

General Self-Esteem as the Mechanism Through Which Early-Childhood Parental Trust and Support Affect Adolescents' Learning Behavior: A Moderated Mediation Model

INQUIRY: The Journal of Health Care Organization, Provision, and Financing
Volume 60: 1–9
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DOI: 10.1177/00469580231152076
journals.sagepub.com/home/inq



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Abstract

Parental trust and support are machineries for children's cognitive growth and behaviors exhibited at a later age. Their influence on students' learning engagement at school has been reported, but little is known about the mechanisms through which such a proposed causal effect occurs. This study tested 2 major proposed hypotheses; (1) general self-esteem (GSE) mediates the causal relationship between parents' trust and support (PTS) and Learning engagement (LE). (2) The mediation effect is further moderated by students' college grade level. Data was collected from 1139 college students in Tanzania ($M_{age} = 22.5$, $SD_{age} = 0.681$) who filled out an online-designed questionnaire. SPSS (Statistical Package for Social Science), PROCESS macro of SPSS, and JASP (Jeffrey's Amazing Statistical Program) were used for analyzing data. The results indicated that GSE had a mediating effect ($\beta = .0912$, $SE = 0.0134$, $P < .001$) on the causal relationship between PTS and LE. The unmediated (direct) effect of PTS on LE ($\beta = .2125$, $SE = 0.0419$, $P < .001$) was lower than the total effect ($\beta = .3037$, $SE = 0.0553$, $P < .001$) after the mediation. The interaction effects of PTS ($\beta = .0463$, $P < .001$) and GSE ($\beta = .0495$, $P < .001$) on students' college grades were statistically significant, indicating that the mediation effect of GSE on the causal relationship between PTS and LE was moderated by college grades. Parental trust and support enhance students' behavioral learning at school through their general self-esteem, built from the family level (parenting).

Keywords

self-esteem, learning engagement, parenting, trust, support

What do we already know about this topic?

Parenting (trust and support) contribute greatly to children's behavior at a later age (during younger and older adulthood), including learning engagement, discipline, general social skills, and academic achievement at school

How does your research contribute to the field?

The study explores the mechanism (moderated mediation) through which a proposed causal relationship between parenting (trust and support) and students' learning engagement at the college works under students' self-esteem (mediator), and college grade (moderator)

What are your research's implications toward theory, practical, or theory?

Self-esteem is an important trait which is built throughout childhood, through which the students' learning engagement at school and academic achievement depend on, whereas parenting (parental trust and support) helps in establishing adolescents' self-esteem and general behavior throughout the lifetime

Introduction

Trust and support are among the key dimensions of effective parenting, which may incorporate other constructs like attachment, acceptance, love, cohesion, and nurturing.^{1,2} The relationship between these constructs and the behaviors that children may develop at a later age is well documented,³⁻⁵

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Received 5 August 2022; revised 23 December 2022; revised manuscript accepted 4 January 2023

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showing the remarkable influences of both family environment (nurture) and inherited traits (nature) from parents to adolescents' behavior.^{6,7} Studies have included behaviors like social anxiety, attentiveness, bullying, social compliance, sexual permissiveness, and academic engagement at school during adolescence as the characters that are largely shaped by parenting (support and trust) from the early age of growth.⁸

Parental trust, support, and the high level of emotional bond shown to children in their early years are healthy components for cognitive and social growth.^{9,10} Generally, early parenting approach, parents' behaviors and attitudes toward their children determine most of the characteristics (bad or good) exhibited during their adolescent age.¹¹ Self-esteem, an essential trait of a human's social life, is also enhanced by parenting behaviors that may comprise support and trust shown during childhood.^{12,13} However, although studies have vividly stipulated the influence of parental trust and support on adolescents' behaviors like learning engagement at school,^{14,15} little is known about the mechanisms through which such proposed causal effect occurs.

Based on attachment theory,¹⁶ parental trust refers to mutual understanding and respect between a child or an adolescent and parents,¹⁷ while from the separation-individuation theory,¹⁸ parental support refers to the decreased de-idealization and increased reliance on parents for emotional regulation.¹⁹ A strong bond of trust and support becomes essential for a child's development by helping parents model their children's manners (behaviors). Studies have revealed the influence of parental trust on adolescents' psychological adjustment²⁰ and support on happiness, comfort, and prosperity among adolescents.²¹ Generally, adolescents' self-esteem, learning engagements at school and academic performance have a greater and positive relationship with the trust, and support students have received from their parents during their younger age.²² Several studies have suggested that the relationship between parenting behaviors and students' academic engagement at school is not always direct,^{23,24} as attributes like discipline, perseverance, and future orientation mediate such a causal relationship.^{15,25}

This study is built on the previous literature,⁷ which suggested that a causal relationship between parenting behaviors and students' learning engagement at school is not necessarily obvious and direct across varied learning grades. The study explores the role of self-esteem among college students as the mechanism (mediator) through which parental trust and support (predicting variable) affect their learning engagement at college (outcome variable). Inconsistent results on students' self-esteem at the college level have been indicated by other literature,^{26,27} the majority pointing out the influence of family socio-economic status (SES) on college students' self-esteem.^{28,29} In addition to the first target (exploring the mediation role of self-esteem in the causal relationship between parental trust/support and students' learning engagement at the college level), we further test

whether such mediation is moderated by students' college grades (first to -third years of studies).

Literature Review

The degree of supportive within a parent-child interaction system (ie, discussion, talking about worries, and continuous courage) is reflected by parent-child cohesion.³⁰⁻³² Studies have indicated that early parental trust and support are positively associated with adolescents' later learning engagement and academic competence.^{33,34}

Parental Trust, Support and Learning Engagement

The relationship between parental trust, support, and learning engagement has consistently been demonstrated across cultures (ie, Italy, Japan, and Lithuania).³⁵ Conceptually, learning engagement refers to motivationally, cognitively, and behaviorally engaging in an effective learning process.³⁶ Other studies showed self-regulated learning (mediator) as the mechanisms through which such causal relationship works.^{37,38} The relationship of similar variables may also be positively affected by students' age and gender,³⁹ while youths' reports (on their parental trust) predicted their academic achievement more than their parents' reports.¹⁶ Although most of the existing literature on parental trust and support has extracted data from adolescents (students) by means of self-reporting, less is known about the influence of self-esteem in such causal relationship. In this study we predict that students' self-esteem is the mechanism (mediator) through which the relationship between parental trust/support and students' learning engagement works.

Parental Trust, Support and Self-esteem Among Adolescents

Parental trust and support work as a secure base for managing challenges of the external world among adolescents.⁴⁰ It is also associated with children's self-esteem at a later age.⁴¹ Trust and parents' support are important elements of children's growth, playing a greater role in establishing the parent-child relationship that further stimulates children's self-esteem.²⁰ Self-esteem refers to one's confidence in own abilities, values, and worth. It is how people evaluate themselves (how much they appreciate or like themselves).⁴² Parenting, specifically parental trust and support for their children, has a greater influence on adolescents' later self-esteem, the relationship has been documented in different literature.^{40,43,44} However, although much has been reported about the influence of parenting on students' self-esteem in their learning processes at school,^{39,45} less is known about the influence of their learning grades on the relationship between parental trust and their self-esteem. This study explores the

moderation effect of students' college grades in the relationship between parental trust/support and self-esteem.

Self-esteem and Learning Engagement

Given the importance of learning, researchers have investigated factors that may enhance students' learning engagement.⁴⁶ Self-esteem is among the factors reported to influence the school learning process among children and adolescents. Conceptually, self-esteem is defined as an individual's overall positive or negative evaluation of the oneself.⁴⁷ It has also been shown to have a close and positive relationship with students' academic achievement.⁴⁰ Lower esteem implies self-dissatisfaction, self-rejection, and self-contempt, consequently burdening the learning process, further leading to underachievement.⁴⁸ Further research has suggested that different traits like external performance and self-evaluation have a 2-way of interaction to each other (reciprocate).^{34,42} Parent-child cohesion or support, learning engagement, academic achievement, and self-esteem comprise a dynamic and mutually beneficial system.⁴⁹ Parental trust, support, and sensitivity to children's concerns improve their self-esteem and make them comfortable to speak to their parents about their academic concerns,³⁻⁵ which strengthens child-parent attachment.⁴⁶ In this, we propose that the causal effect of student's self-esteem on their learning engagement at the college level is moderated by their college grade.

Objective of the Study

This study aims to test whether the proposed causal effect of parental trust and support on students' learning engagement at the college level can be explained through their general self-esteem as a mediator. Finally, the study explores the moderation role of students' college grades (first year to third year) in the mediation model. The study examines the moderation effect of students' college grades in 2 major paths of the mediation model; from parental trust and support (predicting variable) to self-esteem (mediator) as interaction effect 1, and from self-esteem to students' learning engagement (outcome variable) as interaction effect 2. Generally, the study explores the effect of moderated mediation in the relationship between parenting (trust and support) and students' learning engagement at the college.

Hypotheses Statement

1. The proposed causal effect between parental trust, support and students' learning engagement can be mediated by self-esteem (H1)
2. Students' college grade moderates the effect of parental trust and support on students' self-esteem (H2)
3. Students' college grade moderates the effect of students' self-esteem on their learning engagement (H3)

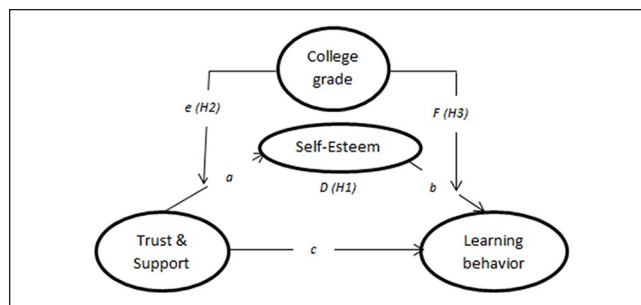


Figure 1. Moderated mediation path model.

Model of the Study

The moderated mediation model (Model-58) was used in this study, involving the independent variable (parental trust and support), the mediator (self-esteem), the outcome variable (learning behaviors), and the moderator (students' college grade). With the illustrative Figure 1 below, the relationship between variables of our concern is indicated through paths. Students' college grade plays a moderation role on both "e" (H2) and "f" (H3) path lines to change the mediation effect of self-esteem in the relationship between parental trust/support (predicting variable) and students' learning engagement (outcome variable). The model suggests that the effect of parental trust and support on self-esteem (through path "a") and self-esteem on students' behavioral learning engagement (through path "b") vary across different college grades. More precisely, the effect of parental trust and support on students' behavioral learning engagement is influenced by the moderated mediation of students' self-esteem.

Methods

In this section we describe the sampling, sample size (participants), and the characteristics of the sample. We also describe how we came into the conclusion of including some participants while excluding the others. The measurement tools are also explained in this section, as well as the data analysis procedures

Participants and Sampling Procedures

Students (n = 1139) from 2 universities in Tanzania (public, n = 616 and private n = 523) participated in this study by filling out the questionnaire (online by following the link), which was distributed to them by WhatsApp groups and personal accounts. All the university students qualified to participate in this study, but because of time, financial, and accessibility (convenience) factor,^{50,51} only 2 universities located in Dar es Salaam city (Tanzania) were selected from a pool of 10 potential universities. Accessibility to students was easy in these 2 universities because one of the researchers worked there as lecturer. Students' list was randomly

Table 1. Participants' Characteristics (N = 1139).

Variable	Groups	Frequency	Percentage	Cumulative percent
Age	18-21 years	74	6.5	6.5
	22-25 years	808	70.8	77.3
	26-30 years	172	15.1	92.4
	>30 years	87	7.6	100.0
Gender	Male	591	51.8	51.8
	Female	550	48.2	100.0
College grade	Certificate & Diploma	30	2.6	2.6
	Undergraduate	1092	95.7	98.5
	Graduate	17	1.5	100.0

Note. Percentages have been rounded off.

selected from the 2 conveniently selected universities. All the participants were above 18 years old ($M_{age} = 22.5$, $SD_{age} = 0.681$) and predominantly undergraduate students (95.7%), with few graduate students (1.5%) and other non-degree students (2.6%). Table 1 below shows all the participants' demographic information, with all the percentages rounded off.

A software (G* Power) was used to calculate the sample size of participants in this study. The calculation was based on statistical theories⁵² and the related empirical studies^{53,54} with the assumption of 95% certainty that the selected sample would produce statistically significant results if the hypotheses were true to general population.⁵⁵ During calculation, the "P" value was set at .05 (2-tailed) with a small effect size ($d = 0.02$). An online questionnaire was designed comprising different sections, including the participants' demographic information and the variables of our primary concern.

All the participants were well-informed about the objective of the study before their voluntary participation. Informed consent was obtained from all the participants, and no compensation was given to participants. During the first week of the second semester (22nd January 2022), the questionnaire form was distributed to participants (students) recruited from 2 universities in Tanzania. An online link was shared in different students' WhatsApp groups and personal accounts, while a few other students opted to fill out a hard-copied form. The forms were also distributed outside the classroom, and the assistant researchers played an important role in distributing and collecting the hard-copied filled forms. They also followed up and sent reminders to respondents to ensure that many students participated in the study.

Measurement Instruments

Parental trust & Support: Parental Support Scale (PSS) was used to measure parental trust and support for their children during their childhood. The scale was developed for National Youth Survey in the United States by Elliott et al.^{56,57}, indicating the extent to which the statements (items) describe their parents' past attitudes and behaviors (ie, *My parents trusted me*). A 4-point Likert scale ranging from 1 (Strongly

disagree) to 4 (Strongly agree) was used, and items 2 & 3 were coded reversely. Higher students' mean scores in these items meant higher trust and support received from their parents in their past period. The Cronbach's Alpha for Parental Trust and Support in this study was good ($\alpha = .96$), reflecting a very good reliability.

Student's Self-Esteem: Students' Self-Esteem was measured by using Rosenberg's⁵⁸ Self-Esteem Scale (RSE), which is scored by using a 6-point Likert scale ranging from 1 (Strongly disagree) to 6 (Strongly agree). Higher students' score in RSE means higher self-esteem. The scale has 10 items (ie, *I feel that I am a person of worth, at least on an equal plane with others*), and 4 (3, 5, 8, and 10) were reversely coded. The Cronbach's Alpha of the variable in this study was good ($\alpha = .93$), reflecting a very good reliability.

Learning behavior: Students' learning behavior was measured using the learning engagement scale.⁵⁹ The general learning engagement scale has 3 dimensions (behavioral engagement, cognitive engagement, and emotional engagement) measured by 24 items. Only 7 items that measure behavioral learning engagement were adopted for this study. The sub-construct measures students' attentiveness (ie, *How often do you get schoolwork done on time?*) and school compliance (ie, *How often have you skipped class?*). Responses for each item were rated along a 5-point Likert scale from 1 (Never) to 5 (Always). Some of the items were coded reversely, and participants' scores of the items meant higher learning engagement. The Cronbach's Alpha for this study was good ($\alpha = .97$), reflecting a very good reliability.

Data Analysis

In this study, the data was analyzed using Statistical Package for Social Science (SPSS) version 26, PROCESS Macro for SPSS, and Jeffrey's Amazing Statistical Program (JASP). The data set in an excel file was generated from google forms (online questionnaire forms). In contrast, responses from a hard-copied questionnaires were added to the excel data set and coded as variables within SPSS. The analysis process started with testing the model fitness through a Confirmatory Factors Analysis (CFA) using JASP. Descriptive statistics

analysis, reliability, and correlation analysis were also preliminary analyses conducted using SPSS before testing the study's hypotheses.

Results

The results are presented in 2 categories. First, we present the results from the preliminary analysis which includes Confirmatory Factor Analysis, correlation analysis between the variables, and the descriptive statistics of the variables. Second we present the regression results which relates to hypotheses testing

Preliminary Results of Confirmatory Factor Analysis

In this study, we employed 3 main variables validated by previous literature. In addition, before hypothesis testing, a CFA was done as one of the preliminary analyses for latent variables. All the variables had appropriate values for Comparative Fit Index ($CFI > 0.8$), Tucker-Lewis Index ($TLI > 0.7$), Root mean square error of approximation ($RMSEA < 0.06$), and the Goodness of fit index ($GFI > 0.9$), showing the model fitness. Except for self-esteem, all other variables had the items' factor loadings above 0.7. Four items (3, 4, 8, and 10) for general self-esteem were removed following their factor loadings being below 0.6.

The descriptive analysis of the variables in this study indicated that skewness and kurtosis values fell within an acceptable range of normal distribution (skewness range = 0.019 and 0.652; kurtosis range = 0.225 and 1.124).⁶⁰ All variables' mean scores were above the average level. The internal consistency reliability estimates ranged from good ($\alpha = .88$) to strong ($\alpha = .97$) showing a positive and significant correlation between the variables. A relative stronger correlation was found between parental trust or support and students' self-esteem ($r = .523$, $P < .01$). Other results are shown in Table 2 below.

Modeling Results

The moderated mediation model results are presented in this section. We first test our hypotheses and present our results and significance level through the table, then, we also present the results through the proposed model

Hypotheses Testing Through a Moderated Mediation Model

Based on the existing literature on the influences of parental trust and support (PTS) on students' behavioral learning engagement (LE beh) at schools, this study tested whether the proposed causal effect can be transmitted through students' general self-esteem (GSE) as mediators (H1). The hypothesis was supported; the results show that GSE explains

the mechanism underlying the relationship between PTS and learning engagement at school. Although PTS had a positive and significant direct effect on students' behavioral learning engagement ($\beta = .2125$, $SE = 0.1508$, $P < .05$), GSE's mediation effect in the relationship between the 2 variables was positive and statistically significant ($\beta = .0912$, $SE = 0.0134$, $P < .001$), leading to greater total effect ($\beta = .3037$, $SE = 0.0553$) compared to direct and indirect effects when taken alone. More results are shown in Table 3 below, and all the results are at the confidence level of 95%.

Moderation Effect Through a Path Model

The moderated mediation analysis results from SPSS macro are presented in Figure 2 below. The interaction effect of parental trust and support (PTS) on students' college grades is statistically significant, indicating that the relationship between PTS and students' general self-esteem (GSE) is moderated by college grades (H2). Our third hypothesis (H3) proposed that college grade moderates the relationship between GSE and students' behavioral learning engagement at school. The results have indicated that the interaction between GSE and students' college grades is statistically significant, indicating that the relationship between GSE and learning behavior is moderated by college grades.

Discussion

Trust and support of parents to their children at their younger age have shown a greater influence on their later behavioral learning engagement at school. Although such relationship had been demonstrated by other researchers in different cultures of Europe, Asia, South and North America,^{8,61} this study is among few that that revealed reveal the existence of such relationship in African culture as well.³⁻⁵ From the sample drawn purposely for this study, the hypothesized causal effect (parental trust and support on learning engagement) to be mediated by students' self-esteem was supported (H1). The results suggest that parental trust and support for their younger children positively affect their self-esteem, which further affects their college learning engagement. Drawing from other studies,^{62,63} it is supported that trust, support, and attachment with parents stimulate self-esteem during childhood and adolescence. Parental trust and support are one of the constructs incorporated into parenting, specifically the attachment level. This study is in line with other studies which suggest that self-esteem affects learning behaviors and academic performance.

Although parental trust and support have positive and significant relations with students' self-esteem at college, the results have shown that such a relationship varies based on students' college grades. Generally, the effect of parental trust and support (independent variable) on students' self-esteem (mediator) is moderated by students' "college grades (H2). In this case, it is suggested that students' self-esteem is

Table 2. Descriptive Statistics, Reliability, and Correlation of the Study Variables.

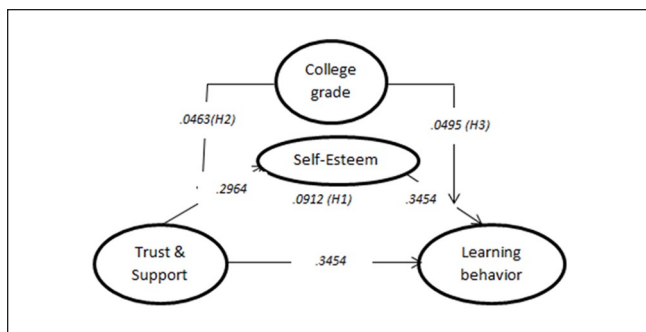
Variable	Descriptive				Reliability	Correlation			
	Mean	SD	Skewness	Kurtosis	α	1	2	3	4
1 College grade	3.44	0.848	0.652	1.124	.88	1	.488**	.281**	.312**
2 Trust & support	2.969	0.444	0.019	0.225	.96	-	1	.523*	.224**
3 Self-esteem	4.644	0.637	0.033	0.882	.93	-	-	1	.452**
4 Learning beh.	3.507	0.626	0.051	0.298	.97	-	-	-	1

Note. SD means standard deviation.

** $P < .01$. * $P < .05$ (2-tailed).

Table 3. Mediation (Direct and Indirect) and Moderation Effect of Variables.

	Effect (β)	SE	t	p	95% Level of confidence interval	
					LLCI	ULCI
<i>Direct effect</i>						
PTS - GSE	.2964	0.1508	1.9657	.0496	0.0006	0.5923
PTS - LE Beh.	.2125	0.0419	5.0776	.0000	0.1304	0.2947
GSE - LE Beh.	.3454	0.1361	2.5379	.0113	0.1784	0.6125
<i>Indirect effect</i>						
PTS - GSE - LE Beh	.0912	0.0134		.0000	0.0659	0.1172
<i>Total effect</i>						
	.3037	0.0553		.0000	0.0535	0.1763
<i>Moderation effect (Int_1)</i>						
PTS—College grade	.0463	0.0436	1.0609	.0090	0.0393	0.1319
GSE—College grade	.0495	0.0377	1.3151	.0087	0.1234	0.0244

**Figure 2.** Moderated mediation results through paths.

dynamic as it changes (improves) from lower college grades to higher college grades. Numerous studies on students' self-esteem involved primary and middle school students,⁶² while gender and family socioeconomic status showed greater influence. With this study, it is suggested that college students' grades are an important factor affecting their esteem levels.

Self-esteem is important for students' learning behaviors, self-efficacy, and academic achievement.²⁶ In our study, the results have supported the third hypothesis (H3), which predicted that the relationship between students' self-esteem at college and their learning engagement is moderated by their

college grades. The analysis showed a statistically significant interaction between self-esteem and students' college grades, indicating its moderation role in the relationship between self-esteem (as mediator) and learning engagement (as outcome variable). From these results, it can be concluded that, although the effect of students' self-esteem on their learning engagement is positive, such effect varies among students of different college levels.

Generally, the results from this study show a positive and significant relationship between parental trust/support and learning engagement for college students. However, such a relationship is mediated and moderated by students' self-esteem and college grades respectively. Although there is also a direct relationship between the 2 main variables (independent and outcome), such relationship becomes stronger when students' self-esteem is involved. The direct and indirect effect of parental trust and support on students' learning engagement varies among students of different college level

Limitations and Suggestions for Further Studies

This study involved participants from Africa. However, because there has been a lack of enough African literature in the region for several decades, the generalization process of

the findings from this study is still challenging. Although studies of parental trust and the subsequent effects on adolescents' later behaviors are very important, cultural representation is also essential before drawing a general conclusion.³⁹ This study is not enough to speak for the vast cultural environment of the African region. Further studies can be done by involving other age groups (ie, primary school age group), examining the interrelation of the variables and creating a clear picture of parenting in African culture and its associated outcome on children's behavior in their later age.

Although learning engagement is an important construct in education processes, students, teachers, and parents put more value on the construct because it is closely associated with academic performance and students' competence. Further studies are needed to examine the interaction between self-esteem, learning engagement, and academic achievement among students of different college grades in the African context. The use of WhatsApp was challenged by the fact that not all university students own smartphones. Sometimes when the link was shared to a WhatsApp group of more than 150 members, only 20 would feel it. In addition, based on our measurement scales, self-reporting might lead to biased results as well

Conclusion

Parenting, in its generality, notably influences children's behaviors in their adolescence life. Achievement in education depends on both the home and the school environment (physical and psychological). The effect of trust and support from parents is tremendous in children's later life, as it enhances their self-esteem, which makes them participate fully in their learning process at school. Although self-esteem positively influences students' behavior of learning (learning engagement) at college, such influence tends to vary among students of different college grades. For parents, giving children a good and secure start in their life is very important. Nurturing, protecting and guiding are among the parental roles that work together with trust and support. The role of parental trust and self-esteem in one's personal and professional life can never be underestimated. This study has revealed how such trust and self-esteem is important in adolescents' education process (learning).

Acknowledgments

Authors appreciate the contribution and support from the Teachers College of Education, Zhejiang Normal University, specifically from the psychology department.

Data Availability

Not applicable.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the National Natural Science Foundation of China (31871124).

Ethical Approval

The study got approval from the first Zhejiang Normal University's ethics committee (protocol code 20210069) approved in 2021.04.01 and followed the World Medical Association Declaration of Helsinki.

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