A Project entitled

Examining the relationship between students perceived teacher-student relationship and academic motivation

Submitted by

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Declaration

I, *AU CHEUK KWAN (*), declare that this research report represents my own work under the supervision of *Dr. CHAN Wing Yan Arita*, and that it has not been submitted previously for examination to any tertiary institution.

Signed: (Au Cheuk Kwan)

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Abstract

This study aims to investigate the relationship between Hong Kong primary school students' perceived teacher-student relationships and their academic motivation. With the sample size of 160 students from different grade levels, quantitative research using a self-reported questionnaire will be conducted. The questionnaire will be extracted from the Student Version of the Teacher-student relationship Inventory (S-TSRI) and Self-Regulation Questionnaire-Academic (SRQ-A), based on the theoretical framework of attachment theory and self-determination theory. The reliability of the inventory is supported by Cronbach's alpha and factor analysis. The study focused on evaluating the dimensions of teacher-student relationships, including satisfaction, instrumental help, and conflict. Investigate how the above dimensions relate to intrinsic and extrinsic academic motivation respectively. The data collected will be analysed with the use of correlation coefficients. The findings show significant correlations, indicating a positive correlation in positive teacher-student relationships with both intrinsic and extrinsic academic motivation. Meanwhile, the negative dimensions in teacher-student relationships — conflict, show negative correlations between academic motivation. It is found that satisfaction and instrumental help show greater correlation in extrinsic and intrinsic motivation respectively. Gender tendency also appears and shows different sensitivity to the dimension in TSR. This study fills the gap in the current research by focusing on primary school students in the Hong Kong context and provides insights for educators to enhance positive teacher-student relationships in order to promote

students' overall academic motivation.

Introduction

In Hong Kong, primary school students generally spend about seven hours in school during the regular school day (Legislative Council Secretariat, 2018). With the long time getting along with teachers, it is worth investigating how students perceived teacher-student relationships (TSR) influence them. These relationships are not only about interpersonal connections but may also serve as a function in constructing students learning. The way how student evaluate their relationship with teachers may contribute to their academic motivation and eventually influence their academic outcomes (Jasmi & Hin, 2014). Academic motivation is suggested to be a significant determinator of students' success in school (Pintrich, 2003). It plays an important role in learning, especially for primary school students. Primary school is the foundational stage of education where students may develop their attitudes toward learning (Myles, 2022). Motivating students to learn during this stage sets the foundation for their future academic pursuits. Therefore, this study aims to examine the relationship between primary school students' perceived TSR and academic motivation. Instead of only seeing TSR as a whole, this research investigates whether there is a factor in students' perceived TSR shows greater relativeness in academic motivation. It allows a more subtle understanding of specific dimensions within the relationship, providing insight into how teachers can help students enhance their academic motivation. Meanwhile, gender differences in how students

respond to different dimensions of TSR will also be discussed.

Literature review

To evaluate the relation between students' perceived TSR and academic motivation, there are serval concepts that need to be focused on. The following part will introduce the related conceptual definition and operational definition of the TSR and academic motivation one by one, hence coming up with the development of research questions.

Teacher-student relationship

Attachment theory

Attachment theory is a widely used theoretical approach to explain TSR. It originally emphasizes the importance of bonding between infants and caregivers for socio-emotional development (Bowlby, 1982). Nowadays, attachment theory can also be used to emphasize the emotional connection between students and teachers. This theory suggests that when students have an emotional bond with teachers and experience a sense of trust and security in the learning situation, they will be more likely to receive learning, engage in the learning tasks and develop academic curiosity (Roorda et al., 2011).

Dimensions of TSR

Teacher and student relationships can be analysed through the dimensions of closeness and conflict (Mason et al., 2017). Closeness is related to warmness, support, and satisfaction, and

conflict refers to negative interactions and unpleasant relationships. Also, dependency is suggested to evaluate whether the student is clingy, over-dependent, and over-reliant, especially for younger children who are studying kindergarten or junior grade in primary school (Hamre & Pianta, 2001). For older children, a dimension in instrumental help is proposed (Furman & Buhrmester, 1985). Instrumental help see how teachers provide encouragement, advice, and a caring attitude toward the students. It is believed that positive dimensions like satisfaction, closeness, and instrumental help are positively consistent with the TSR. Also, these positive dimensions are consistently associated with beneficial outcomes in students learning, such as increased engagement, better academic performance, and positive attitude toward schools and teachers (Hamre & Pianta, 2001). A positive TSR is generally assumed to be linked to positive consequences. Oppositely, negative dimensions like conflict are connected to greater chances of behavioural problems in students, such as disengagement, lower academic achievement and aggression, etc (Milatz et al., 2014). It is suggested that fostering a positive dimension in TSR is significant in encouraging students' positive academic and behavioural outcomes.

To discuss the operational matter in this study, scales of S-TSRI (The Student Version of the Teacher-student relationship Inventory) are used to measure the TSR. This scale provides a structured approach to understanding and quantifying TSR. As this study cuts in from students' viewpoint, students' perceived TSR will be measured in 14 items from students' responses. S-TSRI uses the dimension of satisfaction, instrumental help, and conflict to

estimate TSR (Ang et al., 2020). Items in S-TSRI can indicate the students' emotional attachment and recognition to teachers, willingness to seek help from teachers, and negative interaction with teachers. The content of S-TSRI fits the dimensions suggested by attachment theory and hence is able to measure the relationship between teacher and students in this study.

Academic motivation

Self-determination theory

Academic motivation is suggested as one of the significant factors in predicting students' academic outcomes (Osborne & Jones, 2011). Academic motivation is the desire of learners to study, and encourage learners to engage in different learning activities (Filgona et al., 2020). With a higher level of academic motivation, the individual is predicted to perform a higher degree and quality of engagement in learning (Greene et al., 2004). The self-determination theory provided ideas on the factors of learning motivation (Ryan & Deci, 2000). This theory suggests levels of autonomy, attachment, and competence are the basic needs for academic motivation. Autonomy refers to the individual perception of feeling that they can have control over their behaviours. Through positive interaction between teachers and students, students' sense of autonomy could be enhanced and contribute to the increment in academic motivation (Deci & Ryan, 2002). This shows that the TSR may have certain influences and links to the factors of students' learning motivation.

Types of motivation

There are three types of motivation suggested by Deci and Ryan (2002), which are intrinsic motivation, extrinsic motivation, and amotivation. This study will focus on the investigation of intrinsic and extrinsic motivation. To introduce intrinsic motivation, it encourages individuals to engage in certain activities for satisfaction, pleasure, and enjoyment. Meanwhile, intrinsic motivation can be classified into three categories, which are the motivation to knowledge, to accomplishment, and to stimulation. First, intrinsic motivation in knowledge refers to the individuals' satisfaction from discovering new knowledge. Second, intrinsic motivation in accomplishment refers to the positive feeling achieved when an individual completes tasks or attains accomplishment. Third, intrinsic motivation in stimulation is the motivation to perform activities that are connected to stimulating sensations.

Regarding extrinsic motivation, it proposed that there are external factors to cause individuals to perform actions (Ryan & Deci, 2000). There are also three types of extrinsic motivation, which are external regulation, introjected regulation, and identified regulation. External regulation refers to motivation gained by external incentives, like getting awards or avoiding punishment. When it comes to the primary school setting, the external incentive might be getting satisfying academic results, getting praise from teachers, or avoiding penalties. In introjected regulation, individuals perform behaviours due to internalised beliefs based on a sense of obligation. They think they are supposed to or have the responsibility for conducting

the behaviours. The third type of extrinsic motivation is identified regulation; individuals conduct activity from their own willingness because they believe that activity or behaviours contribute to positive results. Although it is an extrinsic motivation, it contains high autonomy.

In regard to amotivation, it is distinct from intrinsic and extrinsic motivation. Individuals find there is no reason for them to carry out an action. They are unable to find consistency between their action and the result. They also see the result is out of their control and non-self determined. As it is not a positive force that motivates students' behaviours, it will not be analysed in this research.

To measure the academic motivation of students, students will be asked about the reasons behind their learning behaviours by using the scale of Self-Regulation Questionnaire-Academic (SRQ-A). This scale developed by Ryan and Connell (1989) helps categorise the reasons behind students' behaviours into four regulatory styles, which are external regulation, introjected regulation, identified regulation, and intrinsic motivation. These regulatory styles can be categorised into two different types of academic motivation, which are intrinsic and extrinsic motivation. By using SRQ-A, students' academic motivation can be measured in this study.

Investigating the correlation in primary school students

It is believed that the academic motivation of primary school students is more influenced by

teachers when compared to older students. It is because primary school students rely more on the support of teachers. Attachment theory suggested that children develop emotional connections with caregiver. When the children become older, the influences of caregiver on children reduce as the children become more independent (Bowlby, 1982). In the school environment, teachers become one of the main sources of attachment, affecting students' emotional security and learning attitudes. Compared to secondary school students, primary school students' learning motivation is more likely to be affected by their relationship with teachers (Roorda et al., 2011; Hughes et al., 2008). However, to find the linkage between perceived TSR and academic motivation, most of the existing studies focus on high school or college students in foreign countries (Wu et al., 2022; Jasmi & Hin, 2014; Maulana et al., 2013). This situation leads to a research gap in understanding this relationship in primary school students, particularly in Hong Kong's unique educational system.

Therefore, this study targets primary school students in Hong Kong to fill the research gap. By providing more empirical data for primary education in East Asia, it is hoped that this paper can help educators to enhance teaching strategies, leading to an increase in students' learning motivation. This study aims to explore the following research questions:

1. Is there any correlation between student perceived TSR and extrinsic academic motivation?
2. Is there any correlation between student perceived TSR and intrinsic academic

motivation?

3. Is there any dimension of student perceived TSR (satisfaction, instrumental help, and conflict) that shows stronger correlation toward academic motivation?

Null Hypothesis

H01: There is no association between student perceived TSR and academic motivation.

H02: Different dimensions of student perceived TSR shows similar degree of correlation toward academic motivation.

Alternative Hypothesis

H1: There is an association between student perceived TSR and academic motivation.

H2: Different dimensions of student perceived TSR shows diverse degree of correlation toward academic motivation.

Methodology

Participants

In this study, quantitative research is conducted. A total of 160 primary school students from primary 4 to 6, aged between 9 and 11, with mixed gender, are invited to finish a questionnaire about perceived TSR and academic motivation. Students are all recruited from a local school in Hong Kong. They join this study on a voluntary basis. As it is a self-reported

questionnaire, only students in primary 4 to 6 are invited, as they can better understand and respond to the questionnaire. Participants are recruited by the convenience sampling method. Researcher approach students in a local primary school through their teachers, who also help with the distribution of consent forms and providing the willingness list.

Instruments

Measuring perceived TSR

The first part of the questionnaire is about TSR. Regarding the measurement of student perceived TSR, the Student Version of the Teacher-Student Relationship Inventory (S-TSRI) is adopted in this study. S-TSRI is developed by using attachment theory and is designed to assess the TSR, especially from the student's viewpoint in Asian regions. It uses three factors in evaluating the TSR, from the dimensions of satisfaction, instrumental help, and conflict. It is a self-reported questionnaire that contains 14 items, rated by a 5-point Likert scale. Participants will rate how much they agree with the statement. With 1 point referring to strongly disagree and 5 points referring to strongly agree. The items are used in previous research by Ang et al. (2020). Every statement refers to a dimension in the TSR. For example, the statement "I enjoy attending the class of this teacher" refers to satisfaction; "If I need help, I will go to this teacher" refers to instrumental help; "If this teacher is absent, I feel relieved" refers to conflict. The score for the questions will be calculated by summing up all the items belonging to that particular dimension. This inventory is supported by previous research to be

reliable and valid (Ang et al., 2020).

Measuring Academic motivation

The second part of the questionnaire would be used to measure students' academic motivation. To measure students' academic motivation, the Academic Motivation Scale (AMS) and the Self-Regulation Questionnaire-Academic (SRQ-A) are the two widely adopted scales in current research. Yet, it is noticed that AMS is designed to evaluate the academic motivation in secondary school students. At the same time, SRQ-A targets late-elementary or middle school students. Therefore, this study would only adopt SRQ-A to evaluate the academic motivation in primary school students. The full version of SRQ-A contains 32 questions. It can be used to measure four aspects of students' academic motivation. They are external regulation, introjected regulation, identified regulation, and intrinsic motivation. The first three aspects will be taken into account as extrinsic motivation, while the last aspect is directly reflecting intrinsic motivation. It is a self-reported questionnaire using a 4-point Likert scale. Participants need to state the degree of their agreement toward the statements by 1 point referring to strongly disagree and 4 points referring to strongly agree. As the original version contains 32 questions, it is considered to be too much for primary school students and slightly demanding on their patience. To tackle this issue, the questionnaire will be extracted in this survey, while maintaining the consistency of subscales. 24 questions from SRQ-A will be provided to students in the questionnaire,

indicating their reason for doing homework, classwork, and performance in school. Each question in the scale represents a type of academic motivation. For example, the reason for doing homework could be “Because I’ll get in trouble if I don’t” (external regulation); “Because I will feel bad about myself if I don’t do it” (introjected regulation); “Because I want to understand the subject” (identified regulation); “Because it’s fun” (intrinsic motivation). The result in external, introjected, and identified regulation will be grouped and be seen as extrinsic motivation for the analysis in this study.

Meanwhile, the above questionnaires need to be translated into Chinese from English, fitting into the situation of the Hong Kong context and making sure they are understandable to primary school students. To maintain the accuracy, the translation is done with the help of different dictionaries. Two undergraduate peers studying educational programmes were invited to review the translation.

Reliability

This study adopted quantitative research, and the reliability of the questionnaires used needs to be verified. Cronbach’s Alpha and factor analysis will be used to measure the reliability of questionnaires in this study. Although both S-TSRI and SRQ-A show high reliability in the past studies, as the investigation target in this study is only focused on Hong Kong primary school students, their cultural background might be different from the previous study. Also, as the questions are translated to Chinese and the questions about academic motivation are

extracted from the complete set of SRQ-A, the reliability hence needs to be reviewed. Cronbach's Alpha will be calculated to ensure the questionnaire has enough internal consistency. Alpha value indicates the levels of reliability of the scale. Value >= 0.9 indicates excellent reliability, between 0.8 and 0.89 indicates good reliability, and 0.7 to 0.79 indicates acceptable reliability; 0.6 to 0.69 and < 0.6 indicate questionable and poor reliability respectively. If the Cronbach's scale is found to be lower than 0.7, the questions need to be reviewed and adjusted. Items that may not align with the setup will be removed in order to improve reliability.

Table 1. *Reliability Analysis of Scale*

Construct	No. of items	Cronbach's Alpha
S-TSRI		
Satisfaction	5	0.889
Instrumental Help	5	0.840
Conflict	4	0.884
SRQ-A		
Extrinsic motivation	19	0.875
Intrinsic motivation	4 (5*)	0.756 (0.445*)

*Original value before remove item 7.

For reliability in S-TSRI, Cronbach's Alpha was found to be 0.90, 0.86, and 0.85 for satisfaction, instrumental help, and conflict respectively in previous research by Ang et al. (2020), showing high reliability. Cronbach's Alpha has also been recalculated in this research. Aligning with expectations, all subscales in assessing TSR demonstrated good reliability levels, where satisfaction, instrumental help, and conflict have Alpha values of 0.889, 0.840, and 0.884 respectively (Table 1). Factor analysis is also conducted to prove the validity of the scale. In S-TSRI, all items can be successfully loaded to their respective factors, from loadings ranging from 0.618 to 0.870 (Table 2). It shows the validity of the scale and proves it can be used in the upcoming analyses.

Table 2. *Factor Analysis of S-TSRI*[a]

Items		Satisfaction	Instrumental Help	Conflict
Satisfaction	STSRI_1	.728		
	STSRI_3	.818		
	STSRI_5	.700		

	STSRI_13	.618		
	STSRI_14	.709		
Instrumental Help	STSRI_2		.870	
	STSRI_6		.661	
	STSRI_9		.804	
	STSRI_10		.801	
	STSRI_12		.764	
Conflict	STSRI_4			.726
	STSRI_7			.839
	STSRI_8			.841
	STSRI_11			.851

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 5 iterations.

Regarding the scale of SRQ-A, it is used to analyse students' academic motivation. The

validation is supported by Ryan and Connell (1989). In this research, items about extrinsic motivation scored 0.875 in Cronbach's Alpha, which also shows good reliability. Yet, the initial reliability of intrinsic motivation measurement is only 0.445 (Table 1). After removing item 7, the Cronbach alpha increased to 0.756 and reached the acceptable level of reliability. Meanwhile, factor analysis is also accompanied (results shown in Table 3). Most items are able to load in their category at an acceptable loading value from 0.448 to 0.699, except item 7. Item 7 failed to load on the factor of intrinsic motivation. This indicates that this item may not align with the scale. The statement of the deleted item is"I enjoy doing my homework." The misalignment issue may be caused by translation. The Chinese word " hei2 fun1"(喜歡) is used to translate "enjoy" , and word ambiguity may appear in this process and contribute to the inconsistency of the scale. Therefore, the responses to question 7 in assessing academic motivation are excluded in the data analysis due to the suspiciousness of its accuracy.

Table 3. *Factor Analysis for SRQ-A*[a]

		External Regulation	Introjected Regulation	Identified Regulation	Intrinsic Motivation
External Regulation	SRQA_2	.448			
	SRQA_6	.699			
	SRQA_9	.698			

	SRQA_14	.489		
	SRQA_17	.571		
	SRQA_20	.548		
	SRQA_24	.466		
Introjected Regulation	SRQA_1	.610		
	SRQA_4	.663		
	SRQA_10	.542		
	SRQA_12	.686		
	SRQA_18	.555		
	SRQA_21	.680		
	SRQA_23	.464		
Identified Regulation	SRQA_5		.577	
	SRQA_8		.625	
	SRQA_11		.657	
	SRQA_16		.615	

	SRQA_22	.698
Intrinsic Motivation	SRQA_3	.501
	SRQA_7	**-.072**
	SRQA_13	.630
	SRQA_15	.579
	SRQA_19	.676

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Procedure

Due to the young age of the targeted participants, participants' and their parents' consent is needed to join this research. Consent forms are distributed to students and parents before the data collection. After collecting the consent form from the school and parents, their willingness is gathered to form a participant list. The questionnaires that composed of 38 items from S-TSRI and SRQ-A will be distributed to students who have consented to join the study. 20 minutes are given to participants to finish the set. During this process, the teacher who is being evaluated on the relationship with students is not present in the classroom, as some of the questions are related to them. Their presence is avoided to maintain the accuracy

of students' responses. What is more, students are not allowed to talk or communicate with each other during the filling out of the questionnaire. After the data are collected, they are inputted to SPSS for further analysis.

Data analysis

First, the correlation coefficient will be calculated. This study aims to study the relationship between the perceived TSR and academic motivation. The correlation coefficient will be used for data analysis. It can show the association between two variables, indicating the influence of the relationship. Analysis of the perceived TSR will be broken down into three dimensions: satisfaction, instrumental help, and conflict. The relationship between the perceived TSR in different dimensions and intrinsic motivation and extrinsic motivation will be analysed respectively. After the input of data in SPSS, the sum score in the subscale of TSR will be calculated. The score of academic motivation will be calculated as the sum score in extrinsic and intrinsic motivation respectively. Then, those data help generate the correlation coefficient (r). The r value is between -0.1 and 1.0. A positive value stands for a positive relationship, while a negative value means an opposite relationship.

Second, the greater the r value, the stronger the relationship is indicated. With the comparison between r value, the correlation strength between the perceived TSR in different dimensions and motivation can be identified. P-value will also be provided, showing the significance of the relationship between variables. When $p < 0.05$, it means the data is statistically significant

and the situation does not happen randomly.

Third, the correlation can also be analysed by gender. The correlation coefficient between different dimensions in TSR and academic motivation can be separated into boys and girls. By comparing the difference in the r value between genders, an investigation can also be conducted to see which gender shows greater correlation in each dimension of TSR.

Result

Descriptive analysis

A total of 160 questionnaires are received, including 87 boys and 73 girls, the proportion is shown in Table 4. Then, some item's scores are grouped and added together according to the subscale in TSR and academic motivation. The participant's scored mean, minimum and maximum scores in each subscale are shown in Table 5. The TSR included three subscales: satisfaction (M = 3.71, SD = .88), instrumental help (M = 3.17, SD = .86), and conflict (M = 2.40, SD = 1.07). Academic motivation is measured in two subscales: extrinsic motivation (M = 2.86, SD = .53) and intrinsic motivation (M = 2.41, SD = .76). Using the score in different subscales, Pearson's r can be calculated to show the strength of the correlation between different dimensions in the TSR and academic motivation.

Table 4. *Frequency and Percentage of Gender of Participants*

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	87	54.4	54.4	54.4
Female	73	45.6	45.6	100.0
Total	160	100.0	100.0	

Table 5. *Mean and Standard Deviations of dimension in TSR and academic motivation*

	Minimum	Maximum	Mean	Standard Deviation
S-TSRI				
Satisfaction	1.00	5.00	3.71	.89
Instrumental Help	1.00	5.00	3.17	.86
Conflict	1.00	5.00	2.40	1.07
SRQ-A				
Extrinsic motivation	1.00	4.00	2.86	.53

Intrinsic motivation	1.00	4.00	2.41	.76

N = 160

Correlation between student perceived TSR and academic motivation

Pearson's Correlation

Significant results were found regarding the relationship between students' perceived TSR and their academic motivation. Table 6 and figure 1 shows the correlation result among all participants.

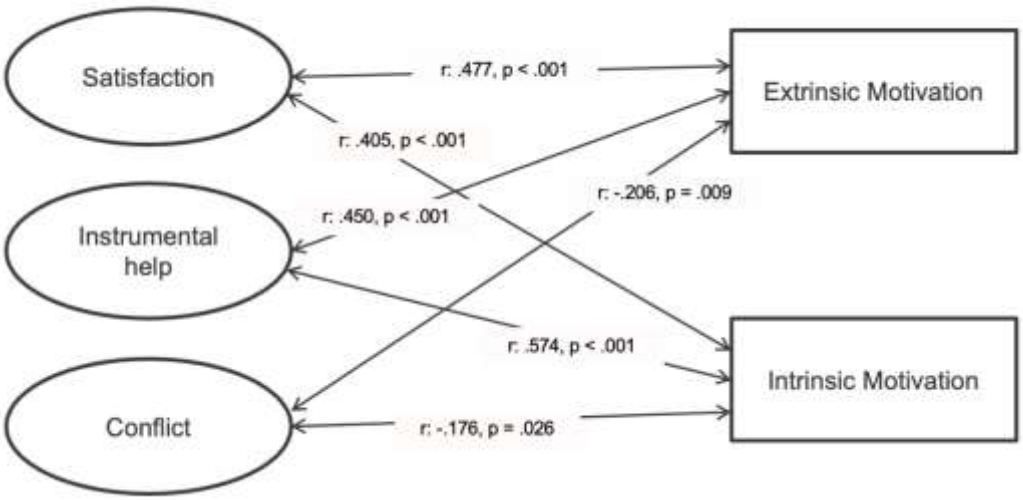
Table 6 *Correlations in overall participants*

		Satisfaction	Instrumental Help	Conflict
Extrinsic Motivation	Pearson Correlation	.477	.450	-.206
	Sig. (2-tailed)	<.001	<.001	.009
	N	160	160	160
Inrinsic Motivation	Pearson Correlation	.405	.574	-.176
	Sig. (2-tailed)	<.001	<.001	.026

N	160	160	160

Figure 1

Correlations in overall participants



Correlation between student perceived TSR and EM

Extrinsic motivation is positively correlated with the positive dimension of TSR, showing correlation to satisfaction ($r = .477$, $p < .001$) and instrumental help ($r = .450$, $p < .001$). This indicates that students who feel more satisfied and supported by their teachers tend to show higher extrinsic motivation in learning.

Meanwhile, extrinsic motivation is shown to be negatively correlated with conflict ($r = -.206$,

p = .009). It means that students who feel they have more conflict with their teachers are more likely to have lower extrinsic motivation.

The above correlations about TSR to extrinsic academic motivation all have p-value < .05, indicating that they contain significant results and show meaningful relationships.

Correlation between student perceived TSR and IM

Regarding the relationship between TSR and intrinsic academic motivation, the results show a similar way as extrinsic motivation. The result of the questionnaires shows that intrinsic motivation is positively correlated with satisfaction ($r = .405$, $p < .001$) and instrumental help ($r = .574$, $p < .001$). Compared to the relationship towards extrinsic motivation, the correlation level in satisfaction is slightly lower, while instrumental help is higher.

Also, there is a negative correlation between conflict and intrinsic motivation ($r = -.176$, $p = .026$). It shows that students who have higher scores in negative dimensions in TSR tend to show lower extrinsic motivation.

P-value of the above correlation are < .05, showing that they are significant in statistics, which contributes to the further investigation.

Comparison of Correlation Strengths Among Different Dimensions

To discuss which dimension in the TSR shows stronger correlation toward academic motivation, the Pearson's r values need to be compared. It is found that satisfaction has the

strongest correlation with extrinsic motivation (r = .477), while instrumental help has the strongest correlation with intrinsic motivation (r = .574).

Correlation in boys and girls respectively

Table 7. Correlation in boys and girls

		Correlations in boys			Correlations in girls		
		Satisfaction	Instrumental Help	Conflict	Satisfaction	Instrumental Help	Conflict
Extrinsic Motivation	Pearson Correlation	.453	.449	-.110	.529	.448	-.359
	Sig. (2-tailed)	<.001	<.001	.310	<.001	<.001	.002
	N	87	87	87	73	73	73
Intrinsic Motivation	Pearson Correlation	.396	.614	-.179	.442	.506	-.180

Sig. (2-tailed)	<.001	<.001	.097	<.001	<.001	.129
N	87	87	87	73	73	73

By grouping the participant by gender, which gender shows greater correlation in each dimension of TSR can be observed. Satisfaction shows a stronger association to motivation in girls in both extrinsic (girls = .529; boys = .453) and intrinsic (girls = .442; boys = .396). Instrumental help shows a similar correlation to EM (girls = .448; boys = .449) but different to IM (girls = .506; boys = .614) among genders. Regarding conflict, only the correlation between EM in girls is statistically significant (p = .002), it shows a negative correlation in r = -.359.

Discussion

Overall, this study aims to investigate the correlation between student perceived TSR and academic motivation, and compare the strength between dimensions of TSR. Based on previous research, there are mainly two hypotheses suggested in this study. First, it was expected that there is an association between student perceived TSR and academic motivation. Second, it was hypothesized that different dimensions of student perceived TSR show a diverse degree of correlation toward academic motivation. Moreover, the gender tendency in how students react to different dimensions of TSR is also observed and will be

discussed in the following part.

First, the result shows that satisfaction and instrumental help are positively correlated with academic motivation, while conflict is negatively correlated. This support hypothesis H1. Positive correlation is observed between positive dimension in TSR (satisfaction and instrumental help) and both intrinsic and extrinsic academic motivation.

Satisfaction with academic motivation

To break them down specifically, satisfaction is positively correlated with EM and IM. This situation matches the hypothesis supported by SDT. When an individual has a higher sense in a supportive relationship, they are more willing to achieve external goals such as higher grades and other recognition (Ryan & Deci, 2020). They show higher desire in external motivations. On the other side, students who initially have higher external motivation want to seek recognition from teachers (Wentzel, 2012). If teachers can fulfill these needs of students, students will feel satisfaction toward the teacher and hence enhance their TSR. In regard to the association with IM, a satisfaction relationship can foster students' sense of security (Roorda et al., 2017). Students can feel safe to explore things around them. This process can enhance students' autonomy, and it enhances their IM. Also, students with higher IM seek enjoyment during learning or are motivated in knowledge. As teachers are the medium for students to gain knowledge, students with higher IM tend to show higher satisfaction with teachers (Jang et al., 2016).

Instrumental help with academic motivation

Another positive dimension in TSR—instrumental help—is also found positively correlated to academic motivation. With higher instrumental help, students receive academic support from teachers. It may contribute to introjected regulation for students (Klem & Connell, 2004). Students think they have an obligation to learn as a return to the help that the teacher provided. It is hence linked to their EM. Meanwhile, instrumental help also shows a positive relation in IM. When students get academic help from teachers, it is believed that their knowledge or ability will increase. It may contribute to their motivation in accomplishment as they are equipped and become more possible to strive for academic achievement (Ryan & Deci, 2020; Stroet et al., 2015). Therefore presented a tendency to higher IM. For students who have higher EM and IM per se, they may have higher awareness when teachers teach. Also, it is predicted that they may actively seek advice from teachers. This contributes to making them feel stronger in receiving instrumental help. Leading to the correlation found in studies.

Conflict with academic motivation

As a negative dimension in TSR, conflict shows a negative tie-up with academic motivation. Conflict in TSR may appear in the form of punishment (Milatz et al., 2014). It is linked with external regulation as it is controlled by the teachers. It is hence associated with the lower EM. At the same time, conflict in TSR makes it hard for students to feel pleasure and

satisfaction in the learning process, causing the lower IM (Roorda et al., 2017). With lower academic motivation, students are more likely to behave with misbehavior in the classes or show weaker academic achievement (Gottfried, 1985). This forms a vicious cycle that teachers may show even more punishment to them and strengthen the conflict. Finally, form the negative correlation between conflict and academic motivation.

Second, different dimensions of student perceived TSR show a diverse degree of correlation toward academic motivation, supporting hypothesis H2. It is observed that satisfaction shows a stronger correlation with EM, while instrumental help is more closely linked to IM among three dimensions.

Satisfaction wins in EM

In EM, satisfaction shows a stronger tie among three dimensions. Satisfaction can be shown in the form of rewards, recognition, closeness, emotional connection, etc. To enhance students' EM, it is believed that emotional support in satisfaction might be more influential than instrumental help. With greater emotional attachment in TSR, students may show a greater desire to seek approval and recognition from teachers (Baker, 2006). Hence, it increases their demand on external regulation, which is an essential element in extrinsic motivation. Meanwhile, with a closer relationship between teacher and students, students may feel a sense of responsibility in learning as they do not want to disappoint the teacher (Furrer & Skinner, 2003). It contributes to the pursuit of introjected regulation. Although other

elements in TSR, such as instrumental help, are also believed to enhance EM, the degree is shown stronger in satisfaction.

Instrumental help wins in IM

In the aspect of IM, a diverse degree of correlation between TSR and academic motivation is also shown. Instrumental help shows the strongest correlation. The benefits of instrumental help provided by teachers are believed to be beyond TSR, which also helps to enhance the intrinsic learning ability of students. When discussing the development of IM, it focuses on the drive that makes individuals engage in learning for enjoyment (Ryan & Deci, 2020). Higher confidence and self-efficacy may help students to have higher motivation in accomplishment as they believe they have the ability to do so (Bandura, 1977). It develops their positive attitudes towards school and more intrinsically motivated students to learn (Wentzel, 1997). Compared to other dimensions in TSR, instrumental help provides the most practical and precise support to students' needs. Therefore, it contributes to being the most correlated element to IM, showing the strength of a relation that is greater than satisfaction.

It is also found that the negative dimension in TSR (conflict) shows the weakest correlation among two types of academic motivation. It aligns with previous research ideas that positive TSR will have a stronger and more consistent impact on students when compared to negative TSR (Roorda et al., 2011).

Third, this study found a surprise result in the gender tendency in how students react to

different dimensions of TSR. Comparing genders, it is found that boys show greater correlation in satisfaction while girls show greater correlation in instrumental help, especially in IM. This suggests that boys may be more affected by practical support and guidance from teachers. Girls may be more sensitive to emotional support from teachers. This tendency shown in gender difference is similar to previous research, which found boys and girls may respond differently to various dimensions of TSR (Wu et al.,2010). The evolutionary theory in explaining gender development supports the found situation. It suggested that gender roles are different due to various evolutionary pressures (Buss, 1995). Females emphasize social bonding as they are responsible for childbearing and nurturing offspring. Males focus more on their strength and competency as their need to provide food and protection to family. These traits in the natural environment had been passed down through generations. The gender characters are found to be aligned with the result in this research. Girls are more affected by satisfaction and closeness, while boys react stronger to instrumental help that links to equipping their ability.

Implications

From the above findings, this research brings some ideas of implications toward how teachers can support students' learning and enhance their learning motivation.

First, there are some ways a teacher can help students to enhance their academic motivation. When looking into academic motivation, instrumental help and intrinsic motivation are found

to have the strongest correlation among overall students. From this situation, it brings the insight that it would be an efficient solution to enhance students' motivation if teachers can provide more practical help to all students. Through providing instrumental help such as guidance and encouragement, it does not only improve TSR but also increases students' confidence in achieving goals. Especially for boys, they show greater correlation in feeling instrumental help and academic motivation. Hence, teachers can prioritize providing practical guidance rather than emotional support. Meanwhile, girls are relatively shown to be more sensitive to satisfaction in TSR, highlighting the importance of emotional support and closeness among them. As a result, this research put insight that effectiveness in enhancing academic motivation from TSR may differ by gender. Teachers can adapt different approaches according to the gender of students in order to effectively increase their motivation by TSR.

Second, teachers are suggested to take different actions to enhance TSR. As TSR and motivation are correlated, TSR may enhance motivation and the increase of motivation may also show positive influence on TSR. As external motivation is positively associated to satisfaction, teachers may provide rewards or recognition to students. To be concrete, teachers can prepare some small gifts for students when they behave well in schools, or verbally appreciate them when they get satisfactory academic result. These provide external regulation to students and foster students' beliefs their activities can lead to positive outcomes, contributing to identified regulation. These improvement can finally enhance students' external academic motivation and increase the satisfaction in TSR.

Limitation & Future Research

First, the data collection in this research relies on students' self-reported data, which may not be comprehensive enough. As the target of the study is primary school students, their responses in the questionnaire may not be reliable enough, especially for students of younger ages (Borgers et al., 2000). For future research, it is suggested to collect responses from teachers also. To measure TSR, it can be measured from the view of both students and teachers. Yet, this research only emphasizes the view from students but neglects the side of teachers. TSR from teachers' perspective may show how they interact differently with different students in schools (Prewett et al., 2018). It helps evaluate what specific actions or elements are critical to TSR and hence provide more concrete insight for teachers to take action in enhancing TSR.

Secondly, the limited sample size may affect the generalizability of the findings. This sample in this research is limited to one school. Academic motivation might be influenced by specific school atmosphere. Also, the teachers who were evaluated by students are limited to a single subject. Therefore, the result of research may not accurately reflect the overall correlation situation. The students' interest toward the subjects that were taught by the specific teachers may bring influences to the result. Therefore, it is suggested to expand the sample size in future studies. Include data collection from multiple schools and take the response from different subjects. These may enhance the external validity of the results, making the result

more representative.

Third, this research only explores the association between TSR and academic motivation, but the causal relationship is not verified. This research originally aims to help educators to reflect on their interaction with students and development of TSR, leading to an increase in students' learning motivation. However, the causal relation between TSR and academic motivation is not proved precisely in this study. This is suggested to be explored in the future study in order to clarify directional effects about the influences of TSR on academic motivation.

Conclusion

To sum up, this quantitively research provide the correlation between aspects in TSR and academic motivations. Their association is found to be existing. However, the degree of association are varies. All satisfaction, instrumental help, and conflict show statistically significant toward EM and IM. Meanwhile, satisfaction and instrumental help are more superior in the correlation to EM and IM respectively. This research also found significant gender tendency in students' sensitivity in responding the dimension of TSR to academic motivation. It is hoped that this study provide idea of Hong Kong primary schools teacher to enhance students' motivation from the cut in of TSR. Future study to figure out detailed causal relationship between these variables are also suggested.

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Appendices

1. Instrument used in the study

學生問卷

班別：　　（　　）　　性別：　男　/　女

年齡：_____　　教師：_____

作答指引

- 請仔細閱讀每項陳述，並圈出你有多大程度同意以下陳述。
- 以下題目沒有對錯之分，請如實作答。
- 回答以下陳述時，請以你的數學老師為參考。

第一部份

1. 我喜歡上這位老師的課。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

2. 如果我家中出現問題，我會請這位老師幫忙。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

3. 我與這位老師的關係是正面的。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

4. 相比其他老師，這位老師更常令我我感到失望。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

5. 如果這位老師退休或離開學校，我會很想念他/她。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

6. 我會和這位老師分享我的生活。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

7. 我想快點結束這一學年，因為我不想再被這位老師教。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

8. 如果這位老師缺席，我會感到鬆了一口氣。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

9. 如果我需要幫助，我會去找這位老師。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

10. 如果我需要有人聆聽我，我會去找這位老師。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

11. 如果我不被這位老師教，我會更享受我的課堂。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

12. 我相信這位老師的建議。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

13. 我對與這位老師的關係感到滿意。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

14. 我喜歡這位老師。

5 非常同意　4 同意　3 既不同意也不反對　2 不同意　1 非常不同意

第二部份

甲）　為什麼我要做功課？

1. 因為我希望老師認為我是好學生。

4 非常同意　3 同意　2 不同意　1 非常不同意

2. 因為如果我不做功課，我會有麻煩。

4 非常同意　3 同意　2 不同意　1 非常不同意

3. 因為這很有趣。

4 非常同意　3 同意　2 不同意　1 非常不同意

4. 因為如果我不做，我會對自己感到內疚。

4 非常同意　3 同意　2 不同意　1 非常不同意

5. 因為我想了解這個科目。

4 非常同意　3 同意　2 不同意　1 非常不同意

6. 因為這是我應該做的事。

4 非常同意　3 同意　2 不同意　1 非常不同意

7. 因為我喜歡做功課。

4 非常同意　3 同意　2 不同意　1 非常不同意

8. 因為做功課對我來說很重要。

4 非常同意　3 同意　2 不同意　1 非常不同意

乙）為什麼我要完成課堂作業？

9. 為了讓老師不會罵我。

4 非常同意　3 同意　2 不同意　1 非常不同意

10. 因為我想讓老師覺得我是個好學生。

4 非常同意　3 同意　2 不同意　1 非常不同意

11. 因為我想學習新知識。

4 非常同意　3 同意　2 不同意　1 非常不同意

12. 因為如果沒完成，我會感到羞愧。

4 非常同意　3 同意　2 不同意　1 非常不同意

13. 因為這很有趣。

4 非常同意　3 同意　2 不同意　1 非常不同意

14. 因為這是規則。

4 非常同意　3 同意　2 不同意　1 非常不同意

15. 因為我喜歡做課堂作業。

4 非常同意　3 同意　2 不同意　1 非常不同意

16. 因為做課堂作業對我來說很重要。

4 非常同意　3 同意　2 不同意　1 非常不同意

丙） 為什麼我要在學校做出良好表現？

17. 因為這是我應該做的。

4 非常同意　3 同意　2 不同意　1 非常不同意

18. 因為我想讓老師認為我是個好學生。

4 非常同意　3 同意　2 不同意　1 非常不同意

19. 因為我喜歡把學校的工作做好。

4 非常同意　3 同意　2 不同意　1 非常不同意

20. 因為如果我表現不好，我會有麻煩。

4 非常同意　3 同意　2 不同意　1 非常不同意

21. 因為如果我表現不好，我會對自己感到非常內疚。

4 非常同意　3 同意　2 不同意　1 非常不同意

22. 因為在學校做出良好表現對我來說很重要。

4 非常同意　3 同意　2 不同意　1 非常不同意

23. 因為如果我表現好，我會感到非常自豪。

4 非常同意　3 同意　2 不同意　1 非常不同意

24. 因為如果表現好，我可能會得到獎勵。

4 非常同意　3 同意　2 不同意　1 非常不同意

Consent form

香港教育大學
心理學系
參與研究同意書

探討學生對師生關係的感知與學習動機之間的關係

茲同意敝子弟_____參加由陳詠欣博士負責監督，歐芍君負責執行的研究項目。她／他們是香港教育大學心理學系的教員和學生。

本人理解此研究所獲得的資料可用於未來的研究和學術發表。然而本人有權保護敝子弟的隱私，其個人資料將不能洩漏。

研究員已將所附資料的有關步驟向本人作了充分的解釋。本人理解可能會出現的風險。本人是自願讓敝子弟參與這項研究。

本人理解本人及敝子弟皆有權在研究過程中提出問題,並在任何時候決定退出研究，更不會因此而對研究工作產生的影響負有任何責任。

參加者姓名：_____

參加者簽署：_____

父母姓名或監護人姓名：_____

父母或監護人簽署：_____

日期：_____

Information sheet

有關資料

探討學生對師生關係的感知與學習動機之間的關係

誠邀閣下及 貴子女參加陳詠欣博士負責監督，歐芍君負責執行的研究項目。她／他們是香港教育大學心理學系的教員和學生。

研究項目簡介

本研究旨在探討香港小學生對師生關係的感知與其學習動機之間的關聯性。通過約150名四至六年級的小學生的自填式問卷進行量化分析，問卷內容基於學生版本的《師生關係量表》(S-TSRI) 和《學習自我調節問卷》(SRQ-A)，以依附理論和自我決定理論為基礎。本研究將分析師生關係的不同維度，包括滿意度、工具性幫助和衝突，並研究這些維度如何分別影響內在和外在學習動機，從而為未來的教育政策提供更具針對性的建議。

研究方法

參與者將完成一份關於師生關係和學習動機的自填問卷。問卷需時約20分鐘，過程並不會影響日常教學工作。是次研究並不為閣下提供個人利益，但所搜集的數據將對研究學習動機的問題提供寶貴的資料。

風險

研究內容將涉及少量個人資料，參與者所提供的一切資料絕對保密及只供學術研究用途，而數據亦只會保存最多一年，其後會被銷毀刪除。

閣下及 貴子女的參與純屬自願性質。閣下及 貴子女皆享有充分的權利在任何時候決定退出這項研究， 更不會因此引致任何不良後果。凡有關 貴子女的資料將會保密，一切資料的編碼只有研究人員得悉。

研究結果

研究結果將會用於畢業論文中，並會提交給相關導師及人員。

如閣下想獲得更多有關這項研究的資料,請以電郵(@s.eduhk.hk) 或電話( )與本人或本人的導師陳詠欣博士 (awychan@eduhk.hk)聯絡。

如閣下或 貴子女對這項研究的操守有任何意見,可隨時與香港教育大

學人類實驗對象操守委員會聯絡(電郵:hrec@eduhk.hk; 地址：香港教育大學研究與發展事務處)。

謝謝閣下有興趣參與這項研究。

歐芍君