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Correlation Between Peer Pressure And Learning Efficiency

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Abstract. In the current educational environment, the "involution" culture which is a state of excessive competition and irrational internal consumption is spreading rapidly among high school students, and the impact of peer pressure on students' learning efficiency has become an important topic. This survey aims to explore the relationship between peer pressure and learning efficiency among high school students. A survey was conducted on high school students. To ensure the scientific rigor of the research results, the t-test was used to conduct an in-depth analysis of the data.The results of the study show that in the sample of learning efficiency problems, the average scores of high school students for peer pressure did not show significant differences, which indicates that within the scope of this study, the impact of peer pressure on the learning efficiency of high school students in different situations did not show obvious differences. At the same time, gender factors also did not show significant differences in the relationship between peer pressure and learning efficiency, that is, the changes in learning efficiency of boys and girls when facing peer pressure were indicating that boys and girls exhibited similar patterns of learning efficiency when facing peer pressure. In addition, this study conducted a multi-dimensional cross-analysis of the data to further verify the reliability of the results. These findings provide important implications for subsequent research on high school students' learning behavior, and also provide new ideas for educators to optimize teaching strategies and relieve student stress.

Keywords: Peer pressure; learning efficacy; education; stress.

1. Introduction

In the process of adolescent growth, peer pressure has always been a key factor affecting their development. Especially in high school, when the workload is heavy and self-awareness is gradually taking shape, the impact of peer pressure on learning efficiency has attracted much attention. As early as 1982, Brown pointed out in his research [1] that peer pressure has a profound impact on adolescent development. Although the study did not explicitly address its impact on learning efficiency, it can be inferred from the negative emotions such as anxiety and tension that it causes in adolescents. A study in 2019 on students' peer pressure and academic performance also showed [2] that excessive peer pressure will increase students' psychological burden and interfere with their learning state, such as making it difficult to calm down and focus on learning. Of course, peer pressure is not entirely harmful. A study in 2022 by Chen and Deng found that it has two sides [3]. Moderate pressure can become a driving force, while excessive pressure will breed negative emotions. This study only focused on academic peer pressure. In addition, study in 2023 on interactive learning environments showed [4] that appropriate peer assistance can improve students' classroom participation and learning interest. However, the sample was only taken from Karachi, Pakistan, and the study has geographical limitations.

In addition to peer pressure, learning efficiency is also affected by many factors. For example, a study in 2018 found that the indoor physical environment (temperature, noise, and illumination) has a significant main effect on the learning efficiency of different tasks [5]. This shows that learning efficiency is very easy to change, and high school students face the pressure of further study and confusion about the future. Their learning is affected by a variety of factors such as peer pressure.
During high school, academic performance is of great significance to students' future development, and frequent peer interaction on campus makes peer pressure likely to play a role in many aspects of

learning. Therefore, it is urgent to explore the impact of peer pressure on high school students' learning, which will not only help educators and parents understand the complex factors behind students' learning behaviors, but also help them formulate effective guidance strategies to promote students' academic progress and achieve physical and mental health growth.

2. Literature Review

During adolescent, peer pressure has always been regarded as a key factor affecting their development, especially in high school, where academic tasks are heavy and self-awareness is crucial. The role of peer pressure in learning has attracted much attention. As Brown pointed out in his 1982 study [1], it is generally believed that peer pressure has a significant impact on adolescent development. This study evaluated the extent of peer pressure in many aspects of high school life and the impact of this pressure on adolescent attitudes and behaviors. The study found that peer pressure has a significant correlation with adolescents' dating attitudes, sexual activities, drug and alcohol use, but there is no obvious connection with their relationship with their parents, and peer pressure seems to have a stronger impact on girls than boys. This study mainly conducts a retrospective analysis of the extent and impact of peer pressure on high school students. Although it does not directly mention that high peer pressure will lead to low learning efficiency, the correlation can be inferred from the relevant research results. The article mentioned that two-thirds of men and women regard peer pressure as one of the difficulties faced by adolescents. Strong peer pressure can easily cause adolescents to have negative emotions such as anxiety and stress. This further leads to adverse changes in learning and life.

Similarly, in recent years, in a study on peer pressure and academic performance in school in 2019 [2], the relationship between peer pressure and academic performance was studied. This article also mentioned that excessive peer pressure can cause students to have negative emotions such as anxiety and tension, causing a heavier psychological burden. In this negative psychological state, students may find it difficult to concentrate when studying, and their thinking ability and memory will also be affected.

However, we cannot deny that peer pressure will not bring benefits to students. For example, in the study by Chen and Deng in 2022, the research was mainly conducted through literature review [3]. They referred to the research results of predecessors in peer pressure, family environment influence, psychological stress regulation and other aspects, such as citing the research of scholars such as Xie Yueying and Zhang Rong, and comprehensively analyzed the influencing factors, impacts and coping strategies of peer pressure of college students. The final result found that peer pressure is a double-edged sword. Peer pressure has two sides for college students. For adolescents whose minds are not mature enough, the positive impact of pressure may not be as significant as that of college students. Moderate pressure may bring motivation, while excessive pressure will cause adolescents to lose confidence and produce negative emotions such as anxiety. Secondly, the correct way to deal with peer pressure is to let adolescents correctly understand and deal with pressure, enhance psychological resilience, cultivate a healthy perspective on pressure, and transform pressure into motivation rather than a source of anxiety. At the same time, this study has limitations. The article only discusses academic peer pressure and does not involve social peer pressure (such as peer-induced drug use, drinking and other bad behaviors).

Based on the results of previous studies, it can also be found that appropriate peer assistance can enhance students' participation in class and interest in learning. For example, in a study in 2023 on interactive learning environments [4], the effects of social interaction, social presence and social media use on collaborative learning were explored, and their effects on student learning performance were further clarified. Among the 398 students participating in the survey, 63.3% were male and 36.7% were female. Structural equation model (SEM) analysis found that peer interaction (standardized regression coefficient $\beta=0.287$, $p<0.01$), teacher-student interaction ($\beta=0.240$, $p<0.01$), social presence ($\beta=0.174$, $p<0.01$) and social media use ($\beta=0.230$, $p<0.01$) all had a significant positive

effect on active collaborative learning. This shows that relaxed and pleasant interactions with others can be helpful for learning. This study uses constructivist theory to confirm that collaboration and participation can enrich learning performance through group discussions and the integration of social factors. However, the experiment also has certain limitations. The data comes from cross-sectional survey analysis, so caution is needed when interpreting the relationship between variables. The sample was only taken from Karachi, Pakistan, so the results have geographical limitations.

Secondly, there are many aspects that may affect students' learning efficiency, such as noise, environmental choice and so on. For example, a study in 2018 on the impact of indoor physical environment on learning efficiency of different tasks [5] took 10 college students aged 20-24 (5 males and 5 females) as the subjects. They were required to have no unhealthy habits, no diseases, normal vision or normal vision after correction, and more than three years of local living experience. During the experiment, the subjects' diet, work and rest and activities were strictly restricted. The study selected Rochester's characteristic word test, meaningless image recognition, reading comprehension and digital search test to represent perception, memory, problem solving and attention-oriented tasks respectively. Learning efficiency was measured by accuracy, reaction time and performance indicators. The subjects were trained before the experiment. Each task lasted approximately 10 minutes, with a 5-minute interval between tasks. Professional instruments were used to measure environmental factors in data collection and analysis. Normality tests were performed after data collection. After the non-normal data was transformed into logarithmic normal, SPSS 22.0 software was used to perform multivariate analysis of variance (MANOVA) of the full factorial model to explore the main effect and interaction effect of environmental factors on learning efficiency. The results showed that indoor physical environmental factors (temperature, noise, illumination) had significant main effects on the learning efficiency of perception, memory, problem-solving and attention-oriented tasks. The optimal environmental scenes for different tasks were determined based on PI. Perception tasks were most efficient in thermal neutrality (around 22°C), relative quietness (less than 50dB (A)) and brightness (2200Ix); memory tasks performed best in warm (around 27°C), relative quietness and medium illumination (300lx); problem-solving tasks were most efficient in thermal neutrality, fairly quiet (40dB (A)) and medium illumination (300Ix); and attention-oriented tasks had the highest peak efficiency in coolness (17°C), fairly quiet and bright environments. In the perception task, temperature significantly affects accuracy (AC), and illumination significantly affects reaction time (RT) and final performance index (PI); in the memory task, temperature, noise and illumination significantly affect RT and PI; in the problem-solving task, temperature and noise significantly affect RT, noise and illumination significantly affect PI; in the attention-oriented task, temperature and noise significantly affect RT, and temperature significantly affects PI. From this experiment, it can be seen that the learning efficiency of the same person in different environments will be different, indicating that learning efficiency is very easy to change. Not to mention in high school which is a period full of various pressures and confusion about the future.

In high school, students face pressures for further education, and academic performance is crucial to their future development. In the campus environment, peer interaction is frequent, and peer pressure is likely to play a role in learning goal setting, study time allocation, and learning method selection. Therefore, it is necessary to further explore the impact of peer pressure on high school students' learning, which will help educators and parents better understand the factors behind students' learning behaviors, so as to formulate more effective guidance strategies to help students make academic progress and achieve healthy growth.

3. Method

This study aims to explore the impact of peer pressure on adolescent learning efficiency. It adopts a variety of research methods, among which the revised Peer Pressure Questionnaire (PPQ-R) [6] is used as the core measurement tool.

Regarding the self-test of learning efficiency, no direct questionnaire was found for high school students to measure. So that four questions were used: "Are you often distracted in learning?", "Can you stay focused in learning?", "Do you often forget the knowledge you just learned?", "Do you have a fixed learning method?", and these four questions were used to judge the students' learning efficiency and compare the relationship between the two sides.

The higher the score, the greater the stress. The scale is derived from the PPQR questionnaire. After two to three weeks, the questionnaire distribution is completed, and the results are checked within the questionnaire star which is an app for questionnaire. The research objects are mainly facing high school students in China. The sampling method is based on the questionnaire star translation of the PPQR questionnaire and the related questions of learning efficiency. Then generate QR codes from questionnaire star and distribute them online to high school students around the world. T-test detection of peer pressure and learning efficiency using SPSS within questionnaire stars.

This study focuses on the relationship between peer pressure and learning efficiency. The following is a T-teat measure of each learning efficiency, Sum1 is a score of peer pressure, see table1, 2.

Table 1. Results of t-test between peer pressure and “do you often forget what you have just learned”

	"Do you often forget the knowledge you just learned?"		
	Yes(n=25)	No(n=15)	T P
Sum1	66.84±16.12	71.07±16.16	-0.802 0.427

Table 2. Results of t-test between peer pressure and ‘do you have a fixed learning method’

	"Do you have a fixed learning method?"		
	Yes(n=17)	No(n=23)	T P
Sum1	72.65±16.35	65.30±15.46	1.450 0.155

Using t-test detection to explore the correlation between peer pressure and learning efficiency, the results show that the learning efficiency problem samples do not show significant ($p > 0.05$) for all peer pressure comprehensive scores, which means that the learning efficiency problem samples all show consistency for peer pressure comprehensive scores, and there is no difference.

In addition, the sample of the learning efficiency problem did not show a significant difference in the average score of peer pressure. T-test did not detect the sum score of peer pressure, and there were significant differences in each problem related to learning efficiency. See table2, 3. Direct positive or negative associations were not detected between men and women and peer pressure. See table3. The limitations of the current study are the small sample size, which is currently the biggest problem, with only 42 samples. Second is the issue of the gender ratio, with only 20% of boys. There are also sample areas mainly distributed in central China, and no national data was collected, which will have some limitations for high school students representing the whole of China.

Table 3. Results of correlation between peer pressure and gander

			Sum1
Your gender	Correlation rate		-0.233
	P		0.142
	Sample size		42

4. Discussion

Parents should always pay attention to the mental state of high school students, not just when obvious signs of anxiety or depression appear. If high school students frequently mention a classmate's academic performance or other learning-related topics, parents need timely guidance and do not let students fall into anxiety.

In schools, teachers should avoid frequently comparing individual students, which is actually a major blow to students' self-esteem and other aspects, which further strengthens peer pressure among students. At the same time, teachers can also encourage students to compare with similar grades to motivate students to learn.

For students themselves, don't focus too much on their peers, focusing on their own studies can improve their learning efficiency, but if students are not motivated, it is also a good choice to look at peers with similar grades to motivate yourself. If students encounter a situation of excessive peer pressure, they can try meditation or engage in enjoyable activities to relax their mind and body. Cazan used two methods in his 2013 experiment [7]. One of them was a self-reflection method, which guided students to reflect on themselves. For example, students wrote learning diaries, reviewed their learning content and summarized their experiences and lessons during the recording process; conducted group reflection to promote students to exchange learning experiences and inspire each other; organized self-assessment activities to allow students to evaluate their own learning performance and identify their strengths and weaknesses; and used self-regulation questionnaires to help students understand their own learning status so as to adjust their learning strategies. This study selected 79 freshmen from the School of Psychology and Educational Sciences as samples. The average age of these students was 21.2 years old. The researchers adopted a single experimental group and no control group experimental design, which included three experimental stages, namely one pre-test and two post-tests. During the experiment, at three different time points (at the beginning of the experiment, 3 weeks later, and at the end of the semester), a 15-item scale was used to measure students' self-regulatory learning strategies. The scale covered three aspects: metacognition, motivation, and behavioral strategies. At the same time, the students' first semester final exam scores were used to measure academic performance, and the entrance exam scores were used as a reference for previous academic levels. Repeated Measures ANOVA was used to examine the differences in students' use of self-regulated learning strategies at different test stages, illustrating the effectiveness of self-regulation in improving academic performance.

Another in 2012 on the impact of emotions and cognition on self-regulated learning [8], the researchers selected 225 Greek high school students as a sample, including 125 girls and 100 boys, aged between 16 and 18 years old. This study used a randomized controlled experiment. The 225 students were randomly divided into an experimental group and a control group. The experimental group received CBT and metacognitive strategy training intervention, while the control group received conventional teaching. Before and after the intervention, the two groups of students were measured using the Self-Regulation of Learning Questionnaire (SRLQ), Cognitive Interference Questionnaire (CIQ) and Affect Scale. Comparing the differences in the scores of the two groups of students on these scales, it was found that the experimental group had a significant improvement in learning self-regulation ability, and cognitive interference and negative emotions were reduced, which shows the effectiveness of cognitive behavioral therapy (CBT) and metacognitive strategy training. CBT can adjust negative thinking and behavior patterns, relieve emotions such as anxiety during learning, allow students to focus on learning, and thus improve efficiency; metacognitive strategy training can enhance students' ability to plan, monitor and evaluate the learning process, help them choose appropriate learning strategies, and reasonably allocate time and energy, thereby improving learning efficiency.

In summary, students should adjust themselves to excessive peer pressure in a timely manner to avoid being affected by it. At the same time, parents and teachers should also be careful not to avoid

comparing with their peers. Only with appropriate encouragement and comparison can students improve their learning efficiency.

5. Conclusion

This study focuses on high school students and deeply explores the correlation between peer pressure and learning efficiency. The study found through the analysis of the sample of learning efficiency problems that the average score of peer pressure did not show significant differences, and the t-test did not reveal a significant correlation between the total score of peer pressure and each learning efficiency problem, and there was no direct positive or negative correlation between men and women in the impact of peer pressure.

Based on the above research results, this paper proposes the following suggestions: parents should pay close attention to the mental state of high school students, and provide psychological counseling in time when students frequently mention their classmates' learning situation; school teachers should avoid comparing students with individual cases to reduce students' peer pressure, and can stimulate learning motivation by moderately encouraging and guiding them to compare with classmates with similar grades; students themselves should view peer pressure rationally and focus on personal learning. When the pressure is too great, they can use meditation, develop hobbies and other methods to regulate their emotions, and can also refer to strategies such as self-reflection and cognitive behavioral therapy for self-regulation.

The significance of this study lies in that it not only reveals the relationship between peer pressure and learning efficiency of high school students from an empirical perspective, enriching the relevant theories in the field of educational psychology; at the same time, it provides practical guidance for parents, teachers and students to deal with peer pressure and improve learning efficiency, which helps to optimize the educational environment and promote students' physical and mental health development and academic progress.

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