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The Influence of Attribution Style on Academic Self-efficacy among College Students

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Abstract

Objective: To explore the current status of attribution style and academic self-efficacy among college students, and analyze the relationship between the above two variables. Method Five hundred and twenty-two college students were selected randomly from Guangdong Province. They were investigated with Internal-External Locus of Control Scale (I-E) and Academic Self -Efficacy Scale (ASES).

Results: The total scores of I-E and ASES in this group were (13.56±4.61) and (70.36±11.45), respectively. The total score of I-E negatively predicted the score of academic ability self-efficacy (AABSE) (β=-0. 394, P<0. 001), academic conduct self-efficacy (ACOSE) (β=- 0.519, P<0.001) and academic self-efficacy (ASE) (β=- 0.449, P<0.001).

Conclusion: The attribution style and academic self-efficacy of college students need to be improved, and attribution style may be an independent influencing factor of academic self-efficacy.

Keywords: college students; attribution style; academic self-efficacy; influence factor

Introduction

Attribution refers to the process by which people infer the reasons behind the actions of others or themselves. Specifically, it refers to the causal explanation and inference made by the observer regarding the behavior process of others or their own behavior process. Attribution is an automated function of the human brain. Whenever something happens, people should consciously or unconsciously search for its cause to reduce confusion and guide subsequent actions [1]. Attribution style refers to the relatively stable attribution tendency formed by individuals in the long-term process of inferring and judging the causes of behavior based on relevant information and clues. The concept of locus of control proposed by social psychologist Rotter (1966) [2] is the foundation of attribution theory. Control source, which refers to the individual's belief that the source of factors that affect their success or failure is due to internal or external environmental factors. Rotter believes that some people tend to attribute success to their own efforts and failure to personal negligence. This view of being responsible for one's own behavior is called the view of internal control. Some people attribute success to luck and failure to external factors such as luck, task difficulty, teacher assistance, etc. This view of their unwillingness to take responsibility for their actions is called the external

control view by Rotter. Weiner (1972) believes that locus of control is mainly related to a person's self-esteem, and attributing success to internal factors generates pride and confidence, strengthening action motivation. On the contrary, attributing failure to internal factors reduces self-esteem and confidence. People have different attributions to success or failure in different contexts, and have a significant motivational effect on their subsequent behaviors.

Academic self-efficacy refers to students' expectations and judgments about their ability to complete a certain learning task or engage in a specific learning activity. It is an individual's self-belief in academic ability and a manifestation of self-efficacy in the academic field. Academic self-efficacy can be divided into two types: academic ability self-efficacy and academic conduct self-efficacy. Academic ability self-efficacy refers to an individual's judgment and confidence in their ability to successfully complete their studies, achieve good grades, and avoid academic failure. Academic conduct self-efficacy refers to an individual's judgment and confidence in whether they can adopt certain learning methods to achieve learning goals. It can be seen that self-efficacy in academic has three characteristic dimensions: difficulty, breadth, and intensity. Difficulty is the degree to which students believe they are capable of completing a task. Students with high academic self-efficacy tend to believe that they can complete

difficult tasks, while students with low academic self-efficacy tend to believe that they can only complete easier tasks [3]. Students with high self-efficacy tend to set higher learning goals, choose learning tasks that are suitable for their ability level and challenging to verify their abilities [4]. They have strong learning motivation and high enthusiasm, often using successful scenarios for self-suggestion, guiding themselves to overcome difficulties, solve problems, and achieve better academic results optimistically and persistently, thereby gaining greater confidence [5]. Students with low self-efficacy tend to set lower learning goals, choose confident and easy learning tasks, and avoid learning tasks that they feel uncontrollable in order to avoid unpleasant experiences caused by failure, and maintain their self-worth. Their learning motivation is weak and their enthusiasm is not high. They often use failed scenarios for self-suggestion, being pessimistic, anxious, avoiding difficulties, easily giving up efforts, and unable to achieve better academic results, resulting in a decrease in confidence. The breadth reflects the range in which students' academic self-efficacy can be improved. Students with high academic self-efficacy tend to believe that they have learning confidence in multiple subjects and most chapters, while students with low academic self-efficacy tend to have the opposite. Intensity refers to the degree to which students are confident that their behavior can achieve the specified operational goals. For example, students with high academic self-efficacy believe they have 100% confidence in completing some homework, while students with low academic self-efficacy have only 20% confidence in completing it.

As an individual's subjective judgment of the effectiveness of their interaction with the environment, academic self-efficacy does not appear out of thin air, but is gradually formed through long-term learning and practice based on certain experiences or information. Social learning theory suggests that an individual's self-efficacy beliefs about their own intelligence and abilities are primarily built upon the efficacy information provided by four sources of information: firsthand mastery experience, substitute experience (observed experiences of others), verbal explanation, physiological and emotional states. The impact of these four sources of information on self-efficacy is different and not automatic, but requires individual cognitive processing to integrate the four sources of information in order to form subjective evaluations of abilities [6]. Therefore, the cognitive processing process of students, especially the attribution style, affects the effect of various information sources on academic self-efficacy. For example, attributing success to ability will enhance academic self-efficacy, and attributing failure to unstable factors such as insufficient effort, difficult tasks, and bad luck will not reduce academic self-efficacy much. If success is attributed to external factors rather than one's own abilities, it will not greatly enhance academic self-efficacy, while attributing failure to abilities will greatly reduce students' academic self-efficacy [1].

In summary, the impact of attribution style on academic self-efficacy has attracted academic attention, but previous literature has mostly focused on theoretical analysis of the relationship between the two, with limited empirical research. This study aims to focus on college students and use a large sample, multicenter questionnaire survey to empirically analyze the impact of attribution style on academic self-efficacy.

Objects and Methods
Objects
Five hundren and fifty undergraduates were randomly selected from Guangdong Province, and 522 valid questionnaires were collected, with an effective rate of 94.91%. Among them, there are 253 males and 268 females; 133 freshmen, 128 sophomores, 133 juniors, and 127 seniors.

Tools

Interal-External Locus of Control Scale, I-E
Compiled by Rotter (1996) [7], revised by Yu Xin et al. (1999) [5] into Chinese version. I-E has 29 items, including 23 scoring items and 6 insertion questions. Each item consists of a pair of internal and external control statements, requiring participants to choose one from them. Score the external control choices of the subjects, with higher scores indicating stronger external control, while lower scores indicating stronger internal control. The total score ranges from 0 to 23 points corresponding to extreme internal control to extreme external control. The average score is 11, with those above 11 indicating external control and those below 11 indicating internal control. In this study, the Cronbach' α coefficient of the entire scale was 0.744.

Academic Self-efficacy Scale, ASES

Compiled by Liang Yusong and Zhou Zongkui (2000) [8]. There are 22 items divided into two dimensions: academic ability self-efficacy (AABSE) and academic conduct self-efficacy (ACOSE), with 11 items in each dimension. Likert 5-point scoring method is used to score from 1 to 5 corresponding to completely disagree to completely agree. The higher the score, the higher the academic self-efficacy. In this study, Cronbach's α coefficient of the full scale is 0.817, and Cronbach's α coefficients of two dimensions are 0.7638 and 0.7329, respectively.

Data processing

SPSS 20.0 is used for statistical analysis. Descriptive statistics is used to calculate the average score and standard deviation of each scale; Pearson product moment correlation is used to explore the correlation between variables; Linear regression analysis is used to analyze the impact of internal and external control on academic self-efficacy.

Results

An overview of attribution style and academic self-efficacy among college students

As shown in Table 1, the total score of ASE and the scores of AABSE and ACOSE are both moderate scores [8], while the total score of I-E are relatively high [2, 7].

Table 1: Descriptive statistics of ASES and I-E (n=522)

	M	SD	Min	Max	Item number	M of item	SD of item
AABSE	36.62	6.78	17	52	11	3.33	.62
ACOSE	33.74	5.16	22	47	11	3.07	.45
ASES	70.36	11.45	43	91	22	3.20	.52
I-E	13.52	4.61	1	22	23	0.50	.20

The influence of attribution style on academic self-efficacy among college students

The correlation analysis between attribution style and academic self-efficacy among college students

As shown in Table 2, there is a significant negative correlation between the total score of ASE and the scores of both dimensions with the total score of I-E (r=-0.394~-0.519, all P<0.01).

Table 2: Correlation analysis between attribution methods and academic self-efficacy (r)

Factor	I-E
AABSE	-0.394[**]
ACOSE	-0.519[**]
ASE	-0.449[**]

Regression analysis of the impact of attribution style on academic self-efficacy among college students

Taking the total scores of AABSE, ACOSE, and ASE as the dependent variable respectively, and I-E as the independent variable, linear regression analysis is conducted within a 95% confidence interval, and the results are shown in Table 3. According to Table 3, the negative prediction of AABSE for I-E (β=-0.394, P<0. 001), ACOSE (β=- 0.519, P<0.001) and ASE (β=-0.449, P<0.001).

Table 3: Linear Regression Analysis of Ase Scores to the Total Score Of I-E

Dependent Variable	Independent Variable	B	SE	β	t value	P value	R^2	R_{adj}^2
AABSE	I-E	-0.574	0.108	-0.394	-12.509	<0.001	0.137	0.130
ACOSE	I-E	-0.689	0.144	-0.519	-8.668	<0.001	0.426	0.418
ASE	I-E	-0.725.	0.177	-0.449	5.011	<0.001	0.269	0.265

Discussion

The results of this study show that the total score of ASE and the scores of AABSE and ACOSE are both moderate scores [8], while the scores of the I-E scale are relatively high [2, 7], which is consistent with the research results of Luo Yuqing et al. [3] and Hou Yongmei et al. [9], but inconsistent with the research results of Lai Yueyue et al. [8] (she believes that college

students tend to have intrinsic, holistic, and controllable attributions to life events). The results of this study suggest that the academic self-efficacy of college students is not high and there is still a lot of room for improvement. Their attribution style tends to be external control, and this attribution tendency is increasing year by year. This study finds that attribution style has a significant negative predictive effect on academic self-efficacy, academic ability self-efficacy, and academic conduct self-efficacy, consistent with the results of previous studies [3, 8, 9, 11], suggesting that attribution style is an independent predictor of academic self-efficacy. Correct and reasonable attribution methods lead to positive emotions, expectations, and behaviors, making it easier for individuals to gain confidence and success in subsequent actions. On the contrary, incorrect and unreasonable attribution methods can lead to negative emotions, expectations, and behaviors, causing individuals to self-defeat in subsequent actions. Specifically, the attribution style of internal control enables college students to have a positive and autonomous attitude towards their surroundings, especially their academic life. This helps them to rationally examine the reasons for success or failure, and find areas where they can work hard, change, and control. They are more aware that the effectiveness of learning lies in their own effort and ability, both of which can and must be improved through long-term and persistent systematic learning. That is to say, as long as and only through long-term and persistent systematic learning, an individual's learning ability and ability can and will inevitably be gradually improved. Only when one's learning ability improves can individuals understand and comprehend profound professional knowledge, and achieve good academic results. Therefore, they are willing to adjust themselves to constantly changing learning conditions, such as changing the focus of their efforts, changing learning strategies, adjusting learning plans, strengthening skill training, enhancing communication between themselves and teachers, and classmates, and so on. Through various efforts, one can gradually increase subject knowledge, improve professional skills, cultivate subject thinking, and find suitable learning methods, thereby improving learning effectiveness, achieving better academic results, and promoting the formation of a good sense of academic self-efficacy. On the contrary, the attribution style of external control leads college students to seek reasons from the external world,

believing that the success or failure is due to personal uncontrollable factors such as luck, difficulty of learning tasks, learning resources, or the help of others. Therefore, they are passively waiting for changes in learning conditions and the help of others, fantasizing about obtaining "learning tips", and making them suddenly realize to be a "learning master" or "expert". When this kind of fantasy is shattered, they will experience negative emotions such as depression, anxiety, and a sense of unfairness, believing that they have been treated unfairly and have not received good learning resources like "academic achievers". Therefore, they are prone to jealousy towards "academic achievers", hostility towards teachers and schools, and even interfere and attack "academic achievers", teachers, and experts. The result is that they find it difficult to concentrate on their studies and gain the help of others (especially teachers and academic achievers). Due to the increasing academic setbacks, they are difficult to achieve better academic results, and their academic self-efficacy will also be difficult to improve. That is to say, the attribution style of external control is not conducive to the formation of academic self-efficacy, because this attribution style often leads to unreasonable academic cognition, reduces subjective initiative in learning, and generates negative academic emotions and school adaptation [9, 11].

Conclusion

This study preliminarily proves that attribution significantly predicts academic self-efficacy among college students. Specifically, internal control attribution helps to improve academic self-efficacy, while external control attribution hinders the improvement of academic self-efficacy among college students. Improving the academic self-efficacy of college students is one of the important tasks of higher education. Fully carrying out learning and practical activities and communication activities can help college students gain direct experience of success through gradual efforts, or indirect experience of success or failure through observation and comparison of classmate experiences, which helps to improve their academic self-efficacy. On the other hand, guiding college students to establish correct attribution methods through attribution training, cognitive therapy, and other methods can promote the development of their academic self-efficacy.

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