

Analysis of Chinese College Students' Attitudes towards Cognitive Enhancement in Education

Ma Lan

Marxism School, Jiangnan University, Wuhan, China

ABSTRACT: Cognitive enhancement implies that clinical disease-unrelated interventions with new psychopharmacological drugs and technical means raise brain and enhance physical, mental and cognitive functions. Cognitive enhancement drugs are popular with healthy college students in America. Over the discussion of Cognitive enhancement exists, but the views of college students that have been largely absent from the discussion. It is necessary to analyze the attitudes of the college students in China with more and more cognitive enhancement are used in education. The data collected suggest that the college students nowadays in China are interested in the cognitive enhancement and tend to cautiously accept cognitive enhancement for the purpose of education even as they recognize its potential risk. Taken together, these data might be helpful to various ethical arguments which are for and against cognitive enhancement in education. Arguments whether for and against cognitive enhancement have its own reasons. We need interdisciplinary discussion, especially if we seek to the public policy in the future in China.

KEYWORD: Cognitive enhancement; education; attitude

1 INTRODUCTION

Although we now face global issues, much of our activities are concerned with the emerging technology, such as information technology, neuroscience, and psychology. Regarding cognitive enhancement, neuroscience provides a considerable amount of data related to cognitive processes in education, such as learning, memory, attention, motivation, emotion, etc., which can be useful in the education field. Some ethical disputes and social issues are proposed in professional and academic field. On campuses, cognitive enhancement drugs such as methylphenidate, amphetamine, modafinil are developed as treatment for attention-deficit and sleep disorders are proving popular with health students with the aim of improving cognitive performance. Surveys suggest up to 16% of American college students have used psycho-stimulant drugs for cognitive enhancement purposes.[1] However, we don't know the attitudes of college students of China.

Cognitive enhancement is a kind of clinical disease-unrelated interventions with new psychopharmacological drugs and technical means raise brain and enhance physical, mental and cognitive functions. Referring to education, it means

students use it for better memory, emotion, and performance. There are different attitude between biological conservative ethicists and technological optimistic ethicists. The former fear and worry about the negative functions of cognitive enhancement while the latter support the use in college students for better memory, better emotion, better life. However, the disputes are various for different arguments. In order to be responsible for the technology use for college students, it is necessary to know the ideas about cognitive enhancement for themselves. Some data are made in Australian college students. Australian college students don't think cognitive enhancement are acceptable for them and regard it is unethical, so they support government should prohibit from the use of cognitive enhancement.[2] From the practical standpoint, understanding Chinese college students before cognitive enhancement are widely used in China.

2 EXPERIMENTAL METHODS

In order to ensure the effective data for the samples, we have interviewed 29 college students including 14 male college students and 15 female college students with ages from 19 to 22 years living in

different universities in different cities in China, and from different major background of history, literature, computer, and electronic information and different family. Of course, were presented with a brief demographic questionnaire though e-mail and they tend to accept this kind of questionnaire survey. Participants are provided informed consent and we used a semi-structure design, with a list of open questions. Additionally, we give different optional context for participants to explain the reason behind their choices. To confirm the participants fully understand the context of the survey, we have a communication through telephone to ensure their understand capacities. Data were analyzed using SPSS. The questions what we design in the survey and the results are as follows:

(1)Do you know the cognitive enhancement?
Yes or no.

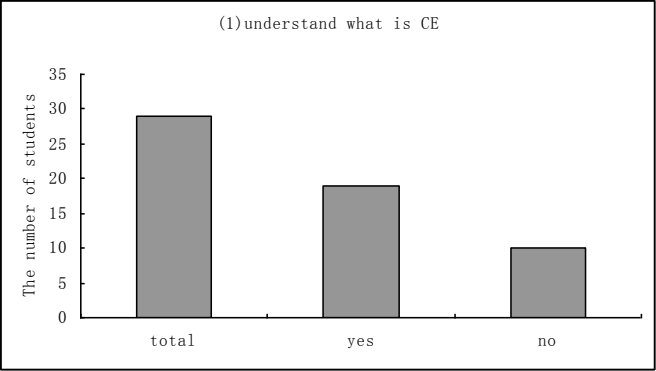


Fig.1 understand of CE

(2)Will you use cognitive enhancement?
Yes or no.

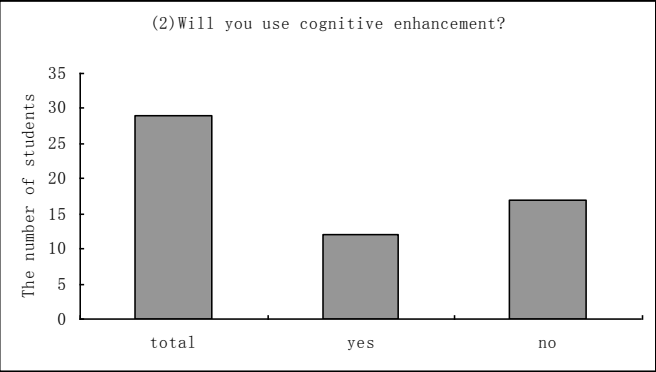


Fig.2 will of using enhancement

(3)What are the reasons you are against the cognitive enhancement?
Unsafety, unfair, violate the human identity, unnatural

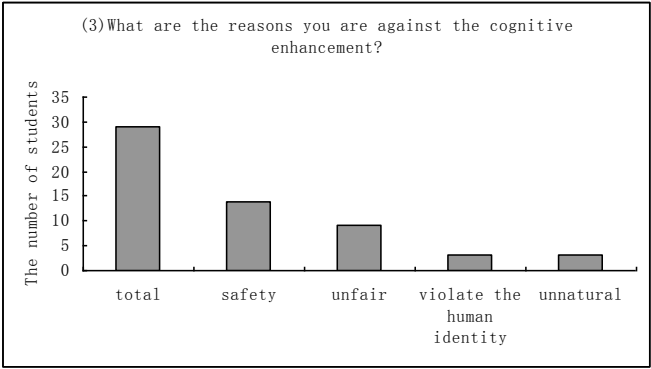


Fig.3 reasons against CE

(4)What are the reasons you are for the cognitive enhancement?
Improve test score, enhance capabilities to learn and to remember, decrease the pressure of competition, respect to the autonomy and individual right

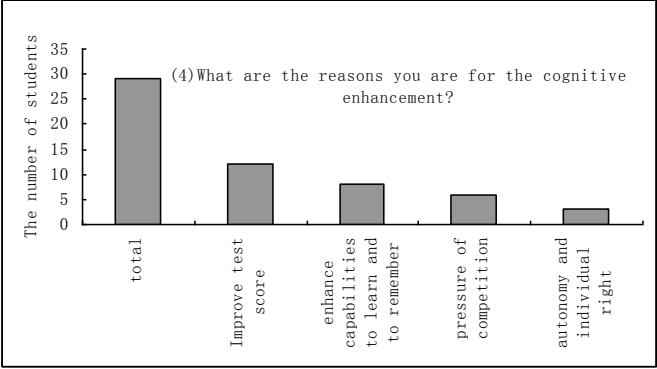


Fig.4 reasons for CE

3 ANALYSIS AND RESULTS

3.1 Concept of cognitive enhancement

Figure 1 shows that 17 college students of 66% participants understand cognitive enhancement. When referring to the division between treatment and enhancement, they have no ideas how to define it. Enhancement means raise the capacity of memory, mood, performance for healthy college students. Treatment is for the people with disease. Why it is not easy to divide? The psychopharmacological substances for Alzheimer’s disease, ADHD or narcolepsy have potential cognitive enhancement for healthy people. Many students could take the drugs for the purpose of enhancement. So many disputes exist. Though 12 college students of 34% participants don’t know the exact concept of cognitive enhancement, it is not difficult for us to tell them the concept. And then they will understand it soon.

3.2 Attitudes when referring participants themselves

Figure 2 showed that 12 college students of 41% participants will use cognitive enhancement. On the contrary, 17 college students of 59% participants don't use cognitive enhancement. Let us go to analyses the third and the fourth graph. We might find the reasons why the attitudes are different.

3.3 Safety, unfair, human identity, unnatural

According to figure 3, those who are against the cognitive enhancement have several reasons provided. Among them the safety of cognitive enhancement of technology or drug is the primary fear. The same as the genetically modified food, people worry about the risk to the body and the potential risk to the generation. Though the participants are not the experts of the cognitive enhancement, they consider the balance between benefit and harm. Referring to the unfair, they also show the unfair competition between the students who can afford the cognitive enhancement to improve their score and those who can't afford it. Privileged students already enjoy many advantages over their less wealth peer. In China, inequality is a general social phenomenon in education. Thus unfair is not the primary concern they are against cognitive enhancement. When analyzing the attitudes towards the safety and unfair, they think wealth students taking cognitive enhancement drugs even take the risk of the drugs. And only 3 students of the 29 and only 10% participants are concerned with human identity. And the same proportion to the attitudes of unnatural issues to human being. It suggests the culture and religion reason in them. Most of the college students in China have little faith of any religion and they don't argue the natural issues and dignity are the problems during the cognitive enhancement. However, more western college students think dignity and unnatural issues are important. The dignity of living a real life without any enhancement is a mainstream culture value in western society. If some material is operated in your brain to raise the capacity of memory of mood, according to western culture it is not natural again and change your own personal identity.

3.4 Scores, enhance capabilities, pressure of competition, autonomy and individual right

According to figure 4, those who are for the enhancement cognitive in education argue that the benefit the individuals are able to gain to expand all kinds of chance in education and social competition. However, it is showed that 12 college students of the total 29 care about mostly the score for the pragmatics standpoint. The proportion is higher than the other reasons and it is 10% of the participants. Scores the first intrinsic values for the college students compare to other values. From the education viewpoint, students have higher scores means more chances and more active praise from school, family and the society in China. Referring to the capability they will get through cognitive enhancement, 8 college students of the 29 think it is important reason to oppose cognitive enhancement. Those who are for the enhancement cognitive in education argue that the benefit the individuals are able to gain to expand all kinds of chance in education and social competition. However, it is showed that 12 college students of the total 29 care about mostly the score for the pragmatics standpoint. The proportion is higher than other reasons. Moreover, decreasing competition pressure in society is the unforeseen future aim they will face after graduation. 28% participants emphasize their attitude approving of cognitive enhancement for the purpose of competition. Less students pay attention to autonomy and individual right. The proportion is only 10%. Autonomy and right mean all kinds of free arguments for individual in democracy society. In China college students are concerned more benefits than autonomy and right.

REFERENCES

- [1] Schermer, M. (2008) The future of psychopharmacological enhancements: Expectations and policies. *Neuroethics*, 2, 75-87.
- [2] Bell, S., Partridge Brad. (2013) Australian University Students' Attitudes Towards the Acceptability and Regulation of Pharmaceuticals to Improve Academic Performance. *Neuroethics*, 6:197-205.