

The impact of interpersonal relationships on students' learning engagement - the mediating role of self-affirmation

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Abstract: In order to explore the influence of interpersonal relationship on primary school students' learning engagement, this study examined the mediating role of self-affirmation. The sample was taken from a part of grade 4-6 students (n=596) in a super primary school in Yunnan Province, using the questionnaire survey method. The results show that self-affirmation has an independent intermediary between parent-child relationship, teacher-student relationship, peer relationship and primary school students' learning engagement, respectively. In the specific interpersonal relationship mediation path, teacher-student relationship and peer relationship are greater than parent-child relationship, and peer relationship is greater than teacher-student relationship. Interpersonal relationship may promote the development of individual internal resources, and then affect their learning engagement.

Keywords: Parent child relationship; Teacher student relationship; Peer relationship; Self-affirmation; Learning engagement

1. Introduction

Without strong relationships, there will be no significant progress in learning. Learning is to understand various relationships.[1] In the process of students' development, the interpersonal relationship between them and their parents, teachers, peers and so on plays a key role in learning. Parent child relationship, teacher-student relationship and peer relationship are the three most important interpersonal relationships built by students in the learning process. In recent years, the academic community has emphasized the significant relationship between interpersonal relationships inside and outside school and learning engagement of students of different ages.[2] Parent child relationship refers to the family interpersonal relationship formed by the interaction between parents and children based on blood and common life.[3] A high level of parent-child relationship quality can not only promote the development of children's intelligent characteristics, improve children's language and cognitive ability, but also help to improve individual's psychological resources and academic performance. Teacher student relationship and peer relationship are two important interpersonal relationships formed in the process of school education. The teacher-student relationship refers to the cognitive, emotional and behavioral connections between students and their teachers in the school environment. It is usually regarded as two aspects of intimacy and conflict. High quality teacher-student relationship can have a positive impact on students' learning engagement, academic achievement and social adaptation. Peer relationship refers to a kind of interpersonal relationship developed in the interaction process of small groups closely connected with each other based on common interests and friendship. Peer relationship affects students' behavior engagement and academic skill development learning engagement, which is very important for students. It largely affects students' academic achievement, academic performance and expectations of their own academic ability. Learning engagement is defined as a positive, fulfilling and learning related mental state, which is characterized by vitality, dedication and focus. Investment is not a transient and specific state, but a more lasting and universal emotional cognitive state. Learning engagement is also defined as the time spent on completing learning tasks, including effort, attention, self-guidance and persistence in the classroom, which is composed of three dimensions: behavioral engagement, emotional engagement and cognitive engagement. [4] "Self" may be a bridge between interpersonal relationship and learning engagement. Human beings begin to construct themselves from childhood, including self-efficacy, self-concept, self-esteem and self-affirmation. Self-esteem consists of two parts: self-acceptance and self-affirmation.

Research shows that self-affirmation is also likely to be a potential predictor of learning engagement.

Self-affirmation is defined as an act of maintaining the overall concept of self- satisfaction, which means that individuals affirm themselves through action or thought, so as to maintain self- integrity.[5] In the process of the development of interpersonal relationships, individuals get people's evaluation of their important qualities, thus constructing the potential field of self-affirmation development. Through the development of interpersonal relationships, individuals can reduce the impact of threat events on self-integrity, so as to develop self-affirmation. Personal views of their own efficacy, initiative and integrity are the key driving factors of achievement motivation. Individuals who tend to be self- affirming do have stronger academic motivation, hard work belief and psychological resilience, and have more investment in learning. However, few literature studies have examined the relationship between the three most important interpersonal relationships and learning engagement in the development of primary school students through the mediating role of self-affirmation.

In order to better understand the factors affecting learning engagement and the relationship between them, it is necessary to mention self-determination theory (SDT) .[6] According to self- determination theory (SDT), the social environment that supports individual psychological needs (i.e., ability, relationship and autonomy) promotes motivational behavior by promoting internalization In other words, children acquire learning motivation by meeting the needs of ability, relationship and autonomy, which is ultimately manifested as the investment in learning. Among them, motivation is also motivation, which is divided into intrinsic motivation and extrinsic motivation Contrary to extrinsic motivation, intrinsic motivation refers to activities for the intrinsic satisfaction of the activity itself-. In their healthiest state, children have an intrinsic tendency to seek new things and challenges, explore and learn SDT believes that in a person's life, similar dynamics will occur in the interpersonal environment, and the intrinsic motivation is more likely to be protected and flourish in an environment characterized by a sense of security and intimacy. The researchers observed that the students who had the support and encouragement of their parents, teachers and peers had higher levels of intrinsic motivation, developed self-affirmation and had more learning engagement. In this study, we use self-affirmation to measure individual intrinsic motivation. Although there are some differences, the theory helps to understand the reasons behind students' engagement. Therefore, self-determination theory provides a supporting view to explain how interpersonal relationship is linked to learning engagement through the mediating role of self-affirmation. Under the guidance of this theory, we constructed a theoretical model to test the relationship between interpersonal relationship and learning engagement, as well as the mediating role of self-affirmation (see Figure 1).

1.1 Interpersonal relationship and learning engagement

According to SDT, extrinsic motivation refers to activities carried out in order to obtain some separable results. In early childhood, people's freedom to carry out intrinsic motivation is increasingly affected by social pressure, which leads to people having to engage in some boring activities and undertake various new responsibilities (such as learning). SDT points out that internalization is more likely to occur when there is a sense of kinship supported by the environment. Some studies in education also found that more autonomous external motivation will enable students to have more participation, better performance and higher quality of learning. [7]The study found that parents' support and parenting style can affect individuals' enthusiasm, enjoyment and interest in learning, the relationship mode between teachers and students and the way of class can affect students' Academic Emotion and behavior, more positive peer relationship can significantly affect individuals' academic resilience and self-efficacy, and the relationship with parents, teachers and peers has made a unique contribution to students' learning engagement, especially their supportive interaction. Therefore, we propose a hypothesis:

H1: parent child relationship may be positively correlated with learning engagement.

H2: the relationship between teachers and students may be positively correlated with learning engagement.

H3: peer relationship may be positively correlated with learning engagement.

1.2 Mediating role of self-affirmation

Self-affirmation is influenced by interpersonal relationships. Positive interpersonal relationships are involved in the construction of individual self-affirmation, while negative interpersonal relationships will weaken individual self-affirmation. Chen et al. Believe that the relationship with important others (such as parents, teachers, peers) is very likely to make individuals produce spontaneous and induced relational self-affirmation when facing threats, and use them as resources for self-affirmation. [8] Harris and others

believe that positive social relationships (such as those with family, teachers and friends) are potential sources of personal affirmation. [9] The research shows that familism is a highly internalized core value in Chinese culture, which has obvious potential for self-affirmation. Family support and close relationship with family members will promote the formation of self-affirmation. At the same time, in the school environment, the recognition of teachers and peers to individuals also has an important impact on the improvement of self-affirmation. These evidences support the view that parent-child relationship, teacher-student relationship, Peer relationship can promote the formation of adolescents' self-affirmation.

Self-affirmation will affect individual learning engagement, and students with higher self-affirmation level will have better academic performance. Cohen et al. Pointed out that self-affirmation eliminates the obstacles that hinder students' full potential and cultivates students' adaptive potential. [10] Borman et al's research results show that if self-affirmation intervention is widely implemented, it may have a strong and lasting academic impact on students. [11] Therefore, this study speculates that there is a positive correlation between adolescents' self-affirmation and their learning engagement. Self-affirmation may play a mediating role between parent-child relationship, teacher-student relationship, peer relationship and learning engagement. Accordingly, the following assumptions are made:

H4: self-affirmation may play a mediating role in the relationship between parent-child relationship and learning engagement.

H2: self-affirmation may play a mediating role in the relationship between teacher-student relationship and learning engagement.

H3: self-affirmation may play a mediating role in the relationship between peer relationship and learning engagement.

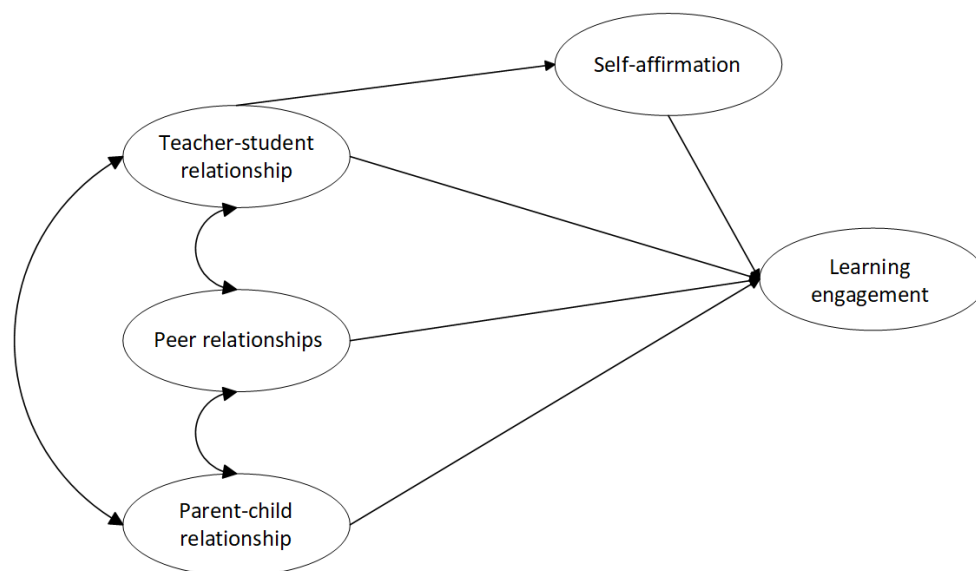


Figure 1. Theoretical Model

2. Research method

2.1 Subjects and procedures

In this study, a questionnaire survey was conducted among grade 4-6 students in a large primary school (about 1600 pupils) in an urban area of Yunnan Province, using the questionnaire star platform. Before the test, contact the headmaster of the school. The headmaster will hold a class teacher meeting for grades 4-6 to convey the contents and requirements of the test. The head teachers of each class will convey the contents and requirements of the test to students and parents through the class group and issue the test link. 596 valid student questionnaires were collected. There were 307 male students (51.5%) and 289 female students (48.5%); 240 students in grade 4 (40.3%), 181 students in Grade 5 (30.4%), and 175 students in Grade 6 (29.4%). The average age was 10.53 ± 1.04 years old.

2.2 Research tool

Teacher student relationship: the measurement items of the teacher student relationship scale are derived from the dimension of teacher student relationship in the school atmosphere scale compiled by Wang Zhaoxuan et al. (2020). It mainly measures the closeness of teacher-student relationship in the school, with a total of 4 measurement items. [12] The higher the score, the higher the level of teacher-student relationship. The fitting index of confirmatory factor analysis was $\chi^2(2)=3.524$, CFI=0.996, GFI=0.994, RMSEA=0.065, indicating that the scale had good structural validity. In this study, the internal consistency coefficient of parent-child relationship was 0.877.

Peer relationship: the measurement items of the peer relationship scale are derived from the peer relationship scale compiled by Wei Yunhua (1998), which mainly measures the social leadership attribute, attack destruction attribute, and sensitivity independence attribute of adolescents, with a total of four measurement items. [13] The higher the score, the higher the level of peer relationship. The fitting index of confirmatory factor analysis was $\chi^2(2)=2.665$, CFI=0.996, GFI=0.996, RMSEA=0.053, indicating that the scale had good structural validity. In this study, the internal consistency coefficient of the scale was 0.832.

Parent child relationship: the measurement items of the parent-child relationship scale are derived from the Chinese version of the parent-child intimacy scale revised by Zhang Jintao et al. (2011). It mainly measures the closeness of the relationship between teenagers and their father (or mother), with a total of 7 measurement items. [14] The higher the score, the higher the level of parent-child relationship. The fitting index of confirmatory factor analysis was $\chi^2(14)=4.880$, CFI=0.973, GFI=0.968, RMSEA=0.081, indicating that the scale had good structural validity. In this study, the internal consistency coefficient of the scale was 0.881.

Self-affirmation: the self-affirmation measurement item is derived from the self-affirmation dimension of Rosenberg (1979) self-esteem questionnaire, which mainly measures the degree of positive evaluation of individuals on themselves, with a total of 6 measurement items. [15] The higher the score, the higher the self-affirmation level of primary school students. The fitting index of confirmatory factor analysis was $\chi^2(14)=4.880$, CFI=0.973, GFI=0.968, RMSEA=0.081, indicating that the scale had good structural validity. In this study, the internal consistency coefficient of the scale was 0.881.

Learning engagement: the measuring items of the learning engagement scale are derived from the learning engagement scale revised by Fang Laitan et al. (2008). It mainly measures the performance level of individual in terms of vitality, dedication and focus in the learning process. It consists of five measuring items, such as "when I am learning, I will feel that time passes quickly". [16] The higher the score, the higher the pupils' learning engagement. The fitting index of confirmatory factor analysis was $\chi^2(5)=1.941$, CFI=0.997, GFI=0.994, RMSEA=0.040, indicating that the scale had good structural validity. In this study, the internal consistency coefficient of the scale is cronbach's α is 0.870.

2.3 Data analysis method

This study uses spss24.0 and amos24.0 to analyze the data. Specifically, spss24.0 is used for descriptive statistics, reliability and common method bias test, amos24.0 confirmatory factor analysis, discriminant validity and convergent validity test, structural model analysis, and bias correction percentile bootstrapping for mediating effect analysis.

2.4 Result

(1) Common method deviation inspection

According to previous suggestions, harmans single factor method was used to test the co method. [17] The results showed that five factors with eigenvalues greater than 1 were extracted by factor analysis, and the explanatory power of the first factor was 35.88%, less than 40%. Therefore, the common method deviation problem in this study was not serious.

(2) Descriptive statistics of main variables

Correlation analysis shows that there is a significant positive correlation between teacher-student relationship, peer relationship, parent-child relationship, self-affirmation and learning engagement (Table 1).

Table 1: Descriptive statistics, convergent validity and discriminant effect (n=596)

Facet	convergent validity		descriptive statistics		discriminant validity					
	Cronbach's α	composite reliability	mean value	standard deviation	Ave	1	2	3	4	5
1. teacher student relationship	0.877	0.880	3.592	0.565	0.647	0.804				
2. peer relationship	0.832	0.839	5.161	0.778	0.565	0.510**	0.752			
3. parent child relationship	0.881	0.889	4.008	0.703	0.536	0.281**	0.247**	0.732		
4. self-affirmation	0.891	0.894	5.113	0.811	0.585	0.429**	0.450**	0.348**	0.765	
5 learning engagement	0.870	0.877	4.876	0.905	0.590	0.448**	0.504**	0.331**	0.635**	0.768

Note: bold words on the diagonal are AVE root values, and the lower triangle is Pearson correlation*** It means $p < 0.001$, the same below.

(3) Convergent validity and discriminant validity

According to table 1, cronbach's of five variables α 832-0.891, Cr value of composition reliability is between 0.880-0.894, AVE is between 0.536-0.647, AVE root number is between 0.732-0.804, and the correlation coefficient of aspect is between 0.281-0.635. The root number of AVE is greater than the correlation coefficient of aspect, indicating that the five variables in this study have good convergence and differential validity.

(4) Structural model checking

The first step is to construct the direct effect model M1 of three types of interpersonal relationships on primary school students' learning engagement with AMOS24.0. The model fitting results ($\chi^2(164)=1.937$, CFI=0.975, GFI=0.949, RMSEA=0.040) showed that M1 was an acceptable model. The structural path showed that teacher-student relationship ($b=0.366$, $t=3.865$, $p < 0.001$), peer relationship ($b=0.571$, $t=7.519$, $p < 0.001$) and parent-child relationship ($b=0.280$, $t=4.710$, $p < 0.001$) had significant effects on Pupils' learning engagement, which verified the hypotheses H1, H2 and H3, and could explain 45% of the variation of learning engagement.

In the second step, on the basis of model 1, the mediating variable self-affirmation is added, and the structural equation model M2 is built to test the mediating effect. The model fitting results ($\chi^2(289)=2.197$, CFI=0.959, GFI=0.923, RMSEA=0.045) showed that M2 was an acceptable model. The results of path analysis showed that the path coefficients of teacher-student relationship ($b=0.180$, $t=2.143$, $p=0.032 < 0.05$), peer relationship ($b=0.347$, $t=5.116$, $p < 0.001$) and parent-child relationship ($b=0.122$, $t=2.345$, $p=0.019 < 0.05$) on primary school students' learning engagement decreased, but were still significant, which further verified the hypotheses H1, H2 and H3.

The 95% confidence interval of the mediating effect was calculated by using the bootstrapping test with deviation correction percentile and repeated sampling for 5000 times. The results showed that after excluding the influence of the other two kinds of interpersonal relationships, the 95% confidence interval of the mediating effect of self-affirmation between each kind of interpersonal relationship and learning engagement did not include 0, which indicated that self-affirmation played a mediating role in the influence of teacher-student relationship, peer relationship and parent-child relationship on learning engagement. The hypothesis H4, H5 and H6 were verified, And the three basic interpersonal relationships and self-affirmation in the process of primary school students' life and education can explain 59% of the variation of learning engagement. See Table 2 for the mediation effect value.

Table 2: Intermediate effect value and effect quantity

path	Effect value	Effect quantity	Bias corrected 95% CI	
			lower limit	upper limit
Teacher student relationship \rightarrow self-affirmation \rightarrow learning engagement	0.185	15.20%	0.069	0.368
Peer relationship \rightarrow self-affirmation \rightarrow learning engagement	0.227	18.65%	0.132	0.358
Parent child relationship \rightarrow self-affirmation \rightarrow learning engagement	0.157	12.90%	0.087	0.261
Total indirect effect	0.569	46.75%	0.412	0.759
Total direct effect	0.648	53.25%	0.377	0.898
Total effect	1.217	100%	0.964	1.469

3. Discussion

The purpose of this study is to study the relationship between parent-child relationship, teacher-student relationship, peer relationship and learning engagement. At the same time, it also aims to study the mediating role of self-affirmation between the three interpersonal relationships and learning engagement. The findings are as follows.

Parent child relationship, teacher-student relationship and peer relationship will have a significant positive impact on Pupils' learning engagement. Fan and Williams' research shows that parent-child

relationship has a positive contribution to learning engagement. [18] One possible reason is that a good parent-child relationship often means that students' parents have a high degree of acceptance, supervision and psychological autonomy. They have more participation in school education and pay more attention to the encouragement of success, so that teenagers can perform better and feel more involved in school. In addition, previous studies have shown that parents' values affect students' efforts and perseverance, and the interaction between parents and children will affect students' attitudes and behaviors (such as the time and effort to participate in learning). The results of this study further prove the prominent role of parent-child relationship in learning engagement.

Peer relationship has a significant impact on learning engagement, which is proved by the research of Berndt and Keefe. [19] The possible reason is that students spend most of their time with peers every day, and peers will have a great impact on all aspects of students' life, such as the impact on students' emotional and behavioral investment. In addition, the characteristics and behaviors of friends will also have a certain impact on students, such as friends' academic and social characteristics, as well as their drug use or other bad behaviors. Previous studies have also shown that, Close friendship can positively predict learning motivation and achievement, positive and mutually supportive peer relationship can promote the academic development of active students, and peer support is significantly positively correlated with academic engagement. [20] The results of this study further prove the prominent role of peer relationship in learning engagement.

The study found that the teacher-student relationship would have a positive contribution to learning engagement, and QUIN's research also proved this idea.[21] The reason may be that a good teacher-student relationship can resist the impact of negative events in life to a certain extent, and can also make up for the sense of loss caused by the negative parent-child relationship. Students who have a good relationship with teachers are more motivated to participate in classroom interaction, so they are more active in learning. Research also shows that the positive relationship between teachers and students will make students have a stronger sense of belonging to the school, and help students stay away from bad behavior. The results of this study further prove the prominent role of parent-child relationship in learning engagement.

The study identified a mediating variable, self-affirmation. Interpersonal environment can affect the affirmation of individual self-worth and thus affect academic performance. However, although there are many evidences about self-affirmation involving family, school and academic behavior, the model of parent-child relationship, teacher-student relationship, peer relationship and school participation through the mediating role of self-affirmation has not been well documented or directly proved. Self-affirmation can help people deal with challenges in a healthy and effective way, make individuals have better task performance, effectively improve individual learning initiative, and strengthen individual learning motivation and academic performance. Self-affirmation also affects individuals' cognitive response to threat information and events, and affects their physiological adaptation and actual behavior. The emergence of self-affirmation as an important indirect role in the research further proves the importance of self-affirmation in promoting adolescents' learning engagement.

As we expected, different interpersonal relationships have different and equally important effects on primary school students' learning engagement. Our results show that in the three kinds of interpersonal relationships, peer relationship has the largest impact on learning engagement, and parent-child relationship has the smallest impact on learning engagement. The possible reason is that in adolescence, peers can play a key positive role in the process of adolescents' adaptation to school society, which is particularly important for Chinese primary school students who spend most of their time in school and take collectivism culture as the mainstream culture. In addition, because this study is a horizontal study, the parent-child relationship, which will have a long-term important impact on all aspects of students' development, may have a limited impact on learning engagement in this study. In addition, the results also show that these interpersonal relationships can more effectively explain the influence mechanism of learning engagement through the indirect effect of self-affirmation than the direct effect. The possible reason is that the direct effect more explains that interpersonal relationship affects students' learning engagement through extrinsic motivation, while the indirect effect more explains that interpersonal relationship transforms into individual intrinsic motivation and further affects students' learning engagement through the mediating effect of self-affirmation. Some studies have found that compared with those who only control their behavior by external motivation, those who control themselves by self-engine have more interest, excitement and confidence, and show enhanced persistence and creativity compared with individual experience.[22] In general, this study analyzes the complex relationship between parent-child relationship, teacher-student relationship, peer relationship, self-affirmation and learning engagement within the framework of self-determination theory. To a certain extent, it enriches

the previous research, and inspires educators and educated to pay more attention to teenagers' interpersonal relationships and self-affirmation, so as to enhance their learning engagement.

4. Limitations and future research directions

The limitations of the study should be explained for future research. First, the proposed theoretical model is tested only with samples selected from one school, which may limit the traceability of the research results. It is necessary to further validate the model with different samples from more schools in the future. Secondly, this study explores the relationship between interpersonal relationships including parent-child relationship, teacher-student relationship, peer relationship and learning engagement, as well as the mediating role of self-affirmation. However, there are many factors that affect learning engagement, such as family socio-economic status, mental health level and so on. Future research should consider more variables in order to get more convincing results and put forward practical suggestions. Third, the study focuses on the cross-sectional study design, so we may not be able to infer the causal relationship between the five variables. Future research can focus on longitudinal research to further explore the relationship between interpersonal relationship and learning engagement.

5. Impact on practice

In order to promote teenagers' learning engagement, education practitioners should pay close attention not only to external factors (such as interpersonal relationships), but also to internal factors, such as self-affirmation.

Through this study, it is recognized that the relationship with teachers and peers can significantly improve students' learning engagement compared with the relationship with parents. For practice, unlike many family factors, school factors are considered to be plastic and can be modified by schools. If the teacher-student relationship and peer relationship can be identified and changed, it is feasible to work towards the goal of improving students' learning engagement. Therefore, we can promote educational equity by improving students' interpersonal relationship in school. We can take practical intervention measures to promote the positive relationship between students and their parents, teachers and peers. First of all, the school should provide necessary training, lectures and seminars for teenagers to help teenagers carry out a series of consultations with parents, teachers and other students to understand the current discipline system and operation mode of the school, and cooperate with all partners to formulate and improve the school's behavior policy and practice, so as to improve the relationship between students and their important others in depth. Secondly, teachers increase the opportunities for positive peer interaction by carefully organizing group based learning activities (i.e. cooperative learning) in schools, so as to achieve the purpose of strengthening peer relations. Finally, through the improvement of the relationship between adults in the school, the mutual trust, generosity and win-win cooperation between school administrators and teachers, teachers and teachers can be achieved, so that these qualities can be spread between teachers and students, and between students and students.

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