

Study of The Relationship Between College Students' Physical Exercise, Self-control and Learning Behavior

-- Take Yan'an University As An Example

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Abstract

This study focused on the three variables and their relationships of college students' physical exercise, self-control and learning behavior. The researcher wanted to ask university provinces in Shaanxi Province about their current physical activity, self-control, and learning behaviors. The researcher used random sampling in selecting the respondents. The study was conducted during the first semester of school year 2022-2023. As China's epidemic prevention and control is under state control, questionnaire data will be collected through an online survey. Based from the findings of the study, the following conclusions were drawn: The respondents rated high levels of physical activity as well as frequency, intensity, time and type in the indicators. It indicates that they have a high level of physical activity. Among them, frequency of exercise twice a week, moderate intensity, 30 minutes and individual exercise program were the most popular; gender is not a factor affecting physical exercise of college students, age affects Intensity, Time and Type of physical exercise of college students. the evaluation of physical exercise of college students in different grades is different, with the highest score of physical exercise in sophomore year and the lowest score of physical exercise in senior year; The interviewed students had lower levels of evaluation of self-control as well as Self-control of behavior, Emotional selfcontrol and Self-control; The interviewed students have higher levels of learning behavior and indicators of learning attitude, learning self-confidence, learning strategies and learning atmosphere. It indicates that they have high level of learning behaviors; physical exercise, self-control and learning behavior predicted cooperative learning teaching methods. The proposed output of this study was the cooperative learning model.

Keywords

Physical exercise; Self-control; Learning behavior; Pedagogical model.

1. Introduction

Under the influence of the new crown epidemic, the way college students' learning behavior and physical exercise have also been affected to some extent. Three variables, three variables, and their interrelationships around college students' physical exercise, self-control, learning behavior, and their interrelationships. It is a very meaningful study to develop and choose a physical exercise intervention solution.

The focus of this research is the physical exercise of Chinese college students, the level of self-control and learning behavior, and the relationship between the three to provide teachers with targeted teaching models. This is very important for learning contemporary college students,

improving their fitness level, self-control and learning behavior, so that they can compete in the future occupation, and it is very important for students' future.

2. Research Objects and Research Methods

2.1. Research object

This article takes the college students of Yan'an University as the research object, and uses a convenient method to extract Yan'an University as a majority of 523 people as a research object. From such a crowd, researchers will use proportional sampling of proportions from different grades. The following table shows the overall and target interviewees using the Qualtrics sample with a 5% error amplitude.

Table 1. Sample size distribution

Grade	Total number of registered students	Percentage	Sample
Freshman year	4542	26.00	136
Sophomore year	4295	24.59	129
Junior year	4352	24.91	130
Senior year	4280	24.50	128
Total	17469	100	523

2.2. Research methods

2.2.1. Reliability statistics

For the reliability test the Cronbach alpha coefficient generated using SPSS is 0.824. It is generally believed that the reliability of the scale is very good when the reliability is 0.7-0.9. Therefore, based from the value obtained the questionnaire is reliable.

2.2.2. Validation of the questionnaire.

After the suggestions and comments from the adviser, a draft for approval was prepared to have the questionnaire validated by members of the panel. The questionnaire was further evaluated and validated using Cronbach Alpha index of reliability to further examine and analyze its consistency and reliability. Copies of the draft were given to at least 20 teachers who were requested to provide responses to determine whether the contents of the questionnaire are clear, concise, accurate, reliable, and comprehensible for content validation. Suggestions from the experts were incorporated for improvement of the instrument. A final copy was then produced by the researcher; after which the instrument was approved for reproduction.

2.2.3. Administration of the questionnaire.

After verification by the questionnaire, the researcher will seek the consent of the president of Yan'an University in Shaanxi Province and other school leaders. The researcher will then seek permission from each dean of the university to administer the questionnaires among students. Scoring of Responses. Data collected from respondents will be given a weight from 1 to 4, with 1 being the lowest and 4 being the highest. The scales that will measure student e are as follows:

Table 2. Profile of the Respondents' Scale

Point Value	Scale Range	Descriptive	Interpretation
4	3.51 – 4.00	Very Good	Strongly agree
3	2.51 – 3.50	Good	Agree
2	1.51 – 2.50	Fair	Disagree
1	1.00 – 1.50	Poor	Strongly disagree

3. Research Content

3.1. Significant Difference on the Assessment of student-respondents on their physical exercises when Profile Variables are Considered.

This section describes the differences in the level of students' evaluation of their physical activity when grouped according to profile variables such as gender, age, and grade.

Table 3 shows the respondents' level of physical activity, where Frequency has a mean score of 2.62 or high level; Intensity has a mean score of 2.59 or high level; and thirdly Time has a mean score of 2.56 or high level. type has a mean score of 2.65 or high level. The overall mean score is 2.60, which has a high level of assessment. This indicates that the respondents have a high level of evaluation of physical activity.

Table 3. Summary Table on the Assessment of student-respondents as regards their physical exercises

physical exercises	Mean	Qualitative Description	Interpretation
Frequency	2.62	Often	High Level
Intensity	2.59	Often	High Level
Time	2.56	Often	High Level
Type	2.65	Often	High Level
Over-all Mean	2.60	Often	High Level

3.2. Significant Difference on the Assessment of student-respondents on their self-control when Profile Variables are Considered.

This section describes the differences in students' levels of self-control ratings of their self-control when grouped according to profile variables such as gender, age, and grade level.

Table 4 shows the respondents' level of self-control, where the mean score of Self-control of behavior is 2.31 or low; Emotional self-control is 2.33 or low; and Self-control of thinking is 2.39 or low. The overall mean score was 2.34, having a low level of assessment. This indicates that the respondents' self-control has a low level of assessment.

The self-control ability of college students is predictive of their problem behaviors, and the strength of their self-control ability is quite closely related to the frequency of their problem behaviors, i.e., the stronger the self-control ability of college students, the lower the frequency of their problem behaviors. On the contrary, the weaker the self-control ability of college students, the higher the frequency of their problem behaviors, which should be given great attention by educators (Zhou Guangya, 2021).

Educators should strengthen the cultivation of college students' emotional self-control, behavioral self-control and thinking self-control (Gu, Meng-Yun & Ying, Li, 2021). The thinking and behavior of college students reflect both the characteristics of the character of our time and the trend of society to a large extent, especially the cultivation of self-control ability of college students will have a very important impact on the reality and future society.

Table 4. Summary Table on the Assessment of student - respondents as regards their self-control

Self-Control	Mean	Qualitative Description	Interpretation
Self-control of behavior	2.31	Seldom	Low Level
Emotional self-control	2.33	Seldom	Low Level
Self-control of thinking	2.39	Seldom	Low Level
Over-all Mean	2.34	Seldom	Low Level

3.3. Significant Difference on the Assessment of student-respondents on their learning behavior when Profile Variables are Considered.

This section presents the differences in the level of students' evaluation of their learning behavior after grouping them according to profile variables such as gender, age, and grade.

Table 5 shows the level of learning behaviors of the respondents, where the mean score of learning attitude is 2.62 or high level; learn self-confidence is 2.79 or high level; learning strategies is 2.78 or high level. The mean score for atmosphere was 3.00 or high. The overall mean score is 2.80, which is a high level of assessment. This indicates that the respondents' learning behaviors were evaluated at a high level.

The learning behaviors of college students are developing in the direction of diversification, which is no longer simply defined as individual self-study behaviors in the study room, but also includes reading aloud behaviors, interaction behaviors, seminar behaviors, etc. Learning behavior is the core element of talent cultivation quality, and it is an important dimension of college students' learning and development. The motivation of learning behaviors depends on their own self-efficacy awareness, while the maintenance of behavioral motivation relies on learners' own initiative to set learning goals, self-evaluation and self-reflection.

Table 5. Summary Table on the Assessment of student – respondents as regards their learning behavior

learning behavior	Mean	Qualitative Description	Interpretation
learning attitude	2.62	Often	High Level
learn self-confidence	2.79	Often	High Level
learning strategies	2.78	Often	High Level
learning atmosphere	3.00	Often	High Level
Over-all Mean	2.80	Often	High Level

3.4. Summary of regression models for physical activity, self-control and learning behavior and optimal teaching methods

Table 6. Regression coefficient analysis of physical exercise, self-control and learning behavior with optimal teaching methods

	Model	B	SE	Beta	t	sig
1	(Constant)	1.282	.205		6.264	.000
	physical exercise	.390	.044	.034	.894	.372
	self-control	-.079	.049	-.062	-1.620	.106
	learning behavior	.717	.047	.501	13.012	.000
2	(Constant)	1.828	.202		9.028	.0000
	physical exercise	-.047	.043	-.041	-1.099	.272
	self-control	-.185	.048	-.146	-3.843	.000
	learning behavior	.605	.047	.493	12.904	.000
3	(Constant)	2.260	.189		11.950	.000
	physical exercise	-.119	.040	-.107	-2.965	.003
	self-control	-.271	.045	-.218	-6.011	.000
	learning behavior	.616	.044	.513	14.058	.000
4	(Constant)	1.887	.184		10.236	.000
	physical exercise	-.063	.039	-.060	-1.595	.111
	self-control	-.144	.044	-.124	-3.272	.001
	learning behavior	.562	.043	.502	13.153	.000

Tables 6 show that the regression analysis of the four instructional methods was conducted separately by using three as predictor variables: physical exercise, self-control, and learning behavior. the significance values of all four models were less than the significance criterion of 0.05 and the original hypothesis was rejected, indicating that the equations had highly significant differences, which means that all four models were valid.

Next, the specific results of the four models are as follows: from the regression coefficients of model 1, it is known that only learning behavior (Beta=0.501, $p=0.000<0.05$) predicts student-centered teaching methods. From the regression coefficients of model 2, it is known that self-control (Beta=-0.146, $p=0.000<0.05$) and learning behavior (Beta=0.493, $p=0.000<0.05$) predict teacher-directed teaching methods. From the regression coefficients of model 3, it is known that physical exercise (Beta=-0.107, $p=0.003<0.05$), self-control (Beta=-0.218, $p=0.000<0.05$), and learning behavior (Beta=0.513, $p=0.000<0.05$) predict cooperative learning instructional methods. From the regression coefficients of model 4, it is known that self-control (Beta=-0.124, $p=0.001<0.05$) and learning behavior (Beta=0.502, $p=0.000<0.05$) predict the pedagogy of testing and assessment.

4. Conclusion

Based on the results of the presented study, the researcher drew the following conclusions.

4.1. There were more female respondents than male. Most of the respondents belonged to the age group of 19 to 20 years.

4.2. the respondents rated high levels of physical activity as well as frequency, intensity, time and type in the indicators. It indicates that they have a high level of physical activity. Among them, frequency of exercise twice a week, moderate intensity, 30 minutes and individual exercise program were the most popular.

4.3. gender is not a factor affecting physical exercise of college students, age affects Intensity, Time and Type of physical exercise of college students. the evaluation of physical exercise of college students in different grades is different, with the highest score of physical exercise in sophomore year and the lowest score of physical exercise in senior year.

4.4. The interviewed students had lower levels of evaluation of self-control as well as Self-control of behavior, Emotional self-control and Self-control of thinking among the indicators. It indicates that they have low self-control.

4.5. Gender is a factor that affects self-control of the interviewed students, and age and grade level are not factors that affect self-control of the interviewed students.

4.6. The interviewed students have higher levels of learning behavior and indicators of learning attitude, learning self-confidence, learning strategies and learning atmosphere. It indicates that they have high level of learning behaviors.

4.7. gender is a factor that influences learning attitude, learn self-confidence and learning atmosphere. Age is not the main factor influencing the learning behavior of the interviewed students, and the interviewed students in different grades showed significant differences in their learning behavior and its indicators.

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