



# Big Data-Based Research and Countermeasures of College Students' Negative Emotions

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**Abstract.** As big data is leaping forward, it has aroused the attention of all walks of life over the past few years. The psychological behavior based on network big data has aroused an increasing concern and has been more extensively affirmed, which acts as a novel way for humans to explore the law of psychological behavior. We delivered questionnaires to college students, and then tested the reliability and validity of the questionnaires. Correlation analysis of the research shows that students who have received encouragement and affirmation from their parents have a certain correlation with students who have received encouragement from their classmates and teachers. Studies show that students are more likely to join organizations that offer encouragement and affirmation if it increases their self-confidence. With the rapid development of society, people pay more and more attention to economic benefits and ignore people's feelings. Every day, college students are under pressure from many aspects, such as study, employment, interpersonal and social problems, which makes them more and more eager for comfort and encouragement. Today, with the rapid development of information technology, it is necessary to actively integrate big data with psychology and grasp the opportunities in the era of network big data.

**Keywords:** Big Data · Negative Emotions · College Students · encourage

## 1 Introduction

Suicide is currently the fifth leading cause of death in China and the leading cause of death for young people aged 15–34. Specifically, depression accounted for the largest proportion of suicides. In the whole society, some scholars have monitored and dealt with “suicide holes” such as micro-blogs. Records show that big data saves about 50 lives every month. About 600 to 800 suicides have been prevented by big data over the past year (Institute of Psychology, Chinese Academy of Science, 2022). Such an effort of big data is of great importance to society. Therefore, this paper advocates the use of relevant means to the campus network, which has a better information processing for college students. However, around us, there may lurk the possibility of suicidal behavior. For this reason, we should keep on exploring (Li Ang, Zhu Tingshao et al. 2015; Le Guoan, 2016).

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College students are in an emotional state. It is normal to experience a variety of negative emotions when encountering setbacks and failures. However, you can't let your negative emotions control you. To this end, we need to use appropriate methods, such as listening to music, exercise, talk to someone and so on. According to Dr. Harold F. Foss, a well-known US psychologist, "Hugging can eliminate depression, which means the immune system works better; Embracing can inject new energy into a tired body, making you feel younger and more energetic. "In families, a daily hug will strengthen relationships and greatly reduce family conflicts."

Through investigation and research, it is found that college students need this kind of moral support. Therefore, it is worth discussing whether it is possible to alleviate some negative emotions by using the above methods to release "encourage" to relevant personnel. This paper proposes that if the data in the campus network is "precipitated" by big data, it is possible to better discover the psychological problems of related students.

## 2 Psychology and Contemporary College Students

Emotion is an important research object of psychological research. It is also the research field the most closely combined with big data and with the most abundant results so far. Given this, this paper conducted a questionnaire research at a university in Dalian.

Reliability was first introduced into psychometric by Spearman in 1904, which refers to the degree of consistency or reliability of test results. In general, we mainly consider the internal reliability of the scale -- whether there is a high internal consistency among the questions contained in the questionnaire. Cronbach's coefficient is the most commonly used internal reliability measurement indicator, mainly used to evaluate the consistency of continuous variables and ordered categorical variables. Cronbach's  $\alpha$  coefficient should be between 0 and 1. In this study, Cronbach's  $\alpha$  coefficient of the scale is 0.728, the reliability of the scale is acceptable.

KMO is used to check the partial correlation between variables, and the value is between 0–1. The closer the KMO value is to 1, the stronger the partial correlation between the variables is, and the better the factor analysis effect is. In practice, above 0.7, the results are better. In this study, KMO value is 0.732, the result extremely suitable for factor analysis.

## 3 Release of College Students' Emotional Questionnaire

Different parents have different degrees of encouraging education. Accordingly, encouraging education is also the so-called appreciation education method. There are advantages and disadvantages to encouraging education. For its benefits, the appropriate encouraging education can make the child learn in a loose, harmonious, happy atmosphere; at the same time, it can also increase children's confidence. For its disadvantages, excessive encouraging education may lead to a decline in children's ability to resist frustration. However, to avoid such bad things happening, we only need to give children proper encouragement (Figs. 1 and 2).

The word "encourage" means to inspire, encourage, or cheer up. Encouragement can make people progress. No matter in eastern countries or western countries, people

1. Have you ever been encouraged and affirmed by parents?

Option	Subtotal	Percentage
Have been encouraged	264	59.73%
Have been encouraged not frequently	110	24.89%
Have rarely been encouraged	43	9.73%
Have never been encouraged	25	5.66%
Number of valid answers	442	

**Fig. 1.** Proportion of student shaving been encouraged by parents

2. Have you even been encouraged by teachers and classmates?

Option	Subtotal	Percentage
Have been encouraged	245	55.43%
Have been encouraged not frequently	126	28.51%
Have rarely been encouraged	49	11.09%
Have never been encouraged	22	4.98%
Number of valid answers	442	

**Fig. 2.** Proportion of students having been encouraged by teachers and other classmates

regard encouragement as the oasis of the human heart. Thus, encouragement plays a very important role in everyone’s life and growth. This also corresponds to the data in the table. More than 95% of people have received encouragement from their classmates and teachers, whereas the degree that each person is encouraged is different (Fig. 3).

Whenever we finish something, we are always eager to let our parents, teachers and classmates see the results, because we want to be praised. If they don’t notice the feelings we want to be noticed by others and ignore such spiritual encouragement, we get frustrated sometimes. In the time of loss, we may turn to the negative side. Therefore, most students are eager to get encouragement and affirmation from others (Fig. 4).

For different people, they treat encouragement and affirmation differently. Some people feel empowered; others, however, feel that the road ahead is full of difficulties (Fig. 5).

More than 70% of college students were willing to join such organizations that encourage self-affirmation, which also shows that current college students psychologically need others’ affirmation to a large extent (Fig. 6).

3. Are you willing to be encouraged and affirmed by parents, teachers and classmates?

Option	Subtotal	Percentage
Eager for being encouraged	129	29.19%
Look forward encouragement in a normal way	188	42.53%
Want to be encouraged sometimes	77	17.42%
Not wanting to be encouraged	48	10.86%
Number of valid answers	442	

**Fig. 3.** Proportion who want to be encouraged

4. Are you getting more confident when encouraged and affirmed by others?

Option	Subtotal	Percentage
Will be confident definitely	229	51.81%
Will be confident	115	26.02%
May be confident	63	14.25%
There will be no confidence	35	7.92%
Number of valid answers	442	

**Fig. 4.** Encouragement increases the recognition of the confidence

5. Will you join an organization that affirms you?

Option	Subtotal	Percentage
Willing to join	160	36.2%
Try joining	163	36.88%
Whatever	74	16.74%
Totally not interested	45	10.18%
Number of valid answers	442	

**Fig. 5.** Will you join organizations that encourage each other

6. If you want to join the organization, what is your reason?

Option	Subtotal	Percentage
To be encouraged and affirmed by others	121	27.38%
Just interested	165	37.33%
Want to help others	96	21.72%
Others	60	13.57%
Number of valid answers	442	

**Fig. 6.** What are the reasons for joining an organization

More than 60 percent of students were interested in encouraging each other, and we are pleased to find that another 20 percent of students wanted to help others voluntarily. By getting encouragement ourselves, we can help others regain their confidence.

Correlation analysis refers to the analysis of two or more variable elements with correlation, so as to measure the degree of correlation between two variable factors. Correlation analysis can only be carried out if there is a certain relation or probability between relevant elements (Fig. 7).

According to the research, the students who have been encouraged by their parents will have a certain correlation with the students who have been encouraged by their teachers and classmates. In other words, students who feel cared by their parents are more likely to feel cared by their teachers and classmates. Or students who have been cared by their teachers and students are more likely to feel cared for by their parents (Fig. 8).

Items	Average value	Standard deviation	Have you ever been encouraged by parents	Have you ever been encouraged by teachers and classmates
Have you ever been encouraged by parents	1.61	0.88	1	
Have you ever been encouraged by teachers and classmates	1.66	0.86	0.58**	1

\* p<0.05 \*\* p<0.01

Fig. 7. Correlation study 1

Items	Average value	Standard deviation	Are you getting more confident when courage and affirmed by others	Will you join an organization that affirms you
Are you getting more confident when courage and affirmed by others	1.78	0.97	1	
Will you join an organization that affirms you	2.01	0.97	0.52**	1

\* p<0.05 \*\* p<0.01

Fig. 8. Correlation study 2

Studies show that students are more likely to join organizations that offer encouragement and affirmation if it increases their self-confidence. So if you want to encourage students to join the encouragement and recognition of the organization, it is better to let the students get encouragement and recognition. It can also be seen from this conclusion that increasing encouragement for students is beneficial for students to encourage more students.

#### 4 Psychological Research on Big Data

In today's Internet development trend, what we can't get in the family of origin and the society of struggle, we can get in another way. In March 2019, a classmate from Xi'an Jiaotong University set up a mutual praise group on QQ. That is, no matter what happens in the group, you will be encouraged and praised by others. You will be encouraged and

praised when encountering setbacks in work and study, and you will be encouraged and praised when failing in interpersonal communication. The group soon became an Internet sensation, and other universities followed suit. There are not only praise groups, but also happy groups, forgiveness groups and a series of group chat groups designed to encourage and affirm group members.

On the contrary, behind this phenomenon, it is reflected that college students are facing more and more pressure, and the accumulation of negative emotions is more and more deep. Over time, students cannot help but have a negative psychology. Therefore, college students will join such a group where they don't know each other to seek positive encouragement and self-relaxation (Xinhua net, 2019). Just as Chen Canrui, a PhD psychologist and professor at the Department of Applied Psychology at Guangzhou Medical University, said, even if the compliment from a stranger does not sound sincere, when a person is praised, he or she will feel less pressure and satisfy his or her self-esteem. The birth of boast group is also a helpless move for college students to seek self-esteem.

In fact, as early as 2016, Zhu Tingshao, a researcher at the Institute of Psychology of the Chinese Academy of Sciences, began to use social networks (Sina Weibo) to find users who have the intention to commit suicide to conduct psychological counseling and theoretical transmission through private messages. The initial work was difficult to carry out, whereas it had a profound impact on the development of social network suicide intervention.

According to Zhu Tingshao's research, in social media analysis of suicide prevention: (1) users at high suicide risk show unique behavioral and linguistic characteristics when using social media, i.e. low social activity, high self-concern, preference for negative, death or religious words, and less work-related words; (2) Suicide risk prediction models based on social media behavior and language features can effectively identify users with high suicide risk.

Here is an example of a suicidal student. If you ask questions on websites such as Baidu, Zhihu, Douban and Google about suicide types, preparation process, method implementation, etc., you need to pay close attention to the entry, especially when problems are relatively easy to occur. For example, people are more likely to have negative emotions at night than during the day; People are more likely to be negative in winter than in summer; Some people feel particularly lonely during the holidays. Thus, in the relative time, feelings may be particularly real and need more attention. In this case, if the duration is short, students can be given some positive hints on search engines such as Baidu (similar to the form of recommendation ads) to give love, care and affirmation.

## 5 Conclusions

In recent years, more and more students' studies have been conducted on Internet big data, showing great development potential and vitality.

More than 80 percent of students thought hugging could reduce negative emotions, and over 80 percent of students considered that hugging could make people feel happy. If there was an organization that could encourage each other to hug, more than 70% of students were willing to participate. In the case of verbal bragging and actual hugging,

more students thought the actual hugging was more likely to produce an effect than verbal bragging. Therefore, if relevant problems are detected by the data, it is worth discussing whether it is possible to alleviate the negative emotions of some college students through potential advertising.

As for students, we should pay special attention to the protection of data. First of all, we should maintain privacy when cleaning data. For this situation, we should keep the “matter not the person” and not take the way of preaching. In addition, when the situation requires communication with the relevant school, we should pay attention to the way of communication and communication skills. We don’t want students to feel “watched.” That defeats the purpose. If students feel unhappy and change the network, it is not conducive to further data collection during the school. Thirdly, relevant teachers cannot prevent students from seeking information. After all, in the stage of Internet information explosion, students can search for any information they want. We are better suited to care and advice than to criticism and instruction.

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