
NEWSLETTER

Public Goods Dilemma Experiment: How Will the Pressure & Situational Attribution Brought by the Reward & Punishment System Affect the Cooperative Behavior of Junior High School Students?

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IN school education, the reward system and punishment system, as two common methods of controlling students' behavior, have an important impact on the cooperative behavior of junior high school students. And what is the impact and how does the mechanism work? A study published in *Educational Research and Experiment* used the game experiment of Public Goods Dilemma, the pressure perception questionnaire, and the situational attribution questionnaire to analyze 285 junior high school students:

- In the public goods dilemma experiment, a series of five rounds with different rewards and punishments are designed, including no rewards or punishments, continuous fixed rewards, variable-ratio rewards, continuous fixed punishments, and variable-ratio punishments. The experiment used the amount of the subject coins for dependent variable as an indicator of cooperative behaviors among individuals. The more the amount of the coins, the higher the level of their cooperative behavior. The two experimental rounds of continuous fixed reward and variable-ratio reward are merged into the "reward group", while the two experimental bureaus of a continuous fixed penalty and variable-ratio penalty are merged into the "penalty group" and compared with the no reward or punishment group.
- The perceived stress scale was consisted of 8 items and uses a 5-point marking-system, ranging from 1 for "strongly disagree" to 5 for "strongly agree". The higher the score, the higher the level of perceived stress. The α coefficient is 0.87. As for the situational attribution questionnaire, using 4 items to judge the extent to individual and cooperative concerning the external rewards/punishments or economic. The α coefficient of the questionnaire in this study is 0.84.

The research results are as follows:

- Junior high school students will show more cooperative behavior under the reward system or punishment system. Compared with the continuous fixed reward and punishment system and no reward and punishment system, junior high school students will have more cooperative behaviors under the variable-ratio reward and punishment system;
- The reward system shows the direct and significant effects on the cooperative behavior of junior high school students, and indirectly affects the cooperative behavior of junior high school students through the mediating effect of contextual attribution;
- The punishment system shows the direct and significant effects on the cooperative behavior of junior high school students, and there are three indirect paths: punishment system → perceived stress → cooperative behavior, punishment system → situational attribution → cooperative behavior, punishment system → perceived stress → situational attribution → cooperative behavior.

This empirical study skillfully used game experiments, finding that situational attribution plays a mediating role between the reward system and the cooperative behavior of junior high school students, but the perceived stress does not have a significant mediating role between the two. Therefore, it is concluded that schools should promote both rewards and punishments, guiding students to establish a correct view of rewards and punishments, and educate students to rationally understand and correctly deal with pressure; At the same time, in conjunction with the requirements on adolescents psychological development , the school should establish and improve psychological counseling and mental health education system, and carry out targeted attribution training to guide students to form a positive and reasonable situational attribution method.

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