

## INFLUENCE OF PLC TECHNOLOGY IN ELECTRICAL AUTOMATION CONTROL ON COGNITIVE ABILITY OF STUDENTS WITH ANXIETY DISORDERS IN COLLEGES AND UNIVERSITIES

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**Background:** University is an important educational place in our country. College students are the focus of college education. Students' mental health has always been the main content of college management. Compared with the ordinary high school environment, the university environment has a higher degree of freedom, but with it comes the greater academic and social pressure that students face. Under the influence of this environment, students' psychological emotions will have very obvious changes, of which the most common is students' anxiety. The generation of students' anxiety hinders the development of students' normal studies, and the generation of anxiety will also affect the cultivation of students' psychological quality, making it difficult for students to get timely treatment after the generation of anxiety, thus causing students to have more negative psychological emotions. In psychological research, it is believed that the treatment of anxiety needs to take patients as the main body for psychological counseling. In the university environment, for anxiety students, innovative teaching programs need to be adopted to induce students to think creatively, change the current psychological state, and finally help students build a perfect psychological defense line. Electrical automation control is a common subject teaching in colleges and universities, and its students' anxiety status is very significant. Therefore, how to treat the anxiety disorder of electrical automation control students is of great significance.

The major of electrical automation control covers a wide range of fields, including a series of science and engineering subjects such as electronic technology and electrical technology. In the education of electrical automation control, the emphasis is on cultivating students' practical ability, which has great requirements for students' practical ability. Most college students are used to theoretical learning in high school education, and they often fail to achieve the desired results in practice, which makes it difficult for most students to improve their professional performance, and then there is learning anxiety. With the increase of teaching time, students' anxiety is difficult to be relieved, and will eventually evolve into anxiety disorder. It has been considered that the introduction of PLC technology into electrical automation control can help to improve teaching quality, enhance students' classroom practical ability, improve students' academic performance and alleviate students' anxiety. A large number of studies believe that the relief of students' anxiety symptoms will also affect their cognitive ability to a certain extent. However, in the known studies, the impact of the introduction of PLC technology into electrical automation control on students' cognitive ability has not been deeply analyzed. In view of this, the research deeply analyzes the anxiety relief phenomenon of students after the introduction of PLC technology in electrical automation control, and analyzes the changes of students' cognitive ability, in order to provide theoretical support for the cultivation of college students' psychological quality.

**Objective:** Explore the current teaching situation of electrical automation control, analyze the application of PLC technology in the teaching process, analyze the anxiety status of middle school students in this major, and evaluate the changes of students' psychological anxiety and cognitive ability after the introduction of PLC technology.

**Subjects and methods:** Taking the students majoring in electrical automation control in a university as the research object, 120 students with anxiety disorder were randomly selected and randomly divided into the research group and the blank group. The students in the research group introduced PLC technology into the teaching of electrical automation control, and the students in the blank group used conventional electrical automation control teaching for 6 months. Self-rating Anxiety Scale (SAS) was used to evaluate students' anxiety, and Mini Mental State Examination scale (MMSE) was used to evaluate students' cognitive ability.

**Results:** See Table 1 for the anxiety scores and cognitive ability evaluation of the two groups of students. From Table 1, it can be seen that the changes in the anxiety scores and cognitive ability scores of the students in the research group are more significant than those in the blank group, and the difference is statistically significant ( $P < 0.05$ ).

**Conclusions:** The mental health of college students is a problem that cannot be ignored in college

education. How to realize the cultivation of students' mental health on the basis of improving students' professional level is a problem that needs to be solved in college education. In the research, in order to improve students' professional performance and alleviate students' negative emotions at the same time, taking electrical automation control students as the research object, PLC technology is introduced to carry out course teaching, and the changes of students' anxiety emotions under the optimization of course teaching are analyzed. The results showed that the anxiety of the students who accepted the PLC technology teaching decreased more significantly, and their cognitive ability improved more significantly. The above results show that in the teaching of electrical automation control, the introduction of PLC technology can improve students' cognitive ability and reduce students' anxiety. Therefore, in college teaching, we can alleviate students' negative emotions by improving students' cognition.

**Table 1.** Anxiety score and cognitive ability evaluation of two groups of students

Index	Anxiety score		Cognitive ability	
	Before teaching	After teaching	Before teaching	After teaching
Research group	64.32±4.67	44.36±3.72	20.37±2.62	26.78±2.82
Blank group	64.73±4.19	56.38±3.26	21.48±2.75	23.18±2.27
<i>t</i>	1.287	8.364	0.943	4.316
<i>P</i>	0.576	0.011	0.114	0.032

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## RESEARCH ON THE INFLUENCE OF VIDEO CONTENT ANALYSIS BASED ON CONVOLUTIONAL NEURAL NETWORK ON AUDIENCE'S PSYCHOLOGICAL COGNITION

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**Background:** Cognitive psychology is often used to analyze the processing of information collected by human senses in the brain and the formation of subsequent thinking. It is an interdisciplinary subject combining brain Aeromedicine, traditional psychology and sociology. The research object of cognitive psychology mainly focuses on people's high-level thinking processes, such as perception, attention, memory, language, etc. in contrast to traditional psychological theories, the research scope of cognitive psychology also includes processes that cannot be directly observed, such as reasoning logic based on observed information, storage and extraction of environmental information, etc. Cognitive psychology pays more attention to the internal psychological causes of human behavior, but the process from psychological state to behavior cannot be directly observed. Therefore, psychologists can only speculate and verify this process through the information received by the observed object and the generated behavior. This is also the reason why the research process in the field of cognitive psychology often needs to assemble various social experiments, because social experiments can provide relatively objective data support for the speculation process and conclusions. Specifically, the commonly used experimental methods in cognitive psychology include questionnaire survey, Delphi, interview and so on. With the popularity of 4G networks and smart phones, entertainment and social networking based on short video are gradually known by the world. The application of artificial intelligence technologies such as convolutional neural network in various fields of human life and work will also have a great impact on the development of the short video industry. Because convolutional neural network can be used to build a similarity judgment system for short videos, so as to recommend short videos that users prefer, and increase the user stickiness and loyalty of applications. However, this recommendation method will also bring some unknown effects on the psychological cognition of the audience. In order to reduce its negative effects as much as possible, this study attempts to design experiments to explore the current situation and reasons of the role of short videos based on convolutional neural network recommendation system on the audience.

**Subjects and methods:** Recruit a group of personnel with more than 5 years' working experience in short