differences ($P < 0.05$) were produced in emotional perception ($P=0.004$), emotion-promoting thinking ($P=0.021$), emotional comprehension ($P=0.028$), and emotional management ($P=0.001$), i.e., the data flow model-based mental health education curriculum content optimization pathway has a facilitating effect on students' emotional intelligence and safeguards their mental health status.
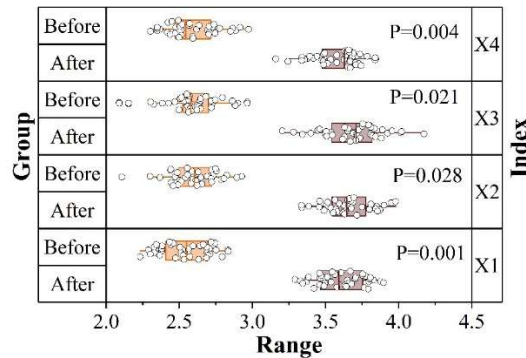


Figure 9: Analysis of the pre - and post-test differences in the experimental group

**IV. C. 3) Pre- and post-test difference analysis for control group students**

The emotional intelligence data of the control group students were collected at the end of the experiment, and the collated data were analyzed by independent samples t-test, and the results of the analysis of the differences between the pre and post-tests of the control group students are shown in Figure 10. The results show that students in the control group improved in emotional perception, emotion-promoting thinking, emotional understanding, and emotional management, but not significantly, indicating that the traditional mental health education curriculum content pathway does not have a prominent role in promoting students' emotional intelligence.
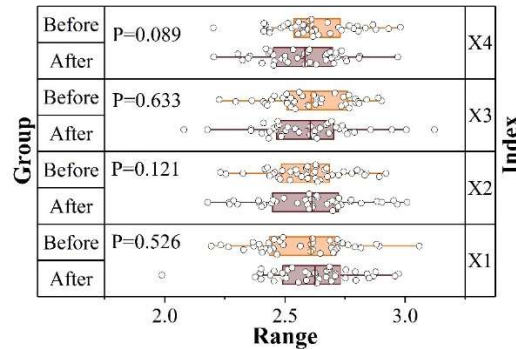


Figure 10: The differences between the pre - and post-tests of the students in the CG

**IV. C. 4) Tracking test analysis results**

Six months after the end of the intervention a follow-up test was conducted on the student using the same scale in order to explore the effectiveness of the implementation of the program of this paper, an independent samples t-test was conducted on the total score of emotional intelligence in the follow-up test, the total score of emotional intelligence in the pre-test, and the total score of emotional intelligence in the post-test, and the results of the analysis of the follow-up test are shown in Table 1. The results show that there is a very significant difference between the students' total emotional intelligence scores after the effect of the optimization path and before participation ($p=0.004$), and in the follow-up test after six months, there is a very significant difference between the scores of emotional intelligence ($3.804 \pm 0.326$) and the scores of the pre-test ($3.541 \pm 0.431$) ($p=0.002$), and the scores of the tracking test are improved compared with the scores of the post-test, though. But the difference was not significant.

Table 1: Track the test analysis results

| Name | Pretest (M±SD) | Post-test (M±SD) | Track (M±SD) | T | P |
|---|---|---|---|---|---|
| Total score of emotional intelligence | 3.541±0.431 | 3.746±0.342 | 3.804±0.326 | | |
| Pre-test and post-test | | | | -3.446** | 0.004 |
| Pretest and tracking | | | | -3.748** | 0.002 |
| Post-test - Tracking | | | | -1.046 | 0.244 |

## V. Conclusion

This paper takes the theoretical knowledge of data flow model as the starting point of this research, and designs a mental health education course content optimization path based on data flow model. In order to test its effectiveness, a corresponding research plan was deliberately developed, and under the theoretical support of the plan, the optimization path of mental health education course content was explored and analyzed. Under the effect of intervention, it was found that the experimental group and the control group produced significant differences in learning motivation, interpersonal relationships, and emotional intelligence, and the p-value of each dimension satisfied less than 0.05, indicating that on the basis of the traditional mental health education course content path, the integration of the data flow model is more conducive to the protection of the students' mental health level, and at the same time, promotes the high-quality development of mental health education in colleges and universities.

## Funding

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