

Autonomous Motivation in the Indonesian Classroom: Relationship with Teacher Support Through the Lens of Self-Determination Theory

Ridwan Maulana¹ · Michelle Helms-Lorenz¹ · Yulia Irnidayanti² · Wim van de Grift¹

Published online: 12 February 2016

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Abstract Self-determination theory (SDT) posits that teacher autonomy, competence, and relatedness support are crucial universal promoters for students' interest in learning, which is in line with the general aims of positive education. This study examines the relationship between the three dimensions of students' perception of Indonesian teachers' autonomy, competence, and relatedness support and students' perceived autonomous motivation in secondary education (Grades 10–12). Particularly the relative importance of the three dimensions of teacher support on two types of autonomous motivation (identified versus intrinsic) were explored. The three dimensions of teacher support (N teacher = 202) were measured with the Teacher as Social Context questionnaire, and the Questionnaire on Motivational Dimension was used to measure the students' autonomous motivation (N students = 4396). Results show that teacher autonomy, competence, and relatedness support are all related to the Indonesian students' autonomous motivation. Compared to findings from the Western context, the relative importance of autonomy support was shown to be less salient. This is in line with some other Asian studies. The relative importance of autonomy support seems to vary amongst different countries within Asia. We conclude that the three teaching support dimensions are relevant for autonomous motivation of Indonesian students, which confirms the applicability of SDT for the Indonesian context.

Keywords Teacher support · Autonomous motivation · Positive education · Secondary education · Multilevel modelling

Introduction

Positive education focuses on the positive aspects of human development and how these aspects can be promoted in school (Kristjansson 2012). Self-determination theory (SDT) is a framework of motivation and development that can be used to examine optimal human functioning and development (Niemi and Ryan 2009). This study aligns the principles of positive education and SDT in examining key determinants of *autonomous motivation*, a key element in an individual's path towards flourishing and thus, a key indicator of positive education. It entails the quality and intensity of one's energies driven by the self (Skinner et al. 1990). Identified (i.e. doing something because it is personally important and valuable) and intrinsic (i.e. because it is interesting and enjoyable) motivations are the basic types of autonomous motivation (Ryan and Deci 2000). The teacher can influence the students' motivation. The present study examines the relationship between teachers' behaviour and students' autonomous motivation.

SDT recognizes autonomy, competence, and relatedness as the three universal basic needs of human beings. The theory stresses that the teacher is the main actor in providing supportive social learning environments in the classroom. A considerable number of SDT research has indicated the importance of teacher autonomy, competence, and relatedness support for well-being and various student outcomes across Western and Eastern contexts (Chirkov 2011, Ryan and Deci 2011). Deci and Ryan (2000) revealed that need satisfaction leads to increased

✉ Ridwan Maulana
r.maulana@rug.nl

¹ Department of Teacher Education, University of Groningen, Grote Kruisstraat 2/1, 9712 TS Groningen, The Netherlands

² Department of Biology Education, Jakarta State University, Jakarta, Indonesia

engagement, reduction of anxiety, and is associated with higher levels of self-esteem measured in a cross-cultural study in work organizations. Jang et al. (2009) replicated these findings too, for South Korean students with collectivistically oriented values.

The crucial role of teachers for positive learning outcomes is strongly acknowledged in the teacher effectiveness research tradition as well (Darling-Hammond et al. 2002; Kyriakides et al. 2009). Besides maintaining and increasing the quality of teacher autonomy, competence, and relatedness support, maintaining and increasing teaching quality also contributes in promoting positive education.

The application of SDT to the Asian educational context remains underrepresented. Specifically, it remains inconclusive whether teacher autonomy, competence, and relatedness support are relevant to Indonesian students' academic motivation as well. Little is known regarding the relative importance of each of these dimensions of teacher support for autonomous motivation. More studies focusing on teacher support and academic motivation in Asian countries can justify further regarding the cross-cultural importance of autonomy, competence, and relatedness support (Jang et al. 2009). It also adds to the knowledge base regarding the relative importance of each of the teaching behaviours for autonomous motivation from the Indonesian perspective. High aspirations among teachers and students in many Asian societies (Biggs 1994; Schneider and Lee 1990) and emphasizing values such as conformity and social harmony (Chao and Tseng 2002) could warrant the view that competence and relatedness support could be more salient compared to autonomy support in promoting high academic functioning and well-being (Caleon et al. 2016).

Triandis (2002) emphasized looking for both emic (culture specific) and etic (universal) aspects when studying cross-cultural phenomena. King and McInerney (2014) argue that an imposed etic approach to motivation (such as SDT research in the non-western context) is inferior because it neglects the emic approach as starting point of understanding more universal aspects as proposed by Berry (1989). From a motivational science perspective, Zusho and Clayton (2011) argue that a universalist approach to studying cultural aspects is the most appropriate way. The universalist approach recognizes that certain basic psychological processes are universal (etic) but also highlights the importance of specific culture and context (emic) (King and McInerney 2014). Within this framework our study is focused on the universal aspect (etic) of a need-supportive environment, by examining the relationship between teachers' autonomy, competence, and relatedness support and autonomous motivation. Additionally, we also consider potential culture-specific results (emic) by investigating the relative importance of each of teacher support forms for autonomous motivation.

Review of Related Literature

SDT suggests that the satisfaction of needs for autonomy, competence, and relatedness is necessary to promote positive (educational) outcomes. Autonomy, competence, and relatedness are viewed as basic psychological needs that are cross-cultural and cross-developmental (Jang et al., 2009). Research from the Western context has shown the importance of teacher autonomy, competence, and relatedness support for various outcomes including student intrinsic motivation (Holembeak and Amorose 2005; Ntoumanis 2005; Wentzel 1999), academic engagement (Skinner and Belmont 1993), and well-being (Vansteenkiste et al. 2006). When students feel that their teachers are caring and supportive, they show more academic effort (Urda and Schoenfelder 2006). Teacher relatedness support promotes students' sense of belonging, and sense of belonging is a strong predictor of students' self-determined motivation (Baumeister and Leary 1995). Teacher competence support is related to student autonomous motivation and academic engagement (Fortier et al. 1995; Tucker et al. 2002). Students experiencing autonomy support are more intrinsically motivated to learn (Deci and Ryan 1985; Fortier et al. 1995). The positive effect of autonomy support is also evident for students' higher self-esteem, higher perceived competence (Ryan and Grolnick 1986), and reduced school drop-out rates (Hardre and Reeve 2003). Autonomy support is known to facilitate students' autonomous motivation and perceived competence (William and Deci 1998).

In general, research from the Western context shows consistent findings that the three teacher behaviours are highly valued. Each of the three teacher behaviours has been shown to predict intrinsic motivation, with autonomy appearing to be the strongest predictor followed by relatedness and competence support (Holembeak and Amorose 2005). Taylor and Ntoumanis (2007) found that autonomy, competence, and relatedness support appear to be equally important for students' self-determined motivation. There is also evidence that autonomy and competence support seems to be a stronger predictor of students' engagement—a construct that is conceptually close to motivation compared to relatedness support (Deci et al. 2001). However, the results of another study showed that relatedness support appears to be a strong predictor of students' engagement as well (Furrer and Skinner 2003). In sum, research from the Western context shows consistent results regarding the strong importance of autonomy, competence, and relatedness support, but the relative importance of each of the three supports seems to vary depending on the context of the study.

Limited research from the Asian context has indicated the importance of autonomy, relatedness, and competence support for autonomous motivation (Hui et al. 2011; Maulana et al. 2011, Maulana et al. 2014a, b, 2015). The

relative importance of autonomy support for academic motivation is also visible. Compared to competence and relatedness support, the predictive value of autonomy support is lower in Hong Kong and the Filipino context (Hui et al. 2011; Mesurado et al. 2015), but larger in the Korean context (Jang et al. 2009). Additionally Caleon et al. (2016) revealed the salience of autonomy support to exert the strongest influence on student engagement, which forms a strong conceptual link with motivation, in the Singaporean context. Hence, there is some evidence that autonomy, competence, and relatedness support are relevant for student motivational outcomes in several Asian contexts as well, but the relative importance of each teacher behaviour seems to differ depending on the context of the study.

Many cultural determinists have argued that autonomy support will not be valued in Eastern cultural contexts due to highly appreciated values concerning obedience to authority, strict discipline, and a hierarchical, authoritarian style of the young and the old (Chirkov 2011). This may be due to the lack of conceptual clarity on the meaning of autonomy versus independency or separatedness. Autonomy is defined as “the inner endorsement of one’s behaviour. This is distinct from issues of independence or separateness from others (Jang et al., 2009, p. 658). Nevertheless, SDT researchers have shown that in general, support for autonomy is not only important in many Western (i.e. Belgium, Britain, Canada, France, Germany, Italy, Norway, and the United States), but also in several non-Western (i.e. South Korea, Singapore, Pakistan, Taiwan) cultural contexts (Chirkov, 2011). We therefore expect similarities in the Indonesian SDT findings when compared to Western findings, but at the same time we also expect cultural-specific results.

The Current Research

It is important to extend the etic and emic research on teacher support and motivation using the specific framework of SDT to the Indonesian context for two reasons. First, applying the SDT framework to the non-Western context will justify generalizability of SDT regarding the importance of teacher support and motivation from the Indonesian context. Second, examining the relative importance of the three forms of teacher support might shed more light regarding the relative importance of the three teacher support dimensions in the non-Western context.

Hypotheses

The culture of the educational system in Indonesia is collectivist, which can be contrasted from the Western individualist system (Hofstede 1991). This means that the

Indonesian classroom context reflects a social unit within the larger unit of a hierarchical society. This hierarchical structure suggests that obedience to higher authority figures is highly valued. The collectivist nature of culture also puts a strong emphasis to social harmony, conformity, and family interdependence (Chao and Tseng 2002; Uchida and Ogihara 2012). Students who are educated within a collectivist culture are expected to learn “how to do” and tend to perceive that there is only one right perspective to a given problem. Students uphold the idea that they must agree and support teachers at all times. They tend to avoid debates and confrontation in class and follow the teacher’s instructions. Within a culture which is oriented towards individualism, on the other hand, students are expected to learn “how to learn”. It is about how students experience and organize the subject matter of a learning task. Giving correct information is recognized as highly important (Ho et al. 2004).

Additionally, the Indonesian educational system is characterized by a dialectic nature, which can be contrasted from a dialogic nature in the Western context (Ho et al. 2004). Dialectic education involves a teacher-centred approach, where teachers transfer the knowledge to students that students must memorize and recount in assessments. Dialogic education is student-centred, discussion-based, and interactive. Dialectic teaching methods focus on examinations, whereas dialogic methods emphasize active student participation in the learning process (Ho et al. 2004). Dialectic versus dialogic characteristics of learning imply that autonomy support for learning seems to be more in line with dialogic approach compared to dialectic approach.

Based on SDT claims regarding the universal importance of the three dimensions of teacher support and some supporting studies across cultural contexts (e.g., Chirkov 2011, Deci and Ryan 2000), we hypothesize that (1) teacher autonomy, competence, and relatedness support will be positively associated with students’ autonomous motivation of Indonesian students. Based on previous research in Asian contexts (e.g. Caleon et al. 2016; Hui et al. 2011; Maulana et al. 2013, 2014; Mesurado et al. 2015), we expect that (2) teacher competence and relatedness support will explain a substantial amount of variance in students’ identified and intrinsic motivation. Following cultural determinists claiming that autonomy support will be less appreciated in non-Western compared to Western contexts (Chirkov 2011), together with some evidence from past Asian-based studies (Hui et al. 2011; Mesurado et al. 2015) and specific Indonesian cultural factors mentioned earlier, we hypothesize that the relationship between teacher autonomy support and students’ autonomous motivation in the Indonesian context will be less salient compared to competence and relatedness support.

Methods

Sample and Procedure

The current study included a sample of 4396 students from 202 teachers teaching in senior secondary schools across nine provinces in Indonesia. The student sample comprised 1844 boys (41.9 %) and 2549 girls (58 %). Three students (0.1 %) did not indicate their gender. Students varied in terms of ethnicity background, which include Sundanese, Javanese, Betawi, Bantens, Malay, Dayak, and Acehese, among others. The majority of the students (72.4 %) were taught by their teachers for about one school year, while the remaining for more than one school year. Nearly half of the sample (43.4 %) consisted of students from the first grade of senior high school, and the remaining were in the second and third grades. Regarding the school type, 89.7 % of the students were from general school, while the remaining were from vocational school. The majority of the students (82.8 %) were from public school, and the remaining 17.2 % were from private school. Of the teachers, 37 % were male and 63 % were female. The data involved 34.8 % of math and natural science (e.g. biology, physics, chemistry) teachers, and 65.2 % language and social science (e.g. sociology, English, economy accountancy) teachers.

Students participated on a voluntary basis. Researcher-school agreement was made prior to conducting the survey in schools. Surveying involved 20 research assistants travelling to schools across the nine provinces. Surveys were conducted during the school year of 2014/2015. Students filled in the questionnaire in schools in the absence of their teachers.

Measure

Teacher Support

To tap student perceptions of teacher support, we used Teacher as Social Context (TASC) questionnaire (Belmont et al. 1992). TASC is based on the three basic psychological needs framework recognized by self-determination theory (Deci and Ryan 2000). TASC is a reliable and valid measure for examining student perceptions of teacher support in terms of the three dimensions of basic psychological needs adapted for the educational context, namely teacher relatedness support, competence support, and autonomy support. The reliability ranged between 0.83 and 0.89 (Belmont et al. 1992). We constructed the Indonesian version of TASC following the guidelines of the International Test Commission (Hambleton 1994). The process included translation and back-translation involving two educational researchers, one developmental psychologist,

and one English lecturer who were proficient in the Indonesian language. The instrument consisted of 24 items (relatedness support: 8 items, competence support: 8 items, autonomy support: 8 items) provided using a 4-Likert type response format ranging from 1 (completely not true) to 4 (completely true). Examples of the items are provided in Appendix 1. Pudjiadi (2011) showed that the psychometric quality of the Indonesian version is sufficient. Reliabilities of the three dimensions were 0.84 (relatedness support), 0.90 (competence support), and 0.69 (autonomy support). Results of exploratory factor analysis showed that 3 dimensions with eigenvalues larger than 1 could be extracted. The three dimensions represent the three dimensions of teaching support and explain about 65 % of the total variance component.

Autonomous Motivation

To measure autonomous motivation, we used the academic regulation scale of Ryan and Connell (1989). For the Indonesian context, we specifically used the Indonesian version that was developed earlier (Maulana et al. 2011, Maulana and Opdenakker 2014). The measure is theoretically consistent with the self-determination theory of motivation (Ryan and Deci 2000). The measure consists of eight items (identified motivation: 4 items, intrinsic motivation: 4 items). Examples of items are provided in Appendix 1. All items were provided on a four-point Likert scale ranging from 1 (Completely not true) to 5 (Completely true). Maulana and Opdenakker (2014) showed that the reliability and validity of the measure are satisfactory. Reliability ranged from 0.87 (identified motivation) to 0.88 (intrinsic motivation). Exploratory factor analysis showed that that two factors with eigenvalues larger than 1 could be extracted, representing identified motivation and intrinsic motivation constructs. The two factors accounted for 74 % of the variance.

Analytic Approach

To investigate the relationship between the three dimensions of teacher support and student autonomous motivation, we applied two-level multilevel modelling, with teacher at level 2 and student at level 1.¹ Missing data value was very minimal (0.6 %). First, we estimated empty models for each type of autonomous motivation (null model). Second, we built a second model by adding teachers' involvement as a predictor, and included some personal and contextual variables as control variables (subject teaching, student and teacher gender, grade level,

¹ One teacher taught one class, so teacher or class level is the same. We did not have enough sample at the school level to be included in the model.

school type, school denomination, duration with teacher) into the model. This was done separately for each of the three dimensions of teacher support (relatedness model, competence model, autonomy support model). Based on previous research, personal and contextual variables such as subject teaching, student and teacher gender, grade level, and school type can affect teachers' behaviour and students' motivation (Maulana et al. 2013, 2014a, b, c). Hence, those variables were entered as control variables. Additionally, because our data consisted of groups of different school denominations and duration students of contact with the teacher, and we believe that these variables may explain differences in the relationship between teaching behaviour and student outcomes as well, therefore we included these variables arbitrarily. Finally, we added relatedness, competence, and autonomy support together into the model, adjusted for the control variables (full model).² The modelling was done using a stepwise procedure using a statistical programme MLwiN (Rasbash et al. 2005).

Results

We found a highly significant, and positive, relationship between the three dimensions of students' perceptions of teacher support and students' autonomous motivation, even after controlling for effects of contextual and personal variables (see Tables 1, 2, Model 1–4). Regarding identified motivation, the estimated coefficients for teacher support variables are as follows: autonomy $\beta = 0.14$, $p < 0.001$, competence $\beta = 0.26$, $p < 0.001$, and relatedness $\beta = 0.26$, $p < 0.001$ (Table 1, Model 1–3). As regards intrinsic motivation, the estimated coefficients are: autonomy $\beta = 0.23$, $p < 0.001$, competence $\beta = 0.39$, $p < 0.001$, and relatedness $\beta = 0.36$, $p < 0.001$ (Table 2, Model 1–3).

These results suggest that high levels of students' identified and intrinsic motivation are strongly related to higher levels of teachers' support of the three teaching dimensions. The higher the quality of autonomy, competence, and relatedness support, the higher the level of students' identified and intrinsic motivation. We found no interaction effects between the three teacher support dimensions, identified and intrinsic motivation, and contextual as well as personal variables. This suggests that the three teacher support dimensions are equally important determinants of students' autonomous motivation, irrespective of subject teaching, grade level, school type,

school denomination, teacher and student gender, as well as duration of interacting with teachers.

About 11 % of the total variance in students' identified motivation, and about 12 % of the variance in students' intrinsic motivation, can be explained by differences in teachers' provision of autonomy, competence, and relatedness support. The three teaching support dimensions have unique importance for identified and intrinsic motivation. For identified motivation, autonomy support explains 2 % of the variance, competence support explains 8 %, and relatedness support explains 7 %. For intrinsic motivation, autonomy support explains 3 % of the variance, competence support 9 %, and relatedness support 8 %. This suggests that competence and relatedness support seem to have a relatively strong and equal importance for both identified and intrinsic motivation. Autonomy support, compared to competence and relatedness support, seems to have a weaker relation to both identified and intrinsic motivation.

Discussion and Conclusion

Satisfying universal human needs for autonomy, competence, relatedness have been shown to lead to higher levels of cross-cultural well-being (e.g. Church et al. 2013). Parents, peers, and teachers play a pivotal role in fostering need satisfaction among youngsters. As the Western motivational theory like SDT, which can be seen as a key indicator of positive education, recognizes that the (home and school) context is an important factor for the healthy development of the self, it is necessary to test the applicability of this theory in Asian school contexts to confirm the generalizability of SDT. To support the movement of positive education (Kristjansson 2012; Seligman et al. 2009) in the Asian context, the present study addressed the applicability of the SDT theory in the Indonesian context by examining the relationship between teacher autonomy, competence, and relatedness support, and the relative importance of teacher support.

Consistent with our first hypothesis, we found a highly significant and positive relationship between the students' perceptions of the three teacher support dimensions and students' autonomous motivation. A high quality of teacher autonomy, competence, and relatedness support corresponds to a high level of students' autonomous motivation. More importantly, the relationship between the three teacher support dimensions and student intrinsic motivation seems to be stronger compared to identified motivation. This indicates that for Indonesian students, teacher support is a powerful determinant of their inherent fun, challenge, and excitement of engaging in learning. Based on reviews of empirical research using SDT, Niemiec and Ryan (2009,

² In the full model, all possible interaction effects between personal and contextual variables were tested. No interaction effects were found.

Table 1 Multilevel models of identified motivation

	Model 0 (Empty model)		Model 1 (Relatedness model)		Model 2 (Competence model)		Model 3 (Autonomy model)		Model 4 (Full model)	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Fixed effect										
Intercept	2.97***	0.02	2.31***	0.08	2.29***	0.08	2.62***	0.09	1.77***	0.10
Background variables:										
Subject teaching			-0.10*	0.04	-0.10*	0.04	-0.10*	0.04	-0.09*	0.04
Grade level			0.03	0.04	0.03	0.04	0.05	0.04	0.02	0.04
School type			0.04	0.06	0.03	0.06	0.04	0.07	0.03	0.06
School denomination			0.30***	0.05	0.29***	0.05	0.34***	0.05	0.27***	0.04
Teacher gender			0.05	0.04	0.05	0.04	0.05	0.04	0.04	0.03
Student gender			-0.02	0.02	-0.02	0.02	-0.01	0.02	-0.02	0.02
Duration with teacher			-0.17***	0.04	-0.17***	0.04	-0.19***	0.04	-0.16***	0.04
Teacher support										
Relatedness support			0.26***	0.02					0.20***	0.02
Competence support					0.26***	0.02			0.18***	0.02
Autonomy support							0.14***	0.03	0.08**	0.03
Random effect										
Level 2 (class)	0.08	0.01	0.05	0.01	0.05	0.01	0.06	0.01	0.04	0.01
Level 1 (student)	0.23	0.01	0.23	0.01	0.23	0.01	0.23	0.01	0.23	0.01
-2Loglikelihood	6546.84		6296.58		6311.66		6397.09		6132.53	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Subject: 0 Math and natural science, 1 = Social science and language, Grade level: 0 = Lower level, 1 = Higher level, School type: 0 = General school, 1 = Vocational school, School denomination: 0 = Public school, 1 = Private school, Teacher gender: 0 = Male, 1 = Female, Student gender = 0 = Boy, 1 = Girl, Duration with teacher: 0 = ≤ 1 year, 1 = > 1 year. The indicated coefficient is Beta

p. 140) concluded that “in classroom contexts that support satisfaction of autonomy, competence, and relatedness, students tend to be more intrinsically motivated. This is in line with other Western research revealing the importance of the three teacher support dimensions for students’ intrinsic interest in learning (e.g. Deci and Ryan 2000; Ntoumanis, 2005, Thijs, 2011). From the motivational and teacher support perspective, our finding is consistent with SDT.

In agreement with the second hypothesis, we found that teacher competence and relatedness support could explain a substantial amount of variance in identified and intrinsic motivation. These findings are consistent with past research regarding the importance of (teacher) competence and relatedness support in the Asian context (Maulana and Opdenakker 2014; Maulana et al. 2013, 2014, Mesurado et al. 2015). Feeling connected to teachers and feeling academically competent appear to be important for students to experience the joy of learning—that is, to experience the intrinsic interest in learning.

Our third hypothesis was also confirmed. We found that compared to teacher competence and relatedness support, autonomy support had a weaker relationship with identified and intrinsic motivation. This finding is aligned with the

results reported in the research conducted in Hong Kong and Filipino context (Hui et al. 2011; Mesurado et al. 2015). It seems plausible to argue that the dialectic characteristic of the Indonesian classroom climate can explain this finding. Dialectic classroom climates are characterized by a teacher-centred approach, where teachers transfer the knowledge to students and students must memorize and recount during the examinations (Ho et al. 2004). Initiatives during the learning process come from teachers and support for students to learn in an autonomous way is hardly present (Kaluge and Tjahjono 2004).

The relatively weaker contribution of autonomy support may also suggest that the dialectic characteristic remains the characteristics of current Indonesian classroom practices. This tradition might cause difficulties for Indonesian teachers to switch to a dialogic approach providing an autonomy supportive learning climate. However, inspection of the general mean score of teacher autonomy support indicates that support for autonomy is not (entirely) lacking (see appendix 2). Other pervasive cultural values, including those related to power distance such as paternalism and respect for older individuals (Liem et al. 2008; 2009), and in cultures in which autonomy support is not a popular teaching style (Quoss and Zhao 1995), might make

Table 2 Multilevel models of intrinsic motivation

	Model 0 (Empty model)		Model 1 (Relatedness model)		Model 2 (Competence model)		Model 3 (Autonomy model)		Model 4 (Full model)	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Fixed effect										
Intercept	2.91***	0.02	1.99***	0.07	1.88***	0.07	2.32***	0.08	1.18***	0.10
Background variables										
Subject teaching			-0.02	0.03	-0.02	0.03	-0.02	0.03	-0.01	0.03
Grade level			-0.02	0.03	-0.02	0.03	0.00	0.03	-0.03	0.03
School type			0.03	0.05	0.02	0.05	0.03	0.05	0.02	0.05
School denomination			0.10*	0.04	0.09*	0.04	0.15***	0.04	0.05	0.04
Teacher gender			0.01	0.03	0.01	0.03	0.01	0.03	0.00	0.03
Student gender			-0.02	0.02	-0.02	0.02	-0.01	0.02	-0.02	0.02
Duration with teacher			-0.04	0.03	-0.04	0.03	-0.07*	0.03	-0.03	0.03
Teacher support										
Relatedness support			0.36***	0.02					0.25***	0.02
Competence support					0.39***	0.02			0.28***	0.02
Autonomy support							0.23***	0.03	0.13***	0.03
Random effect										
Level 2 (class)	0.04	0.01	0.03	0.00	0.02	0.00	0.03	0.00	0.03	0.00
Level 1 (student)	0.26	0.01			0.25	0.01	0.26	0.01	0.24	0.01
-2Loglikelihood	6849.09		6519.98		6504.81		6692.46		6256.36	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Subject: 0 = Math and natural science, 1 = Social science and language, Grade level: 0 = Lower level, 1 = Higher level, School type: 0 = General school, 1 = Vocational school, School denomination: 0 = Public school, 1 = Private school, Teacher gender: 0 = Male, 1 = Female, Student gender = 0 = Boy, 1 = Girl, Duration with teacher: 0 = ≤ 1 year, 1 = > 1 year. The indicated coefficient is Beta

students less receptive to autonomy support given by teachers. Future research on the role of autonomy and student outcomes in the Asian context should attempt to include the mentioned cultural factors. High aspirations among teachers and students in many Asian societies and emphasizing values such as conformity and social harmony seems to be reflected in the Indonesian view that competence and relatedness support appears to be more salient compared to autonomy support in promoting high academic (motivational) outcomes (Biggs 1994; Caleon et al. 2016; Chao and Tseng 2002; Scheider and Lee 1990).

Rather contrast to our findings, Jang et al. (2009) showed that effects of autonomy and competence support for Korean students' intrinsic motivation are large, while that of relatedness support is not significant. However, their research focused on support for autonomy, competence, and relatedness involving the teacher and peers together, which makes it difficult to compare the results with studies focusing solely on teacher support. Additionally, Caleon et al. (2016) found evidence for the salience of autonomy support with regard to student engagement. These results together seem to point that the within-Asia differences might be larger than we expect, and support the need to conduct more research focusing on both etic and emic aspects.

Nevertheless, our results showed that teacher autonomy, competence, and relatedness support together could explain more variance in identified and intrinsic motivation.³ This suggests that although competence and relatedness support are related more strongly to autonomous motivation compared to autonomy support, it is the three teaching behaviour together that matter more for students' autonomous motivation. This confirms that the three teaching behaviour together are important for the learning interest of Indonesian students, which is in line with the evidence yielded by Sheldon and Niemiec (2006) in a predominantly Caucasian sample for the need balance hypothesis stating that all three needs contribute to the well-being in concert. This implies

³ There is no consensus on how big an effect has to be in order to be considered meaningful. In many cases, effects measured in terms of proportion of variance explained can appear to be small, but in reality can be very important (Lane 2013). The rather small explained variance for the relationship between need-supportive teaching and autonomous motivation in practice is more common than we might think based on the theory. In education, motivation is not solely influenced by the teaching style of teachers, also students' factors such as initial level of motivation, interest, and other related factors might affect learning motivation. Considering all these factors, 12 % explained variance cannot be considered as small in an educational setting.

that competence, relatedness, and autonomy support are not only important determinants of autonomous motivation in the Western context, but also in Asian context like Indonesia (etic). The less salience of autonomy support, compared to competence and relatedness support, for Indonesian students' autonomous motivation might be an indication of a culture-specific result (emic) which requires further investigation in the future.

The current study is a single culture study, which makes it difficult to generalize the findings to Asian contexts. Divergent findings regarding the importance of the three teacher support dimensions for academic motivation in Asian contexts alone (e.g. this study, Hui et al. 2011; Jang et al. 2009; Mesurado et al. 2015) suggest the existing variation between Asian countries and the need to include data from multiple Asian countries within a single study. In the future the relationship between teacher support (teaching practices) and student motivation within and outside Asia should be studied more in depth. Furthermore, as the current study is correlational in nature, the next beneficial step is to conduct experimental intervention studies to investigate the effect of changing classroom practices and that of contextual manipulations on student motivation, well-being, and happiness. Finally, findings of the current study are limited to student perceptions only. Although

student perceptions of teaching behaviour are most predictive of their academic outcomes (Maulana and Helms-Lorenz, in press), the inclusion of a more objective way of measuring teaching behaviour and student motivation (i.e., natural observations) can generate more accurate insights.

Acknowledgments We would like to specially thank the research assistants (in particular Nurul Fadhilah and Nadiya Ahya Hayati) for their great commitment and dedication to gather data across many provinces in Indonesia for this study. We are also indebted to all schools and students for their voluntary participation. The present study was supported through a joint-research cooperation between University of Groningen and State University of Jakarta, under the project scheme International Comparative Analysis of Learning and Teaching 3 (ICALT3).

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Appendix 1

See Table 3.

Table 3 Examples of items of Teacher as Social Context (TASC) and autonomous motivation questionnaires

Dimension	Examples of items
Teacher as Social Context (TASC)	
Relatedness support	My teacher likes me My teacher knows me well My teacher spends time with me I cannot count on my teacher for important things (R)*
Competence support	Every time I do something wrong, my teacher acts differently (R)* My teacher doesn't make it clear what he/she expects of me in class (R)* My teacher shows me how to solve problems for myself My teacher makes sure I understand before he/she goes on
Autonomy support	My teacher gives me a lot of choices about how I do my schoolwork My teacher is always telling me what to do (R)* My teacher listens to my ideas My teacher talks about how I can use the things we learn in school
Autonomous motivation	
Identified motivation	I am studying this subject because I want to learn new things. I am studying this subject because it is personally important to me. I am studying this subject because this represents a meaningful choice to me. I am studying this subject because this is an important life goal to me.
Intrinsic motivation	I am studying this subject because I am highly interested in doing this. I am studying this subject because I enjoy doing it. I am studying this subject because it is fun. I am studying this subject because it is an exciting thing to do.

(R)* Negatively worded items

Appendix 2

See Table 4.

Table 4 Correlations between teacher support variables, personal, and contextual characteristics

	1	2	3	4	5	6	7	8	9	10	11	<i>M</i>	<i>SD</i>
1. Relatedness support	–											2.66	0.37
2. Competence support	0.45**	–										2.73	0.37
3. Autonomy support	0.16**	0.28**	–									2.60	0.29
4. Identified motivation	0.28**	0.30**	0.14**	–								2.98	0.56
5. Intrinsic motivation	0.26**	0.29**	0.15**	0.52**	–							2.91	0.55
6. Subject teaching	–0.04**	–0.05**	–0.05**	–0.10**	–0.03*	–						65 %	–
7. Grade level	0.03*	0.03	0.03*	–0.04*	–0.03*	0.04**	–					57 %	–
8. School type	0.00	0.01	0.02	0.01	0.02	–0.15**	–0.11**	–				10 %	–
9. School denomination	0.18**	0.19**	0.11**	0.21**	0.10**	–0.03	0.01	–0.15**	–			17 %	–
10. Teacher gender	0.02	0.02	0.02	0.04**	0.01	–0.15**	0.09**	0.04	–0.13**	–		63 %	–
11. Student gender	–0.02	–0.02	0.01	–0.06**	–0.04**	0.07**	0.03	–0.13**	–0.05**	–0.02	–	58 %	–
12. Duration teacher	–0.05**	–0.06**	0.01	–0.12**	–0.05**	–0.03	0.44**	0.04**	0.15**	–0.07**	0.06**	28 %	–

* $p < 0.05$, ** $p < 0.01$

Subject: 0 = Math and natural science, 1 = Social science and language, Grade level: 0 = Lower level, 1 = Higher level, School type: 0 = General school, 1 = Vocational school, School denomination: 0 = Public school, 1 = Private school, Teacher gender: 0 = Male, 1 = Female, Student gender = 0 = Boy, 1 Girl, Duration with teacher: 0 = ≤ 1 year, 1 = > 1 year

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