Predictors to happiness in primary students: positive relationships or academic achievement

Cynthia Leung

The Hong Kong Polytechnic University

Janet T.Y. Leung

The Hong Kong Polytechnic University

Sylvia Y.C.L. Kwok

The City University of Hong Kong

Anna Hui

The City University of Hong Kong

Herman Lo

The Hong Kong Polytechnic University

H.L. Tam

The City University of Hong Kong

Simon Lai

The Hong Kong Polytechnic University

Corresponding author: Cynthia Leung

Email: ssleung@polyu.edu.hk

Abstract

This study aimed to examine the role of positive relationships and academic achievement in predicting student well-being, i.e. subjective happiness. This study employed a longitudinal design with two waves of data collection on a sample of 786 primary school students in Hong Kong. Students completed questionnaires on parent-child relationship, teacher-student relationship, peer relationship, academic achievement, and happiness at the beginning and end of the school year. Path analysis was used for data analysis. The results indicated that Time 1 parent-child relationship, teacher-student relationship and peer relationship were associated with Time 1 academic achievement. However, only Time 1 parent-child relationship and peer relationship were predictive of Time 2 happiness, but not Time 1 teacher-student relationship. Time 1 academic achievement was a mediator between Time 1 parent-child relationship and peer relationship and Time 2 happiness. The results suggested the need to put in place strategies to enhance parent-child relationship, teacher-student relationship and peer relationship.

The pursuit of happiness is regarded as an important human goal, and happiness is important to both physical and mental health (Lyubomirsky, Sheldon, & Schkade, 2005). Happiness is defined "in terms of frequent positive affect, high life satisfaction and infrequent negative affect" (Lyubomirsky et al., 2005, p.115). Happiness can also be described as subjective well-being (Diener, 2006), and is a subjective phenomenon, depending on individual judgment. In fact, happiness and subjective well-being are highly correlated and it is suggested that happiness and subjective well-being can be used interchangeably (Medvedev& Landhuis, 2018). Lyubomirsky et al. (2005) also use the term chronic happiness level to describe a person's level of happiness in a particular time period.

In terms of the determinants of happiness, Lyubomirsky et al. (2005) focus on set point (temperament or personality trait), life circumstances (e.g., personal life history, marital status and occupational status etc.), and intentional activity (e.g., what people do and think). Research shows that circumstantial factors only account for a small variance of happiness whereas dispositional traits such as extraversion play a critical role in determining happiness. Happiness-increasing strategies account for a significant portion of variance in accounting for individual difference in happiness, with the best predictors being mental control, direct attempt and social affiliation (Tkach & Lyubomirsky, 2006).

With social affiliation being one of the important happiness-increasing strategies, many researchers focus on personal relationships as predictors of happiness. Personal relationship is recognized as one of the strong predictors of happiness (Holder & Coleman, 2009). For example, in a cross-sectional study among 9- to 12-year-old children, happiness is associated with perception of being an important member of the family, not a disappointment to parents, and parents not expecting too much of them. Furthermore, happiness is associated with having many friends, being popular with girls, and frequent visit with friends outside school (Holder & Coleman, 2009). In another cross-sectional study on South African

secondary students, subjective health (physical health and happiness) is associated with positive perception of schools and parental relationship (Peltzer, 2007). Positive relationship with teachers is also found to be related to life satisfaction (Suldo, Riley, & Shaffer, 2006).

Among students, one of the major circumstantial factors is their academic achievement, as they spend a substantial portion of time in school. This might be particularly relevant in Asian cultures where academic achievement is emphasized (Suldo et al., 2006). Though Tkach and Lyubomirsky (2006) claim that circumstantial factors are less important in predicting happiness, two studies on children and adolescents show that academic performance is related to self-reported happiness (Lopez-Perez & Fernandez-Castilla, 2018) and life satisfaction (State & Kern, 2017). Another research show that student perception of their own academic competence is associated with their life satisfaction (Suldo et al., 2006).

The above research shows that academic achievement and interpersonal relationship are both predictors of happiness. Other research shows that academic achievement is associated with interpersonal relationship. In a meta-analysis on teacher-student relationship and academic outcomes among students from preschool to grade 12, there is a medium to large effect for teacher-student relationship and academic engagement, and a small to medium effect for teacher-student relationship and academic achievement (Roorda, Koomen, Spilt, & Oort, 2011). In a cross-sectional study on high school students, teacher-student relationship is found to be an important predictor of academic outcomes (Martin, Marsh, McInerney, Green, & Dowson, 2007). In a more recent study over one school year, teacher-child conflict is associated with poorer English language arts achievement in primary students (Rucinski, Brown, & Downer, 2018). In a cross-sectional study of European and Asian American undergraduate students, parent-child relationship is associated with academic achievement, and self-efficacy mediates the association between parent-child relationship and academic achievement (Yuan, Weiser, & Fischer, 2016). In a longitudinal study on high

school students, positive parent-child relationship is associated with better academic achievement (Turley, Desmond, & Bruch, 2010). In another longitudinal study, parent-child relationship is found to be associated with school bonding (Terrett, O'Connor, Hawkins, Sanson, & Smart, 2012). Relationship with peers is also found to be associated with classroom engagement in a group of high school students (Mikami, Ruzek, Hafen, Gregory, & Allen, 2017). In another group of high school students, the number of friends participating in the same activity is associated with academic outcome such as engagement and grade point average (Knifsend, Camacho-Thompson, Juvonen, & Graham, 2018).

Integrating the above literature, it is likely that academic achievement may mediate the association between positive relationships and happiness. However, none of the above studies has examined the mediating role of academic achievement between positive relationships and happiness. This might be particularly relevant in Asian societies where academic achievement is highly valued. Furthermore, most of the above studies are on adolescents and studies on primary school children are more limited.

The aim of the present study was to examine the mediating role of academic achievement between positive relationships (parent-child relationship, peer relationship, teacher-student relationship) and happiness among a group of primary students, using a longitudinal design. The hypotheses were:

1. Time 1 positive relationship (parent-child relationship, peer relationship, teacher-student relationship) would be positively correlated with Time 1 academic achievement.
2. Time1 positive relationship (parent-child relationship, peer relationship, teacher-student relationship) would be positively related to Time 2 happiness.
3. Time 1 academic achievement would be positively related to Time 2 happiness.

4. Time 1 academic achievement would be a mediator for Time 1 positive relationship (parent-child relationship, peer relationship, teacher-student relationship) and Time 2 happiness.

Method

Design

This was a longitudinal survey with data collected in September 2016 (Time 1) and June 2017 (Time 2).

Participants

The participants were students from two primary schools with similar background in terms of students' socioeconomic status and academic performance. There were 980 primary 4 to 6 students (F = 441, 45%; M = 539, 55%) who participated in the Time 1 assessment. Among them, 786 students (F = 358, 45.5%; M = 428, 54.5%) completed the Time 2 assessment. The follow-up rate was 80.2%. Among participants with complete data, there were 258 (32.8%), 267 (34.0%), and 261 (33.2%) primary 4, 5, and 6 students, respectively. Their mean age was 9.88 years (range: 8 to 13 years).

Measures

The students were requested to complete the following questionnaires twice, in the beginning (Time 1) and at the end of the school year (Time 2).

Parent-child relationship (PCR) – this was measured using the Relationship with Parent sub-scale of the Self- Description Questionnaire (Marsh, Smith, & Barnes, 1983). The Chinese version was validated for use with Hong Kong Chinese primary school children as part of the Assessment Program for Affective and Social Outcomes, 2nd version (APASO-II; Education Bureau, 2013). There were 9 items measured on a 4-point scale from 1 (*totally disagree*) to 4 (*totally agree*). An example item is "I like my parents". The reliability (Cronbach's Alpha) was .92.

Peer relationship (PER) – this was measured using the Relationships with Peers sub-scale of the Self- Description Questionnaire (Marsh et al., 1983). The Chinese version was validated for use with Hong Kong Chinese primary school children as part of the Assessment Program for Affective and Social Outcomes, 2nd version (APASO-II; Education Bureau, 2013). There were 6 items measured on a 4-point scale from 1 (*totally disagree*) to 4 (*totally agree*). An example item is "Other people want to be my friend". The reliability (Cronbach's Alpha) was .92.

Teacher-student relationship (TSR) – this was based on the Teacher items of the Quality of School Life Scale (Ainley, Goldman, & Reed, 1990; Pang, 1999). The Chinese version was validated for use with Hong Kong Chinese primary school children as part of the Assessment Program for Affective and Social Outcomes, 2nd version (APASO-II; Education Bureau, 2013). There were 7 items measured on a 4-point scale from 1 (*totally disagree*) to 4 (*totally agree*). An example item is "My teacher guides me patiently". The reliability (Cronbach's Alpha) was .95.

Academic achievement (ACH) – this was based on the Achievement Scale of the Quality of School Life Scale (Ainley et al., 1999). The Chinese version was validated for use with Hong Kong Chinese primary school children as part of the Assessment Program for Affective and Social Outcomes, 2nd version (APASO-II; Education Bureau, 2013). There were 6 items measured on a 4-point scale from 1 (*totally disagree*) to 4 (*totally agree*). An example item is "I always enjoy successful experience at school". The reliability (Cronbach's Alpha) was .93.

Happiness (HAP) – this was measured using the Subjective Happiness Scale (Lyubomirsky & Lepper, 1999). The scale consisted of 4 items and participants were to rate the extent to which the descriptions were accurate of themselves on a 7-point scale from 1(*strongly disagree*) to 7 (*strongly agree*). It was validated for use with Hong Kong Chinese

population by Nan et al. (2014). In this study, only three items were used as one of the items did not correlate with the other items in the scale (Lai et al., 2018). The reliability (Cronbach's Alpha) estimates were .87 and .86 for Time 1 and Time 2 measures respectively.

Procedure

Upon securing the consent of the school principals to participate, consent forms explaining the purpose of the study were sent to the students and their parents. At the beginning (September 2016) and at the end of the school term (June 2017), with parents' and students' consent, research assistants supervised the students to complete the questionnaires in class in each school, without the presence of teachers. It was clearly stated that participation in the survey was voluntary and that non participation would not affect the grades of the students in the schools. The survey could be completed within 20-30 minutes. This study was approved by the Ethics Committee of the affiliated university.

Data analysis

Less than 5% of the responses were missing due to participants' omitting certain questionnaire items. Multiple imputation was used to replace the missing data (Acock, 2005). This procedure could retain the current sample size and reflect the responses of the participants (Rubin, 1996; Schafer & Olsen, 1998). Multi-collinearity diagnostic analyses were performed to examine whether the constructs conveyed essentially the same information. Path analysis was used to examine whether the data supported the theoretical model.

The data was analyzed using the maximum likelihood estimation in SPSS AMOS 25.0 (Arbuckle, 2012). The overall fit of the models was assessed using χ^2 statistics, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis index (TLI), Normed Fit Index (NFI), Goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), and Incremental Fit Index (IFI). In terms of acceptable model fit, .90 has been suggested as acceptable and .95 or above as excellent for CFI, TLI, NFI, GFI, AGFI, and IFI

(Hu and Bentler, 1999). For RMSEA, a value smaller than 0.08 reflects acceptable model fit, and values greater than 0.10 should lead to model rejection (Browne and Cudeck, 1993).

Results

The attrition rate was 19.8% for the follow-up assessment. The mean and standard deviations of positive relationships, academic achievement and happiness and their correlations are shown in Table 1. All variables at both times were positively correlated with one another ($p < 0.001$) and all reliability estimates were above .70. Variance inflation factors (VIF < 5) and tolerances (Tol > 0.20) from multi-collinearity diagnostic analyses showed that the measures of positive relationships, academic achievement, and happiness were not redundant.

The path model is shown in Figure 1. The exogenous variables were Time 1 parent-child relationship, peer relationship and teacher-student relationship. The endogenous variables were Time 1 academic achievement and Time 1 and Time 2 happiness. School and child gender were controlled.

Model fit results of path analysis indicated $\chi 2$ (9) = 49.02, $p < 0.001$, CFI= .97, TLI = .91, NFI = .97, IFI = .97, and RMSEA = 0.075 (90% CI: 0.055, 0.097). The results suggested that the data supported the model (Hu & Bentler, 1999).

Time 1 parent-child relationship ($\beta = .20$, $p < .001$), peer relationship ($\beta = .39$, $p < .001$), and teacher-student relationship ($\beta = .24$, $p < .001$), were positively associated with Time 1 academic achievement. Time 1 parent-child relationship ($\beta = .13$, $p < .001$), peer relationship ($\beta = .12$, $p < .001$), and academic achievement ($\beta = .09$, $p = .023$), were positively associated with Time 2 happiness. Time 1 teacher-student relationship ($\beta = -.02$, $p = .481$), however, was not associated with Time 2 happiness. In terms of the indirect relationship between Time 1 positive relationship and Time 2 happiness, the indirect effect was significant for Time 1 parent-child relationship ($\beta = .018$, $p = .017$), and Time 2 happiness, as

well as Time 1 peer relationship (β = .035, p = .029) and Time 2 happiness. The indirect effect of Time 1 teacher-student relationship on Time 2 happiness was not significant (β = .022, p = .429). The details are shown in Figure 2. The direct, indirect and total effects are shown in Table 2.

Discussion

Hypothesis 1 on the association between Time 1 positive relationship and Time 1 academic achievement was supported. Time 1 parent-child relationship, teacher-student relationship and peer relationship were associated with Time 1 academic achievement. The findings are consistent with the literature on positive relationship and academic achievement (Knifsend et al., 2018; Rucinski, 2018; Yuan et al., 2016). Though academic achievement is generally considered as a cognitive activity, the findings suggest that the psychosocial well-being of the child (in the sense of having positive relationship with significant others) is an important contributor to academic achievement. In understanding a child's well-being, it is important to remember that a child's cognitive, psychosocial and physical domains are inter-related (Sroufe & Rutter, 1984; Tian, Zhang, Huebner, Zheng, & Liu, 2016), and each domain cannot be considered in isolation.

Hypothesis 2 on the association between Time 1 positive relationship and Time 2 happiness was largely supported. Time 1 parent-child relationship and peer relationship were positively associated with Time 2 happiness. The findings are consistent with previous research on positive relationships as a predictor of happiness (Holder & Coleman, 2009; Martin et al., 2007; Peltzer, 2007; Terrett et al., 2012). Social affiliation is an important strategy for enhancing happiness (Tkach & Lyubomirsky, 2006). The findings also highlight the importance of positive relationships to the well-being of children. The findings are consistent with the ecological model which emphasizes the importance of individual and contextual factors in a person's development (Terrett et al., 2012). The results, however, are

inconsistent with the findings of Suldo et al. (2006) on the association between teacher-student relationship and life satisfaction. In primary schools in Hong Kong, students are taught by different teachers in different subjects and the time spent with each teacher depends on the subject(s) taught by the teacher. Whereas students spend most of the school hours with their classmates, they spend different amount of school time with different teachers. This might be one of the possible explanations for the insignificant association between teacher-student relationship and happiness.

Hypothesis 3 on the association between Time 1 academic achievement and Time 2 happiness was supported. The results are consistent with the findings of Lopez-Perez and Fernandez-Castilla (2018) and State and Kern (2017). The findings are also consistent with the emphasis on academic achievement in Asian culture (Suldo et al., 2006).

Hypothesis 4 on academic achievement as a mediator between positive relationship and happiness was partially supported. Academic achievement was a mediator for parent-child relationship, peer relationship and happiness, but not for teacher-student relationship. Previous literature has not explored the mediator effect of academic achievement and the present study provides some evidence to fill this research gap.

The findings have significant implications for parent training. While parents would try their best to promote the well-being of their children, our findings indicate that it is a positive parent-child relationship that contributes to well-being, not just academic achievement. The finding is particularly important in Asian cultures where academic achievement is emphasized and academic work is often a source of parent-child conflict. It is important to share with parents that a positive parent-child relationship enhances the well-being of their children, and their academic achievement (Lim, You, & Ha, 2015). Parent training should focus on supporting parents to develop a positive relationship with their children, such as

spending quality time with their children, and having positive communication with their children (Tam, Kwok, Ling, & Li, 2018).

The findings also have implications for prevention programs in schools. As peer relationship and teacher-student relationship are important for student academic achievement, measures to promote these positive relationships should be considered. To enhance peer relationship, children should be guided to develop appropriate attitudes towards friendship and taught to develop social skills, confliction resolution skills and problem solving skills. Teachers could also be supported to enhance their strategies in developing positive teacher-student relationship and to promote a supportive and harmonious classroom environment. Martin et al. (2007) argue for the importance of professional development in helping teachers to build relatedness in the classroom.

There are some limitations in the study. First, the study is based on the self-report of students. Reports from parents and teachers would provide other perspectives for triangulation. Second, academic achievement was based on student perception of their academic achievement, rather than actual attainment. As the two participating schools have different assessment systems, it was not possible to obtain a common measure of actual achievement. Third, the two participating schools were competitive schools with good academic track records and the students were likely to be capable students. The findings of the study would need to be interpreted in the light of capable students in a competitive academic environment.

To conclude, using a longitudinal design, this study shows that positive relationship with parents, teachers and peers are conducive to students' academic achievement. Academic achievement mediates the relationship between parent-child relationship, peer relationship and academic achievement. Strategies should be in place in the community and schools to enhance parent-child relationship, teacher-student relationship and peer relationship.

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Table 1

Means, Standard Deviations and Correlations of the Variables (N = 786)

	PCRT1	PERT1	TSRT1	ACHT1	HAPT1	HAPT2
PCRT1	---					
PERT1	.42	---				
TSRT1	.37	.33	---			
ACHT1	.45	.55	.44	---		
HAPT1	.51	.46	.31	.49	---	
HAPT2	.38	.37	.19	.36	.49	---
Mean	3.23	2.86	3.19	2.89	5.01	5.00
SD	0.67	0.76	0.70	0.72	1.53	1.43

Note: All correlations are significant at $p < .001$

PCRT1: Time 1 parent-child relationship, PERT1: Time 1 peer relationship, TSRT1: Time 1 teacher-student relationship; ACHTI: Time 1 academic achievement; HAPT1: Time 1 happiness; HAPT2: Time 2 happiness

Table 2

Total, Direct and Indirect Effects of Time 1 Positive Relationship on Time 2 Happiness

	Direct effect	Indirect effect	Total effect
Parent-child relationship	.125	.018	.143
Peer relationship	.119	.035	.154
Teacher-student relationship	-.024	.022	-.002

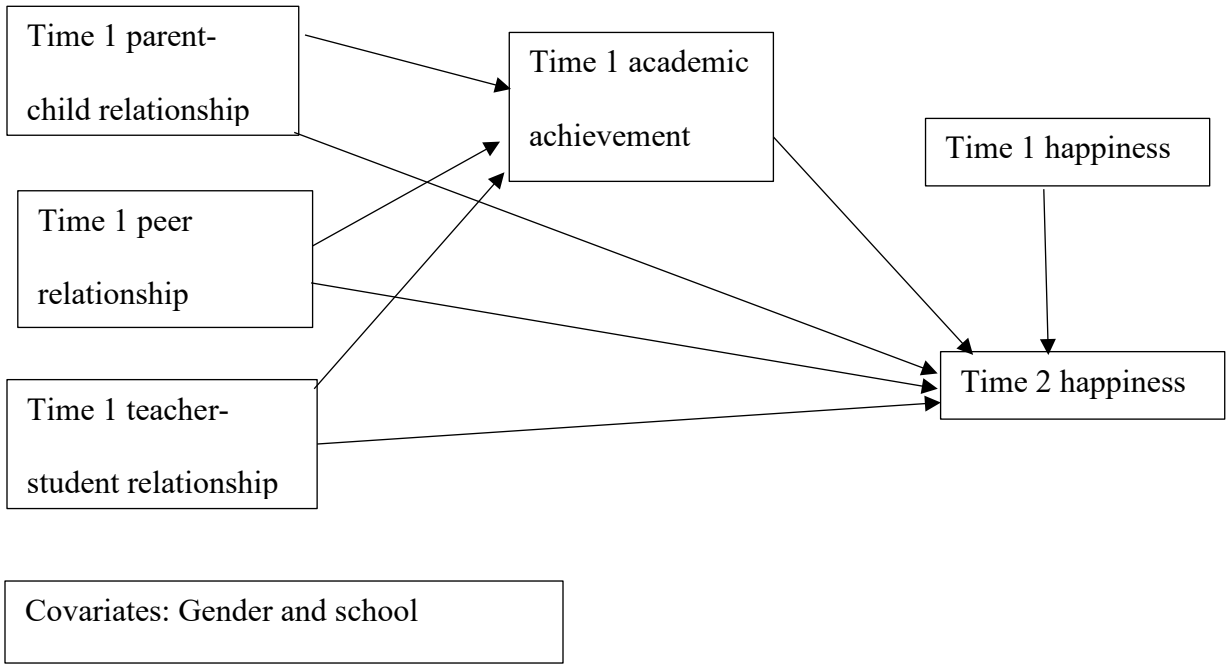

Figure 1. Path diagram showing the postulated relationship among variables

Note: For simplicity, the correlated errors among the variables are not shown.

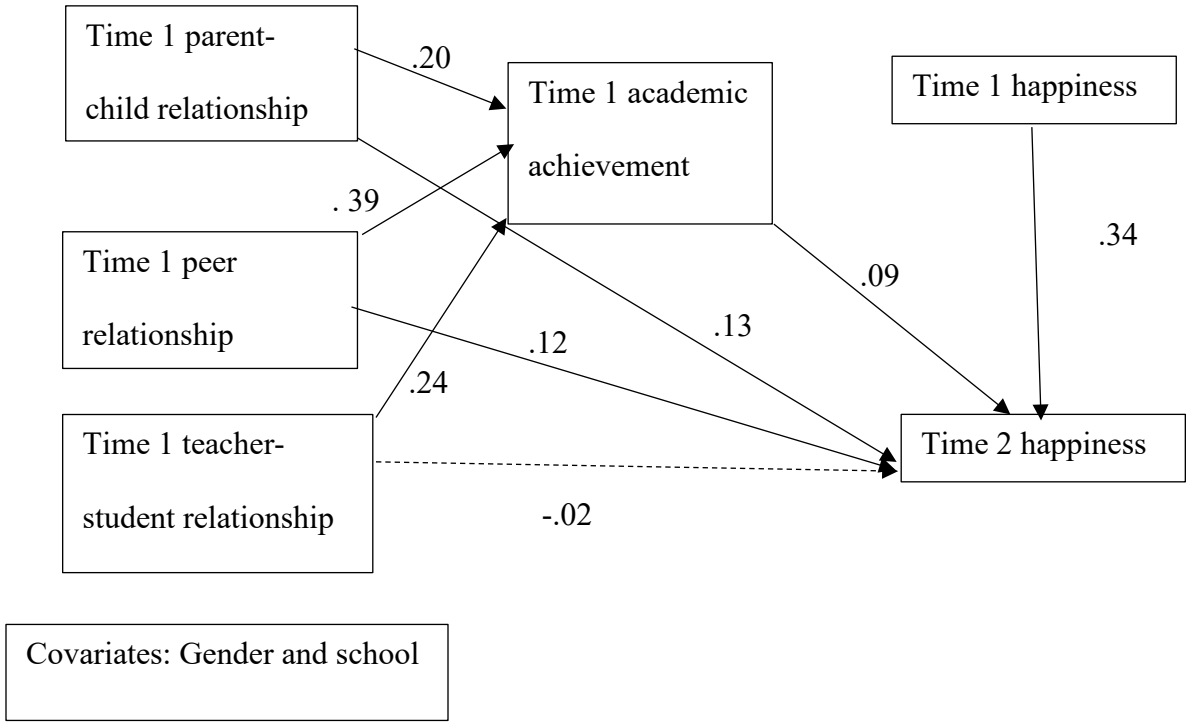

Figure 2. Path diagram showing the relationship among variables

Note: For simplicity, the correlated errors among the variables are not shown.