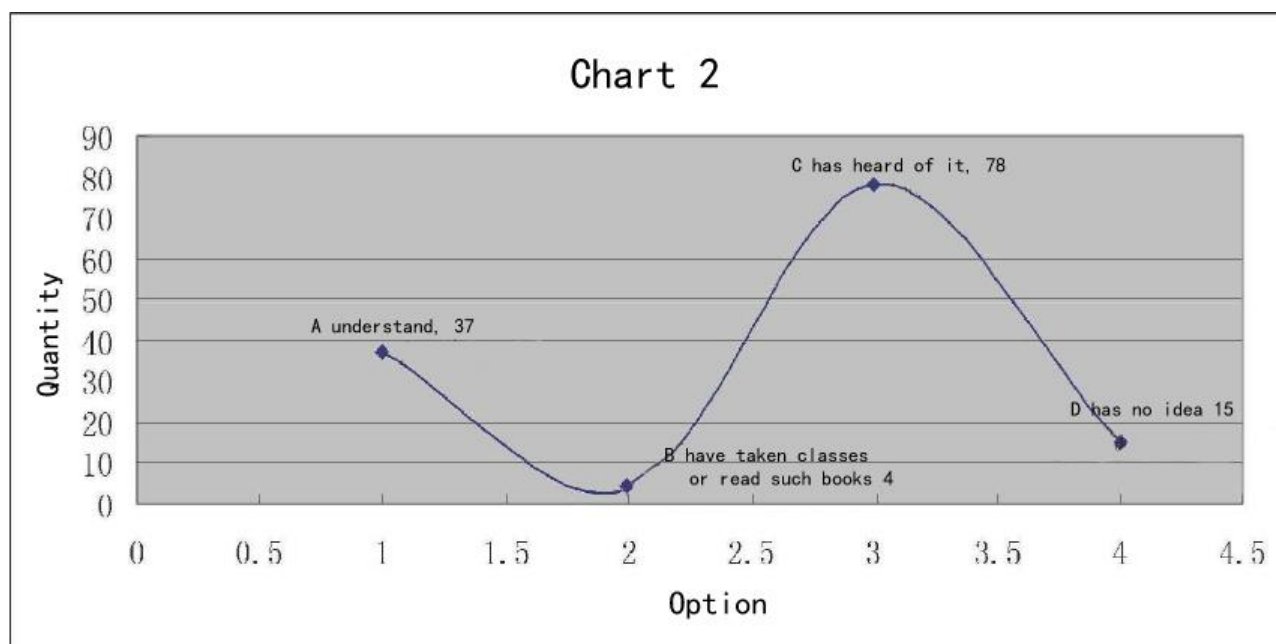


According to the data feedback of the questionnaire, the largest number of students choose pedagogy and psychology. The importance of these two disciplines can be described as the supremacy of pedagogy according to the data. Almost all the students choose pedagogy option a, and 87 choose general educational psychology.



**Figure 2.** The views of college students majoring in art education on art psychology.

According to the forms and data in the table, there are not many students who know art psychology. It is obvious that nearly 40% of the students majoring in art education in a school apply for art psychology again, which is a pity of college education. The answers to the questionnaire can be multiple-choice.

Art Education in Colleges and universities is not just a purpose. On the one hand, it is ostensibly to teach students the knowledge and technical ability of the subject. On the other hand, it is to improve the comprehensive quality of the educated. However, the traditional art education only pays attention to the teaching of basic knowledge and ignores the function of psychological education. Art plays an important role in aesthetic education. It is not only an important way to improve one's aesthetic ability, but also improve one's ability to appreciate, create and perceive beauty. Use art works to arouse students' imagination, so that students can better understand the author's intention, the changes of the author's thought in the process of creation, and guess the reason for the author's idea, so as to improve their ability to appreciate and enhance their artistic charm.

**Conclusions:** To sum up, the past art education only focused on the cultivation of students' professional knowledge, but ignored the cultivation of their comprehensive ability. This makes the knowledge learned by students too single and not comprehensive enough. However, with people's attention to art education, the market of art is gradually expanding. Many colleges and universities take art education as the key training object through teaching reform. Therefore, when carrying out art education for students, we should start from reality and combine theory with practice. Modern art education is facing major problems. Educators and art creators should work together to change this situation, establish correct learning methods and appreciation methods, and show art unreservedly.

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## BAYESIAN NONPARAMETRIC MODELING METHOD AND ITS APPLICATION IN STATISTICAL SPARSE LEARNING FROM THE PERSPECTIVE OF PSYCHOLOGY

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**Background:** From the perspective of research methods, psychology mainly adopts the viewpoint of information processing and uses computers to simulate human brain. If the results of computer operation are consistent with the results of human brain thinking, it proves that the initially proposed computer model is correct, that is, human brain does work according to such a model. Due to the change of research objects and research methods, the content of psychological research is greatly enriched. Compared with the early behaviorist psychology, psychology is no longer limited to the psychological problems in arithmetic, but gradually involves the psychological activities in geometry, algebra and even higher mathematics. This kind of research has typical disciplinary significance and has more enlightening and guiding significance for mathematics education. However, compared with the traditional research on mathematics education, psychology adopts a more special perspective on mathematics education. Firstly, psychology emphasizes the decomposition and fine analysis of tasks, which makes the research on mathematics education more in-depth and more specific. It not only studies the mastery of mathematical knowledge, but also pays more attention to the analysis of students' cognitive style and the application level of cognitive strategies. Secondly, compared with mathematicians, introspection is used to study the process of mathematical thinking. Psychologists have adopted a special method, that is, using objective methods to study people's thinking process, which makes its research on mathematics education rise to a more scientific level. Psychological research on the learning process has reached a subtle level. Third, generally speaking, the research of psychology does not directly involve the process of teaching or the discussion of mathematics curriculum, but focuses on the cognitive process. This constitutes an important difference between it and traditional mathematics education research, especially domestic mathematics education research. In China, the research on mathematics education has been dominated by "teaching materials and teaching methods" for a long time. In relevant publications and books, we often see "teaching plan" rather than "learning plan". In foreign countries, the modernization movement of mathematics education is also concerned about how to use modern mathematics ideas to guide the reform of primary mathematics, while ignoring the research on the real thinking activities of middle school students in mathematics learning activities. However, all mathematics education research should finally be implemented in students' mathematics learning activities. Therefore, only with a deeper understanding of students' thinking activities in the process of learning mathematics can mathematics education develop healthily.

Statistical sparse learning method is an interdisciplinary research direction of artificial intelligence, applied statistics and visual cognition. It is also one of the latest research hotspots in the field of machine learning. The statistical sparse learning method based on Bayesian learning theory combines prior knowledge with sample information, dependency and probability representation. It is an ideal model for uncertain knowledge representation. Compared with other methods, Bayesian nonparametric method expresses all forms of uncertainty through random process, which can include a priori knowledge in the model, reduce the assumption constraints on parameters and implicitly avoid over fitting; Bayesian theorem is used to realize the learning and reasoning process, provide feature information based on model interpretation, and provide an adaptive method for model selection. Therefore, Bayesian nonparametric statistical sparse learning modeling has important theoretical value.

This research process mainly aims at the influence of psychology on Bayesian nonparametric modeling in statistical sparse learning.

**Subjects and methods:** A total of 75 mathematics students were selected for research. 75 students were randomly divided into four experimental groups and one control group, namely parameter modeling recording group, parameter modeling thinking group, parameter modeling practice group and parameter modeling auxiliary group. Four experimental groups were intervened by psychology, while the control group did not.

**Study design:** SPSS18.0 was used to input and count the experimental data.

**Results:** The differences between experimental groups 1, 2, 3 and 4 and the control group before intervention were compared. The one-way ANOVA was used to test whether there was a significant difference in the parameter modeling level between the experimental group and the control group. The results are shown in Table 1. The results show that  $F = 0.449$ ,  $P = 0.772$ ,  $P > 0.05$ , indicating that there is no significant difference in parameter modeling level between the experimental group and the control group. The subjects of the five groups are homogeneous and can be treated experimentally.

The differences between experimental groups 1, 2, 3 and 4 and control group after intervention were compared.

After eight weeks of experimental intervention, one-way ANOVA was used to test whether there was significant difference in parameter modeling level between the experimental group and the control group. The results are shown in Table 2. The results showed that  $f = 2.774$ ,  $P = 0.034$ ,  $P < 0.05$ , indicating that there were significant differences in the level of parameter modeling between the experimental group and the control group after different experimental treatments. Through LSD test, compared with the control group, the parameter modeling level of experimental group 3

(parameter modeling practice group) and experimental group 4 (parameter modeling auxiliary group) was significantly improved, while the parameter modeling level of experimental group 1 (parameter modeling record group) and experimental group 2 (parameter modeling thinking group) was not significantly improved. At the same time, there was no significant difference in the total score of parameter modeling between experimental group 3 and experimental group 4.

**Table 1.** Significance test of difference between experimental groups 1, 2, 3 and 4 and control group before intervention.

Test group	Test number	Average score	Standard deviation	<i>F</i>
Experimental group 1	15	165.80	13.01	0.449
Experimental group 2	15	169.20	9.98	
Experimental group 3	15	168.93	18.41	
Experimental group 4	15	171.27	13.62	
Control group	15	172.27	15.64	

Experiment 1, 2, 3, 4 classes and control group were compared before and after the test. After eight weeks of experimental intervention, the researchers used paired sample t-test to investigate the difference of parameter modeling level between pre-test and post-test. The results show that there is an extremely significant difference between the experimental group 1 (parameter modeling recording group) and the experimental group 2 (parameter modeling thinking group) ( $t = -4.577, P = 0.000, P < 0.001$ ), and the experimental group 3 (parameter modeling practice group) ( $t = -6.283, P = 0.000, P < 0.001$ ), there was a significant difference in the pre-test and post-test of the subject's parameter modeling level in the experimental 4 group (parameter modeling auxiliary group) ( $t = -5.667, P = 0.000, P < 0.001$ ), while there was no significant difference in the control group ( $P > 0.05$ ).

**Table 2.** Significance test of post intervention difference between experimental groups 1, 2, 3 and 4 and control group.

Test group	Test number	Average score	Standard deviation	<i>F</i>
Experimental group 1	15	182.8	12.09	2.744
Experimental group 2	15	179.6	9.62	
Experimental group 3	15	189.67	16.78	
Experimental group 4	15	191.33	15.69	
Control group	15	175.87	20	

Through the analysis of the experimental data, compared with the control group, the overall level of parameter modeling in experimental group 3 and experimental group 4 was significantly improved, and the pre-test and post-test differences in the level of parameter modeling in experimental group 1 and experimental group 4 were significant, but the level of parameter modeling in the two groups was not significantly improved compared with the control group, it shows that the parameter modeling practice and parameter modeling assistance have a good effect on improving the parameter modeling level of college students.

**Conclusions:** From the comprehensive experimental results, psychology can improve the participation and experience of parameter modeling from the fundamental reason, and it is easier to be accepted by students in the field of mathematics. From the psychological depth level, we can optimize the Bayesian nonparametric modeling model in statistical sparse learning, promote students in the field of mathematics to have a deeper understanding of Bayesian nonparametric modeling in statistical sparse learning, and improve students' learning ability under the scientific research background of the rapid development of mathematical knowledge.

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## THE DRIVING FORCE AND PERFORMANCE OF COLLEGE STUDENTS' PSYCHOLOGICAL ENTHUSIASM OF INNOVATION TEAM

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**Background:** College Students' innovative team psychology is a special and stable psychological state of social consciousness formed by cultivating the team's innovative thinking, innovative knowledge, innovative ability, innovative personality and innovative skills. It can enable the trainees to form psychological driving force and realize innovation. The cultivation of College Students' innovative spirit stimulates students' innovative enthusiasm through teachers' innovative consciousness, guides students' innovative learning through teachers' innovative teaching methods, cultivates students' innovative personality through teachers' innovative personality, and drives students' innovative activities through teachers' innovative practice. Scientific and innovative educational concept and good environmental atmosphere are conducive to better cultivate college students' innovative spirit. Innovative spirit is a high generalization and expression of innovative psychology. The diversified social development and the continuous reform and innovation of higher education affect the training mode of talents in colleges and universities, and then affect the innovative psychological driving force of contemporary college students. At present, the common phenomena of college students are: lack of psychological motivation, unclear innovation objectives, poor teamwork, and even lack of team cohesion. Psychology shows that in the process of establishing the psychological driving force mechanism of team innovation, students' innovation ability, positive thinking ability and team cooperation spirit have been greatly improved, and students reshape themselves better in team growth.

The purpose of this study is to analyze the psychological driving force mechanism of team innovation. How to use innovative psychology to improve the performance of College Students' team driving force can further stimulate their own innovative ability and form a stable source of innovation.

**Subjects and methods:** This paper takes college students' team as the research object, and improves college students' team psychological enthusiasm and performance ability by establishing a team innovation psychological driving force mechanism. The research method of questionnaire, statistics and interview is adopted. Calculate and count the effective questionnaires, draw charts for analysis and induction, and form a survey report. Further understand the motivation of College Students' team innovation psychology.

**Study design:** Taking a university student as the survey object, this paper designs a questionnaire, randomly selects 500 students to ask questions, obtains the final data for statistical analysis, and draws charts for induction.

**Methods of statistical analysis:** (1) Distribution of questionnaires: the total number of questionnaires is 500, and the number of returned questionnaires is 486, with an effective rate of 97.2%, which is in line with the statistical standard. (2) Overview of the questionnaire: the questionnaire raised 20 questions, which were asked from the importance of teamwork, psychological enthusiasm and innovation driving force.

**Results:** Through the survey and statistics of 500 students, the following table data can be obtained.

**Table 1.** Questionnaire on psychological motivation of college students' innovation team.

Investigation content	Total number of people investigated	Valid questionnaire	Number of people	Proportion
Teamwork	500	486	109	21.8
Psychological enthusiasm			216	43.2
Innovation driving force			161	32.2

Through the investigation and analysis of college students, psychological enthusiasm plays an important role in college students' team innovation. Personal ability is limited. Integrating into the team and having good psychological enthusiasm not only promotes the cohesion of the team, but also improves the performance of the driving force of the team.

The enthusiasm and driving force of team innovation psychology are a circular process of interaction and interaction. However, in the face of many problems of contemporary college students' innovative psychological motivation, such as one-sided pursuit of their own development and self-realization, lack of necessary team consciousness and responsibility, it is necessary to coordinate with factors such as society, school and family. Under the environment that society encourages innovation, school education and family education correctly guide students' innovation, and student teams are proud of innovation and compete for innovation, it can stimulate college students' psychological driving force of innovation to the greatest extent.