THE RELATION BETWEEN AUTONOMY SUPPORT, INTRINSIC MOTIVATION AND ACADEMIC ACHIEVEMENT IN THE MALAYSIAN CLASSROOM

BY

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Abstract

Using Self-Determination Theory as the framework, this study presented results from a convenience sampling study that evaluated the associations between perceived autonomy support (AS), intrinsic motivation (IM), and academic achievement in the Malaysian classroom. Secondarily, exploratory analyses were also carried out evaluating the relation between students' goal orientations (mastery and performance-orientations) and autonomy support, intrinsic motivation, and academic achievement. Participants were 144 sixteen-year-old students from a Malaysian urban (high-achieving, all girls) and a suburban (low-achieving, mixed gender) school. Participants completed a questionnaire on their perceived autonomy support, intrinsic motivation, self-reported grades, and goal orientations. Regression analysis, controlling for school type, was conducted. As hypothesized, there were significant associations between IM-AS, Grades-IM, Grades-Mastery Goals, and IM-Mastery Goals. Two of the correlations were in a direction opposite of the hypotheses: these were between grades and MG (r = -.234), and grades and IM (r = -.321), indicating that higher self-reported grades were associated with lower MG and IM. Results are discussed in the context of increasing autonomy support and its implications, in Malaysian classrooms.

Key words: Self-Determination Theory, Autonomy-Supportive, Intrinsic Motivation, Goal Orientations, Academic Achievement

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Chapter 1: Introduction

There is increasing pressure for students to attain a high level of academic achievement in Malaysia. A high level of academic achievement is the basic requirement for students to enter the Sixth Form, which is the equivalent of 11th and 12th Grades in the United States educational system. The Sixth Form is the only pathway to qualify students to apply for further education in a Malaysian public university (Ministry of Education, 2004). Similar to trends in other countries, getting a degree increases the prospects of getting a higher paying job and increases the chances of obtaining a better lifestyle (Pascarella & Terenzini, 2005).

One of the goals of education is to ensure that students are equipped to fulfill their roles as citizens through personal, social, and civic responsibilities. Many teachers and parents want students to have meaningful and enduring learning experiences and develop a greater capacity to think critically and creatively. Critical and creative thinking are skills that are sought after by prospective employers and can help individuals adapt and thrive in the working environment (Driver, 2001; Kane, Berryman, Goslin & Meltzer, 1990; Scott & Bruce, 1994). The global economy of today demands that individuals have a greater capacity for self-motivated learning—e.g., creativity, problem-solving, and innovation—in a workplace continually faced with novel problems and situations (Leitch, 2006; Kanter, 1995; Secretary's Commission on Achieving Necessary Skills (SCANS), 1991). Therefore, schools have been encouraged to take up the challenge to prepare students to not only strive for academic achievement (e.g. getting A's) but to also to effectively prepare students for demands and flux of changing workplace (Levy & Murnane, 1996). It has been suggested that autonomy supportive classrooms will promote student academic achievement and the support development of capacities needed for occupational success in a global economy (Niemiec & Ryan, 2009).

Although there are many factors that influence academic achievement (e.g. SES, family background, nutrition, income), school factors such as school culture, classroom size, curriculum, and teachers play important roles in affecting achievement outcomes (Berliner, 2009). For example, based on a meta-analysis, Marzano (2000) reported that, on average, teachers accounted for 13% of the variance in students' academic achievement. Teachers can actively create classroom environments that promote learning through their instruction, curriculum design and classroom management (Cotton, 1995; Fraser, Williamson, & Tobin, 1987 and Wahlberg, 1969). Wigfield & Eccles (2000) proposed that "high-quality" (e.g., clear instructions) classroom environments support students' persistence in task, learning motivation, and higher achievement. In contrast, a classroom climate that overly emphasizes students' test performance, thereby creating a "high-stakes" testing environment, undermines students' intrinsic motivation for learning (Pintrich & De Groot, 1990).

This study examines the relation between Malaysian classrooms' autonomy supportive learning environment and how it can set the stage for students' intrinsic motivation and academic performance. Although there is ample evidence for the relation between autonomy supportive classrooms and how it affects students' motivation in the United States and other Western societies, there is no empirical research that has examined this relationship in Malaysian schools. The theoretical framework for conceptualizing student motivation is centered on Deci and Ryan's Self-Determination Theory (Ryan & Deci, 2000), which posits that intrinsic motivation is innate and individuals can experience self-determination in a setting (e.g., classroom) if the setting fosters it. Examining autonomy support and self-determination within the Malaysian classroom setting will introduce and give teachers not only an alternate perspective and approach

for enhancing academic performance but also suggest the potential value of autonomy support for Malaysian students' preparation for college and careers.

There are three primary hypotheses:

Hypothesis 1). Students' intrinsic motivation will be positively related to their perceived autonomy support.

Hypothesis 2). Students' self-reported grades will be positively related to their level of intrinsic motivation.

Hypothesis 3). Students' self-reported grades will be positively related to their perceived autonomy support.

In addition to the primary hypotheses, exploratory analyses will be conducted to examine the association of intrinsic motivation and students' goal orientations as it is has been proposed that academic goal orientations (mastery or performance-oriented) may influence intrinsic motivation.

Chapter 2: Literature Review

History of Motivation Theory and Research

General scientific developments, such as Darwin's theory of evolution in biology, had strong influences on early motivation theories. These scientific ideas led to the conception of living organisms as types of machines, with motivation as the energy that fuels the machine (Weiner, 1990). The organism was thought to strive toward homeostasis, or an optimal state of satiation. Motivation for action was thought to derive from a deprivation that created a disruption of the homeostatic state. For example, deprivation of nourishment leads to motivation to seek food, and deprivation of interesting surroundings leads to motivation to seek stimulation. In these

theories, the main explanation was attributed to "drive", a concept that aimed to restore homeostasis to an organism.

"Instincts," "Needs," and other related motivational concepts of the early twentieth century were similar in their emphasis on the general organismic and "energetic" character of behavior. Motivational theories of the period explained how the energy provided by the drive, instinct, or need combined with the organism's skill in a certain behavior, and the relative value of the behavior's reward to elicit and guide action (Hull, 1952).

The inclusion of cognitive processes, such as expectancies for success and perceptions of its value was added to the major theories of achievement motivation in the middle of the twentieth century. Arguably, the most notable among these theories was that of David McClelland, John Atkinson, and their colleagues (McClelland, Atkinson, Clark & Lowell, 1953). For these researchers, achievement motivation was based in a personality characteristic that manifested as a predisposed need to improve and perform well according to a certain standard of excellence. This achievement motive, which the researchers labeled n-Achievement, or nAch, was believed to form during the first years of life through parents' child-rearing practices: primarily, how parents expected and rewarded, either tangibly or affectively, independence in their children. McClelland and his colleagues hypothesized that these early experiences led to the propensity to experience a strong emotional arousal when cues in the environment were interpreted as an opportunity to achieve. Individuals were thought to differ from each other in the strength of this arousal and in the breadth of cues that elicited it.

Self-Determination Theory

Self-determination theory (SDT) is a broad motivational theory addressing the issue of individuals achieving desired outcomes and personally working though setbacks. Like prior

theories, SDT assumes that humans are naturally active and have the tendency to interact with the environment in order to achieve a desired outcome or goal. Unlike prior theories, however, SDT posits that from birth onward, humans, in their healthiest states, have the propensity to act on their environment, eventually minimizing the need for external incentives. This innate motivational tendency is hypothesized to be a critical element in cognitive, social, and physical development because it is through acting on inherent interests that one grows in knowledge and skills. The inclinations to be curious of something new, to actively assimilate the experience, and to creatively apply new skills learned is not limited to childhood but is a significant feature of human nature that affects performance, persistence, and well-being across the lifespan (Ryan and Deci, 2000; Ryan & LaGuardia, 2000).

Under SDT, different types of motivation—namely, intrinsic motivation, extrinsic motivation, and amotivation—are clearly distinguished. Behavior can be brought about through intrinsic motivation (pleasure and interest-related motives), extrinsic motivation (instrumental motives), and amotivation (an absence of motivation; Deci & Ryan, 1985, 2002).

When individuals experience intrinsic motivation, they engage in behaviors they perceive as inherently interesting, satisfying, enjoyable, and absorbing (Deci & Ryan, 1985). Intrinsically motivated individuals will move, act, or direct their energy and effort into tasks for the enjoyment of the experience or the challenge involved. They are less moved by the external factors such as rewards or pressure. Intrinsic motivation helps individuals to seek challenges, discover new perspectives, stretch their capacities, and express their talents to become more self-determined individuals who have actualized their human potentials (Deci & Ryan, 2002).

With extrinsic motivation, individuals engage in behaviors because of the external outcomes they produce, such as praise or rewards. Unfortunately, in the long run, extrinsic

motivation may cause individuals to perform and direct their energy and effort into actions based primarily on external factors, which could lead to resentment, resistance, and disinterest in a task (Deci, 1971; Deci, Koestner, & Ryan, 1999; Lepper, Greene, & Nisbett, 1973). Originally, the intrinsic and extrinsic forms of motivation were hypothesized to lead to similar increases in the same behaviors (Atkinson, 1964). However, an extensive array of studies has shown that extrinsic rewards over time, such as deadlines (Amabile, DeJong, & Lepper, 1976) and surveillance (Plant & Ryan, 1985) tend to decrease intrinsic motivation for engaging in behaviors related to the reward (Deci, Koestner, & Ryan, 1999).

Those who experience amotivation cannot predict the consequences of their behavior, nor can they see the motive behind it. They may feel disintegrated or detached from their actions and will thus invest little effort or energy into a task. In other words, amotivation is when individuals experience a relative absence of motivation to engage in a task.

Basic Psychological Needs

SDT theorizes that three essential psychological needs leading to self-determination are competence, relatedness, and autonomy. In theory, meeting these three needs can improve intrinsic motivation (Deci & Ryan 1985; Ryan & Deci, 2000; Ryan, Kuhl & Deci, 1997). Intrinsic motivation that arises from meeting these basic psychological needs has been associated with various positive outcomes, such as increase in cognitive flexibility, conceptual understanding, and information processing (Grolnick & Ryan, 1987), as well as enhancing academic performance and academic self-concept (Deci, Vallerand, Pelletier, & Ryan, 1991; Reeve, Bolt, & Cai, 1999). Although all three of these needs are discussed next, the primary focus of this study is on autonomy support.

SDT hypothesizes that interpersonal events and structures in a social setting (e.g., rewards, communications, feedback) contribute towards meeting basic psychological needs of feeling competent. Individuals tend to seek challenges and take initiative to improve skills in order fulfill the need for competence. Intrinsic motivation, then, is enhanced when social and contextual activities provide an environment that supports feelings of competence.

SDT also hypothesizes that secure attachments encourage feelings of belonging or the relatedness (Ryan & Deci, 2000). Relatedness is the need to experience oneself as connected to others and having affirmations of security to produce exploratory behavior without feelings of threats. In infancy, exploratory behavior, which indicates that the presence of intrinsic motivation (e.g., Bowlby, 1979; Frodi, Bridges & Grolnick, 1985), is more evident when the infant is securely attached.

The third basic principle of SDT is that every individual has the need for autonomy. Autonomous behavior or action is, in theory, the result of individuals' objectives; they also want to experience their "self" as the emanating source of their own actions and behaviors (deCharms, 1968; Deci & Ryan, 1985). Individuals, who experience the freedom of making personal choices and actions, fulfill their need for autonomy and demonstrate higher levels of intrinsic motivation (Frederick-Recascino, 2002).

SDT argues that individuals will desire outcomes when they are able to fulfill their basic psychological needs (i.e. autonomy; Deci, Vallerand, Pelletier, & Ryan, 1991). Furthermore, SDT posits that prospects of rewards, punishment, competition, and imposed goals generally undermine intrinsic motivation in activities that are uninteresting and reduce an individual's sense of autonomy (Deci et al., 1991). It follows, then, that classroom environments supporting students' feeling of autonomy may be related to learning and motivation (Reeve & Jang, 2006;

Stefanou, Perencevich, DiCintio, & Turner, 2004). Thus, self-determination theory suggests a possible mechanism underlying the potential success on students' learning.

Autonomy Support

Autonomy supportive environments help to facilitate intrinsic motivation. Grolnick, Deci, and Ryan (1997) and Ryan, Sheldon, Kasser, and Deci (1996) state that the cluster of autonomy-supportive actions includes behaviors such as providing choice, encouraging self-initiation, minimizing the use of external controls, and acknowledging the other's perspective and feelings. Opportunities to experience oneself as autonomous, and thereby increase intrinsic motivation, are facilitated by environments that are autonomy supportive (Deci & Ryan, 1987, 1991; Grolnick & Ryan, 1989; Reeve, Bolt, & Cai, 1999). Autonomy supportive environments are characterized by opportunities that allow individuals the freedom of expression and action, support them in their choices, and uphold identity development (Deci & Ryan, 1987, 1991; Ryan & Solky, 1996). Importantly, Skinner and Edge (1998) state that autonomy support fosters individuals to actively discover, explore, and articulate their views, goals, and preferences in decision-making and problem-solving processes (Deci, Koestner & Ryan, 1999; Zuckerman, Porac, Lathin, Smith, & Deci, 1978). The relation between autonomy support and intrinsic motivation has focused on autonomous versus controlling environments (Deci, 1971; Lepper, Greene, & Nisbett, 1973). A meta-analysis by Deci, Koestner, and Ryan (1999) found almost every type of reward made contingent on task performance thwarts intrinsic motivation. Research also suggests that threats, deadlines, directives, and excessive competitive pressures (such as those faced by students to do well in examinations) diminish intrinsic motivation because they leave individuals feeling controlled (e.g. manipulated), thereby decreases their

sense of autonomy (Amabile, DeJong, & Lepper, 1976; Deci & Cascio, 1972; Koestner, Ryan, Bernieri, & Holt, 1984; Reeve & Deci, 1996).

SDT posits that autonomy support in classrooms can enhance students' learning, ultimately leading to higher levels of achievement and skill development (Deci & Ryan 1985; Lepper & Green, 1975; Reeve, 2002; Ryan, 1982). Teachers who are more autonomy supportive are able to look at things from the learner's perspective, and allow opportunities for self-initiation and choice; they are able to provide a meaningful rationale if choice is constrained, refrain from the use of controlling behavior to motivate, and provide timely positive feedback (Deci et al., 1994, Reeve & Jang, 2006).

Research supports the importance of autonomy support in academic motivation and success (Deci & Ryan, 1991; Hardre & Reeve, 2003; Reeve, 2002). Reeve et al., (1999) found that students in autonomy supportive classrooms were more intrinsically motivated to do well in school: learning complex concepts better, demonstrating more conceptual and creative processes, producing higher levels of academic achievement (Benware & Deci, 1984; Grolnick & Ryan, 1987). Students also reported having deeper and fuller learning experiences (i.e. understood how these facts fit together thematically vs. rote learning; Grolnick & Ryan, 1987) and were more likely to stay in school (Vallerand, Fortier, & Guay, 1997). Thus, research, based primarily on samples from Western societies, indicates that autonomy supportive classrooms enhance learning motivation and achievement.

Autonomy Support in Non-Western Contexts

Cross-cultural research (Markus & Kitayama, 1991; Miller & Bersoff, 1992; Rudy, Sheldon, Awong, & Tan, 2007) typically indicates that collectivists cultures see themselves as being more interdependent of each other, with shared interests, goals and values, and less

independent (i.e. being distinct from others with divergent interests, goals and values). Children from collectivists cultures, are exposed to more interdependent norms in their respective societies (Miller, 2003). There is an implicit idea that autonomy and choice have strong associations with independence and when a society emphasizes interdependence, and then autonomy and choice are naturally less important (Markus & Kitayama, 2003).

In response to critiques, Ryan and Deci (2000) maintain that all individuals have the need to experience autonomy. To support their claim, a full understanding of autonomy within SDT is needed. Ryan and Deci (2000) refer to autonomy within SDT as reflecting on intrapersonal experience of "volition and choice" (Vansteenkiste, Zhou, Lens, & Soenens, 2005), while the opposite of autonomy is the experience and feeling of being manipulated and controlled (Ryan & Lynch, 1989). Within the SDT, autonomous individuals can accept external guidance and support but they can also feel coerced. Therefore, autonomy does not carry the idea that individuals do not rely on others or are separate from others as suggested by Iyengar and DeVoe (2003) and Markus and Kitayama (2003).

Emerging cross-cultural research supports Ryan and Deci's claim that the need for autonomy is applicable to collectivists' cultures. Sheldon, et al. (2004) showed the subjective well-being of individuals in China, South Korea, Taiwan and the USA was positively predicted by higher autonomy. Other studies by Chirkov, Ryan, Kim and Kaplan (2003), Chirkov, Ryan and Willness (2005), Hayamizu (1997), Tanaka and Yamauchi (2000) and Yamauchi and Tanaka (1998) showed similar findings of higher levels of autonomy support among Russian, South Korean, Turkish, Brazilian, Chinese, Japanese, American, and Canadian individuals to be positive predictors of learning, intrinsic motivation, more optimal learning styles and academic achievement.

Although Deci and Ryan's (1985) self-determination theory has empirically supported the need for people to feel autonomous and being agents of their own actions, some cross-cultural theorists such as Brickman and Miller (2001), Markus and Kitayama (2003), Oishi (2000) and Oishi and Diener (2001) have argued that autonomy is not a universal need and is only useful when predicting and understanding the dynamics of motivation and achievement among Western cultures. They have argued that the need to feel autonomous is less valued in Eastern cultures where societal structures value conformity and interdependence (Vansteenkiste, Zhou, Lens, & Soenens, 2005). Iyengar and Lepper (1999) conducted series of studies suggesting that personal choice, as displayed in autonomous decisions, were deemed less important to individuals from collective cultures: Asian American participants persisted longer at tasks both they and their mothers chose for them and less when an outsider chose the task. Anglo American individuals instead persisted longer only when they personally chose a task themselves. Iyengar and Lepper (1999) argued this demonstrated that autonomy was less relevant to Asian American individuals than Anglo American ones. Oyserman, Coon, and Kemmelmeier (2002) found similar results when studying Brazilians, who emphasized collectivism compared to Americans who emphasized individualism.

The bulk of empirical research suggests the importance of autonomy support for learning and achievement. While several studies question the relevance of autonomy support among more collectivist societies, these studies also found that for children when personal choice is combined with parental choice the child persists longer on a task, which is hypothesized to be an 'outcome' of autonomy support (Iyengar & Lepper 1999). There are important limitations and caveats to the few studies on autonomy support in collectivist societies. First, children were the focus of the studies and autonomy support may not yet be as salient a developmental process as in later stages

of development. Autonomy is especially salient for adolescents, thus Iyenger and Lepper's (1999) focus on children alone from collectivist societies may not provide an accurate picture. Second, autonomy support in the form of individual choice was still significantly related to one outcome—task persistence—although its relation was in the context of a parent also being part of the choice. This suggests, then, that the processes (and not necessarily the construct) whereby autonomy support enhances learning and outcomes could differ across societies. Furthermore, Oyserman, Coon, and Kemmelmeier (2002) meta-analyses indicated that East Asian and Middle-Eastern regions, which were generally thought to be collectivist showed higher individualism than English-speaking (e.g New Zealand) and Western Europe. Overall then, research suggests a strong linkage between autonomy support and learning motivation and achievement, but research on this relation in collectivist societies, especially among adolescents, is inconclusive.

Autonomy Support in the Malaysian Education Context

This study examines autonomy support and its relation to intrinsic motivation, academic achievement, and academic goal-orientations in the Malaysian classroom. Malaysia is considered a collectivist society. The results of this study can inform teachers about the role that autonomy support can have in enhancing students' learning motivation and achievement. Further, to assist the Malaysian government's task of preparing individuals to be more competitive in the global economy (i.e., individuals who are able to achieve high academic standards and be equally adaptive and thrive in the new working environment), the findings of this study can elucidate the potential value of autonomy support to foster intrinsic motivation and improve academic achievement in the Malaysian context.

In my observations as a teacher in the Malaysian education context for twelve years, I believe the SDT can be helpful to Malaysian teachers who face mounting pressures to keep

students focused on achieving high scores in standardized examinations. A move towards increasing students' intrinsic motivation through the means of autonomy support may widen teachers' options. As observed, the traditional model of classroom typically used in Malaysia emphasizes lecture-style instruction that involves mostly one-way transfer of information, with homework being the usual vessel of getting students motivated in their learning (Lau & Ellias, 2011). The Malaysian educational context has a more controlling atmosphere where desired behaviors or outcomes are brought about by various methods of explicit rewards and punishments (e.g. demerit points, seeing the discipline teacher), which I suggest, can undermine intrinsic motivation. For example, students remain as passive and obedient recipients of knowledge and information and play little part in the learning process (Neo & Neo, 2003). In the Malaysian classroom context, there is sense that teachers need to be in control of the learning environment, activities, and behaviors of the students. The teachers also face demands and pressures from administrators and parents to ensure students are performing well (e.g. achieving A's) in high-stakes standardized examinations and school rankings, which may lead teachers toward feeling a need to be more explicitly in control of the classroom environment. This idea of providing autonomy support for students, I suggest, will be new to Malaysian teachers. Research in other countries has shown that autonomy supportive classrooms can be helpful in maintaining or enhancing intrinsic motivation in learners. However, the effects of autonomy supportive classrooms on intrinsic motivation and academic achievement have not been studied in Malaysia. Therefore, I argue that Malaysian teachers in general could benefit from seeing how support for students' autonomy may hold promise for enhancing students' achievement.

Secondary Analyses: Academic Achievement Goal-Orientations

As much as autonomy support and intrinsic motivation have been argued to positively affect academic achievement, the possibility of students' goal orientation playing a role in their intrinsic motivation and academic achievement may also be important (Guskey & Gates, 1986; Ritchie & Thorkildsen, 1994). Goal orientations represent acquired personal dispositions to pursue either mastery learning goal or performance goal-orientations (i.e., performance-approach and performance-avoidance) in achievement situations (Dweck, 1999). A mastery learning goal-orientation is associated with the belief that ability can be developed; in theory, students are intrinsically motivated to increase their mastery and competence over challenging situations to pursue a set goal (Wentzel 1991, 1993). Thus, the focus of attention is on the intrinsic value of learning (Nicholls, 1984) as an individual masters and understands the content and finds enjoyment and interest in the actual act of learning (Brophy, 1983).

In contrast, Ames (1992) states that performance goal-orientations (PG) are associated with the belief that ability is fixed and difficult to develop, and that individuals are motivated to establish the adequacy of their ability in the eyes of others and to avoid situations where they may appear inadequate (i.e. performance approach and performance avoidance). Individuals who adopt a performance-approach goal-orientation work towards a goal with the intention of looking good to others, while those who adopt performance-avoidance goal-orientation tend to be more concerned with drawing as little attention as possible to their performance from others (Ames, 1992).

Both mastery learning goal and performance goal-orientations allow students to reach academic achievement goals but like intrinsic motivation, research suggests that mastery learning-orientation is associated with motivation-related variables that promote and sustain

positive achievement activity. Ames and Archer (1988) linked mastery learning goals to personal beliefs that effort lead to success. Furthermore, it is possible that students who adopt mastery learning goals cultivated a self-regulated type of learning, which could be intrinsically motivated; they seek information in order to acquire, develop, and refine their knowledge and skill (Butler, 2000). This mastery learning goal orientation as a possible result of being intrinsically motivated may help students to continue improving themselves.

However, research also indicates that both mastery learning goal and performance goal-orientations have their place in students' learning and academic achievement (Wentzel 1991, 1993; Wolters, Yu, & Pintrich, 1996). Harackiewicz and Sansone (1991) indicate that in specific situations performance goals can also promote the development of competences. It has also been pointed out that the different goal-orientations do not necessarily need to be treated as opposites. For example, Meece and Holt (1993) found that students could be high in mastery goal-orientations and also high in performance goal-orientations, while others could be low in both dimensions. From this viewpoint, achievement goals are seen as complementary and that students can pursue a mastery-performance-approach, or performance-avoidance goal-orientations simultaneously (e.g., Valle, Cabanach, Rodríguez, Nunez & Solano, 2007). Looking into students' achievement goals, then, can add additional insights into differing ways students engage in, evaluate, and perform in academic settings, as well as insights into other factors affecting academic achievement.

Research on the role of goals at the academic level coincide in noting that learning goals are beneficial for most learning-related results, including results at a motivational level, such as self-efficacy, interest, and value (Harackiewicz, Barron, Tauer, Carter, and Elliot, 2000). But it cannot be concluded that PG's do not hold any advantages, as empirical results about the benefits

or disadvantages of performance goals are fairly controversial and some authors consider that their effects on motivation and learning are more complex and require more theoretical and empirical attention (Utman, 1997). Furthermore, the distinction between performance-approach goals and performance-avoidance goals has led, among other things, to the reconsideration of the effects of performance-approach goals. Pintrich (2000b) noted that there may be situations in which performance-goals are not disadvantageous to motivationally and affectively in terms of the use of strategies and achievement. In fact, in some works, performance-approach goals seem more closely linked to achieving goals, whereas learning goals are more related to intrinsic interest in the tasks (Harackiewicz et al., 2000).

Method

This study describes autonomy support in Malaysian classrooms and students' perception of autonomy support, and evaluates the association between autonomy support and both intrinsic motivation and student academic achievement. It was hypothesized that students who perceive greater autonomy support in their classrooms would have higher levels of intrinsic motivation and higher levels of academic achievement. A questionnaire was administered to students.

Participants

Participants in this study consist of sixteen-year-old students from two high schools (Convent Bukit Nanas High School (CBN) and Bandar Sri Permaisuri High School (SMP)) in Kuala Lumpur, Malaysia. There were 46 and 98 students from each school respectively. CBN is an all-girls school in the city with students who are generally more academically inclined. SMP is a co-educational school in the suburbs with generally less academically inclined students. Malaysia has a strong English language background as it was previously colonized by the British. This convenience sampling included 144 students (CBN, $n = 146$, SMP, $n = 98$). The

actual number of students (N=144) did not meet the expected number of 300 students. This could have been a result of a number of reasons, such as students going on field trips, attending sports meets, absentees, and those who had chosen not to participate. Unfortunately, the actual reasons why some students did not participate could not be determined. The students were asked to complete questionnaire. All participants were included in the sample. All students are proficient in the English language as English is learned as a second language alongside with the Malay language from pre-school to university.

Procedures

Three versions of questionnaire (Appendix E) were distributed to both schools respectively to ensure that there would not be an order effect, i.e. to counterbalance. Parents were notified, through a letter addressed to them with information about the goals of the study and with information that enabled them to decline their child's participation from the study two weeks prior to the questionnaire being distributed (Appendix A and B). Students were informed of their rights as research participants and that their participation would not affect their grades in school (Appendix C). Students were also informed that their responses would be held completely confidential and their teachers would not have access to students' responses. Students' assent of participation (Appendix D) was obtained by them completing and submitting their questionnaires. Students completed questionnaires and placed completed questionnaires into an envelope. The last student to complete the questionnaire sealed the envelope.

Instruments

Learning Climate Questionnaire (LCQ). Perceived autonomy support was measured using the LCQ that was adapted by Williams and Deci (1996) from the Health-Care Climate Questionnaire (Williams, Grow, Freedman, Ryan, & Deci, 1996). There were 15 items in the

measure that are answered on a seven-point Likert scale (ranging from 1 = 'strongly disagree' to 7 = 'strongly agree'). A sample item is, 'I feel that my teachers provide me with choices and options.' The LCQ has a single underlying factor and in previous studies has had a high internal consistency with an alpha of 0.93 (Black & Deci, 1999). Williams and Deci (1996) has also validated the 15 items on the LCQ in a study of medical students; students who experienced more autonomy supportive environment reported an increase in interest and perceived competence. They found that across domains, the alpha coefficient of internal consistency is virtually always above 0.90. Scores on the questionnaire were calculated by averaging the individual item scores. Higher average scores represented a higher level of perceived autonomy support. The alpha reliability was reported at .96.

Intrinsic Motivation Inventory (IMI). The IMI (Ryan, 1982) assessed students' subject experience of IM and characteristics in a setting that promote IM for a target activity in the classroom. It has been used in several experiments related to intrinsic motivation and self-regulation (e.g., Ryan, Koestner & Deci, 1991) and in published research it has an internal reliability of an alpha of 0.85 (McAuley, Duncan & Tammen,1989). The IMI consisted of seven domains related to IM; one of these domains was considered a direct measure of IM while the remaining assessed constructs related to it. For this study, three domain scales were used: IM, Perceived Choice (in activity), and Perceived Anxiety. (Perceived Choice is closely related to Ryan and Deci's construct, autonomy support, described above).

The IMI consists of varied numbers of items from these subscales, all of which had been shown to be factor analytically coherent and stable across a variety of tasks, conditions, and settings. The general criteria for inclusion of items on subscales have been a factor loading of at

least 0.6 on the appropriate subscale, and no cross loadings above 0.4. Typically, loadings substantially exceed these criteria.

There were 19 items in the measure that were answered on a seven-point Likert scale (ranging from 1 = 'not at all true' to 7 = 'very true'), which indicated the degree to which students agree to a statement. A sample statement is, 'I enjoy doing the classroom activities very much.' Items for which and "R" is shown were reversed scored. Then, scores on the each subscale were calculated by averaging across all of the items on the subscales. A higher score indicates more of the concept described in the subscale name.

Academic Achievement. Students' academic achievement was based on their voluntary responses to what grades generally describe them (Grades). The sample statement is, 'Which of the following best describes your grades in school?' to which the response scale consisted of eight grade categories from "Mostly A's" to "Mostly F's". Responses were also reverse coded.

Patterns of Adaptive Learning Scales (PALS). PALS assesses students' academic goal-orientations. The student scale used in this research is focused on students' personal achievement goal orientations. There are 14 items in the measure that are answered on a seven-point Likert scale (ranging from 1= 'strongly disagree' to 7= 'strongly agree'). The scales are based on research showing that a differential emphasis on "mastery" and "performance" goals is associated with adaptive or maladaptive patterns of learning (e.g., Ames, 1992; Dweck, 1986). In addition, recent evidence suggests that a performance goal-orientations can be conceptualized in terms of both approach and avoidance components (Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997). Therefore, the scales included performance-approach and performance-avoidance goal-orientations in addition to the mastery learning goal orientation scale. Prior research has evaluated the construct validity of the revised personal goal scales. Using

confirmatory factor analysis, Midgley, et.al (2000) found evidence for the revised scales: goodness of fit indices suggested that the model fit the data well (GFI = 0.97, AGFI = 0.95).

Plan of Analysis

Prior to conducting the main analyses, preliminary analyses were conducted to examine descriptive statistics for the study variables and the bi-variate correlations among variables. For the main analyses, regression procedures were conducted. Step 1of the regression procedures evaluated the associations between the independent variable (IV) and the control variables—school type and gender. Step 2 added the independent variable(s). The variance explained by each step was evaluated, as were the standardized beta coefficients and their magnitude for each variable. Finally, the total variance explained by all variables in the model was evaluated. While intrinsic motivation and perceived autonomy support could either be an independent or dependent variable, IM and AS were treated as IV's when evaluating the associations between them and grades. To determine associations between IM and goal orientations (mastery learning goal, performance-approach and performance-avoidance), IM was again treated as an IV.

Results

Preliminary Analyses

Preliminary analysis of the survey items, including reliability of composite measures and descriptive statistics, was conducted. There were no missing data. However on running analysis on response patterns, nine respondents showed response bias. When interpreted at face value, these individuals do not accurately represent the sample studies, leading to a bias, and can influence the estimate of sample characteristics. These nine respondents were dropped from the sample. Reliability coefficients and descriptive statistics with the adjusted scales for 135 participants are displayed in Table 1.

Reliability Analysis

The criteria for the composite scale reliability for each construct had to meet the recommended minimum cutoff of 0.70 (Nunnally, 1978). Mastery learning goal-orientations (MG), perceived autonomy support (AS), and intrinsic motivation (IM) demonstrated acceptable reliability (see Table 1), but performance-approach, performance-avoidance goal-orientations, perceived choice, and perceived anxiety did not. The reliability of the performance approach (PerfAppr) Goals scale with all five of the original items was α = .67. Reliability analysis indicated that inclusion of item-4, "One of my goals is to looks smart in comparison to the other students in my class," decreased the internal consistency of the scale below .70. Thus it was dropped, leading to a final reliability with four items of α = .71. The reliability of the performance-avoidance (PerfAvoid) goal-orientation scale with all four the original items was α = .63. Analysis indicated that one item, "One of the goals is to keep others from thinking I'm not smart in class," substantially decreased the reliability of the scale. With this item removed, the internal consistency for the performance avoidance goals scale with three items was α = .74.

For Perceived Choice (PC), the two positively worded items (Item 1, "I believe I have some choice about doing the activities" and Item-6, "I do the activities because I have no choice") were dropped and only the five reversed items were retained to increase the reliability from .60 to .68. Even with this consideration, the minimum criterion for composite scale reliability was insufficient and the measure was dropped. Furthermore, this measure was not part of the analysis. The perceived anxiety measure that had two positively worded and two negatively worded items and was dropped because the overall reliability was too low (α = .555) and creating two-item scales—one for positively and one for negatively worded items—was deemed conceptually and statistically inappropriate.

Descriptive Statistics

The mean score for self-reported grades, ($M = 4.33$) showed students had average grades of "B's and C's" and "C's" (Table 1). Mean scores for performance-approach goals, performance-avoidance goals and perceived autonomy support were located close the mid-point of the 1-7 response scale (e.g., $M = 4.22$). Mastery learning goal and intrinsic motivation, however, showed higher mean scores ($M = 6.15$ and $M = 5.09$, respectively).

The correlations among the study variables were mainly consistent with hypothesized relations in the literature. Six of the 15 correlations were statistically significant at $\alpha < .05$. Four of the six significant correlations were in the expected positive direction. For example the correlation between intrinsic motivation and mastery goals was $r = .322$, indicating that higher self-reported IM was associated with higher self-reported mastery learning goal (MG), and vice versa. Two of the correlations were in a direction opposite of what was expected: these were between grades and MG ($r = -.211$), and grades and IM ($r = -.298$), indicating that higher self-reported grades were associated with lower MG and IM. The remaining nine correlations were in expected direction but not statistically significant, which is also consistent with research literature.

Main Analyses

Gender was evaluated for inclusion in the regression models. Regression analyses were conducted with and without gender to determine if it has an impact on the pattern of findings. These analyses indicated it did not alter the pattern or significance of results and was thus dropped. Given that one of the two schools in the sample was an all-girls school, it was not surprising that adding what amounts to an additional measure for gender failed to influence the

results. The type of school (0 = CBN, 1 = SMP) was included in all models. Results are presented next by hypothesis.

Hypothesis 1. *Students' intrinsic motivation will be positively related to their perceived autonomy support.* Regression analyses for Model A (Table 2) indicated that the type of school was associated with students' intrinsic motivation, $F(1,133) = 17.057$, $p < .001$. Type of school explained 11.4% of the variance in students' intrinsic motivation and, based on the regression coefficient for school type (CBN = 0, SMP = 1), students at SMP reported higher intrinsic motivation, $\beta = .337$, bootstrap CI = .339 – .989. Model B added students' perceived autonomy support in the classroom to Model A. Model B explained a significant and additional amount of variance in students intrinsic motivation, 27.1%, $F(2,132) = 61.88$, $p < .001$. The regression coefficient indicated that, controlling for type of school, higher perceived autonomy support in the classroom was associated with higher intrinsic motivation, $\beta = .480$, bootstrap CI =.366 – .634, and vice versa. The type of school coefficient remained significant and in same direction, $\beta = .417$, bootstrap CI = .540 – 1.097. The final model, Model B, explained a total of 32.8% (Adjusted R^2) of the variance in students' intrinsic motivation.

Hypothesis 2. *Students' self-reported grade will be positively related to their level of intrinsic motivation.* Regression analyses for Model A (Table 3) indicated that the type of school was associated with students' self-reported grades, $F(1,133) = 697.991$, $p < .001$; It explained 84% of the variance in students' self-reported grades and, based on the regression coefficient for school type (CBN = 0, SMP = 1), students at CBN self-reported higher grades, $\beta = -.916$, bootstrap CI = -4.155 -3.569, than students at SMP. Model B failed to explain a significant amount of variance in students' self-reported grades. That is, intrinsic motivation was not

significantly associated with self-reported grades, controlling for school type. The final model then explained a total of 83.8% (Adjusted R^2) of the variance in students' grades.

Hypothesis 3. *Students' self-reported grade will be positively related to their perceived autonomy support.* Regression analyses for Model A (Table 4) again indicated that the type of schools was associated with students' self-reported grades, F (1,133) = 697.991, $p < .001$. It explained 83.9% of the variance in students' self-reported grades and, based on the regression coefficient for school type (CBN = 0, SMP = 1), students at CBN self-reported higher grades, β = -.916, bootstrap CI = -4.155 – -3.569. Model B failed to explain a significant amount of variance in students' self-reported grades. Intrinsic motivation was not significantly associated with self-reported grades (0.1%), controlling for school type. The final model then explained a total of 83.8% (Adjusted R^2) of the variance in students' grades.

Exploratory Analysis 1. *Students' intrinsic motivation will be associated with mastery goal orientation.* Regression analyses for Model A (Table 5) showed that the type of school was associated with students' intrinsic motivation, F (1,133) = 8.328, $p = .005$. Type of school explained 5.9% of the variance in students' intrinsic motivation and, based on the regression coefficient for school type (CBN = 0, SMP = 1), students at SMP reported a higher mastery goal-orientation, β = .243, bootstrap CI = .136 – .637. Model B explained an additional 6.5% amount of variance in mastery goal-orientations, F(2, 132) = 9.790, $p = .001$. The regression coefficient indicated that, controlling for type of school, higher intrinsic motivation was associated with higher mastery goal orientation among students, β = .389, bootstrap CI = .136 - .637, and vice versa. The type of school coefficient became non-significant, β =.243, bootstrap CI = -.049 – .510 for this model. The final model explained a total of 11.1% (Adjusted R^2) of the variance in students' mastery learning goal orientation.

Exploratory Analysis 2. *Students' intrinsic motivation will be associated with performance approach goal orientation.* Regression analyses for (Table 6) for Model A and Model B showed no significant association between type of school or intrinsic motivation with performance-approach goal-orientations, explaining a non-significant 4% of the variance, $F(1,133) = .555$, $p = .457$ and $F(2, 132) = .006$, $p = .948$ respectively. Although the overall models were not significant, students at CBN had higher performance-approach goal-orientations, $\beta = .007$, bootstrap CI = -.278 – .292. The final model explained less than 1% (Adjusted R^2) of the variance in students' performance approach goal orientation.

Exploratory Analysis 3. *Students' intrinsic motivation will be associated with performance avoidance goal orientation.* Regression analyses for Model A (Table 7) indicated that the type of school was not associated with students' performance-avoidance goal-orientation, $F(1,133) = .628$, $p = .409$. Model B explained an additional non-significant .05% of variance, $F(2, 132) = .014$, $p = .915$. Based on the regression coefficient for school type (CBN = 0, SMP = 1), students at CBN had higher performance avoidance goal orientations, $\beta = .011$, bootstrap CI = -.303 – .333. The final model explained less than % (adjusted R^2) of the variance in students' performance avoidance goal orientation.

Because of the consistent association between school type and the measures, separate follow-up regression analyses were conducted to evaluate the hypothesis by individual school. The results indicated no change in patterns or associations, therefore the original findings cannot be attributed to school type.

Discussion

The purpose of this study was to evaluate the associations between students' perceived autonomy support (AS), their level of intrinsic motivation (IM) and academic achievement

(grades) in Malaysian classrooms. This study was based on Deci and Ryan's (1985) self-determination theory and posits that perceived autonomy support may influence students' intrinsic motivation in the Malaysian education context, and indirectly their academic achievement. In general, some findings were consistent with theory and the hypothesized relations while others were not.

Intrinsic Motivation, Autonomy Support, & Academic Achievement

As hypothesized (Hypothesis 1), there was a strong, positive correlation between perceived autonomy support (AS) and intrinsic motivation (IM), which was consistent with literature findings (Grolnick, Deci & Ryan, 1997; Ryan, Sheldon, Kasser, & Deci, 1996). Students' who perceived greater AS were more likely to also report higher levels of IM. The literature that supports the idea of AS supporting the development of IM in individuals is important in the Malaysian educational context because Malaysian students can be guided to develop competitive thinking skills in order for them to further develop their overall ability to think competitively and globally. The challenges they face in the new global working environment can only be supported by new skills that are supported by an autonomy supportive environment (Scott & Bruce, 1994; Kane, Berryman, Goslin & Meltzer, 1990). The high school classroom is an ideal environment in which Malaysian students can benefit from IM-AS relations because these adolescents are in their final years of school and are preparing to go into college and the working world; they could be more willing to work with their teachers to harness the advantages of AS-IM. Therefore the significance of AS and its relation to IM can help Malaysian students discover, explore, and invent new ideas, as well as sustain effort to prepare themselves to keep up with the continually changing work environment.

There were no significant correlations for Hypothesis 2 and 3, between IM and grades, and between AS and grades. These findings were unexpected as the research literature has generally found that both IM and AS have positive associations with academic indicators (Deci & Ryan, 1991; Grolnick & Ryan, 1987; Hardre & Reeve, 2003; Reeve, 2002). There could be several reasons for a lack of a significant association. First, the students in this sample, like most students in the Malaysian education system, have been educated in traditional classrooms that are more teacher-directed (e.g. teachers instructing and directing students' learning activities) instead of being provided with more individual autonomy. Second, the educational emphasis in Malaysian schools and societal expectations is on exam performance, which theory suggests would limit both IM and AS (Koestner, Ryan, Bernieri, & Holt, 1984; Reeve & Deci, 1996). Thus, the positive association between IM and AS suggests that the Malaysian educational context may not presently support the linkage between IM and AS and academic performance but can still have relevance in students' current educational environments as well as future work, culture and, life contexts.

The lack of a relation between IM/AS and grades could also be attributed to issues of measurement. An autonomy support measurement that looked into teachers' perspective could also be included to explore associations between students' perceived AS and teachers' perceived provision of AS. Further, the use of self-reported grades, for example, may not provide an adequate representation of students' academic achievement or performance. Thus, future research would need to include additional measures of students' academic achievement and performance. Because of the value placed on exam performance in Malaysia, it would be important to have indicators that do not solely rely on self-report in order to rule out associations

due to shared method variance. One possible measure could be scores from standardized examinations.

Additionally, it is proposed that a Confirmatory Factor Analysis (CFA) be performed on the constructs of IM and AS to better understand the nature of the latent constructs in the Malaysian context. CFA of a similar but larger sample, and even between western and non-western samples, could test the relationship between AS and IM and their underlying latent constructs in a Malaysian context. Performing a CFA that included western and non-western samples could provide a better understanding of whether cultural perspectives influenced the data gathered from the constructs. Any evidence of degrees of misfit in original Western-based samples could also be identified and explained. However, in the present study, a CFA was not conducted as it had been assumed that the measures used were valid measurements that measures of the constructs and because sample size for this analysis would be borderline for what is needed.

On a broader context, Malaysian students come into the classroom with preconceived ideas and goals of what education means to them. Many believe their learning has only one purpose, which is to obtain as many A's as possible. The Asian culture of high parental expectations of effort and academic results as indicators of that effort is prominent. Students learn from an early age that good academic results can be obtained with high persistence and effort and that family duty demands it of them to produce A's; there is less demand for learning activities to be interesting or to have a say in their learning processes. The assumption of teachers knowing what is best for their learning and to leave it to their teachers to make teaching and learning decisions is a common one. As a result, the lack of association between IM and AS and grades could be explained by this cultural demands and expectations.

The importance of AS and IM in this study goes beyond students' academic performance. They can also help teachers understand the importance of AS and IM. This study will help them be more aware of the relevance of AS in their classroom environment. They would be able to implement teaching plans and strategies that promote autonomy support that will help their respective students become more active participants of their learning process, as well as prepare these students for the working world. Therefore, future studies could use qualitative methods that included focus groups; these would involve a more in-depth study of the physical conditions of the classroom, teacher and student interactions/relationships, as well as the cultural influences that surround the students outside and inside the classroom.

Goal Orientations

As the study relied solely on self-reported grades, the researcher considered the possibility of an additional indicator, in the form of students' mastery learning goal orientations that was easily obtained from students. Therefore an exploration of the relation between AS and IM with students' goal orientations was included. Consistent with prior literature, the results indicate higher IM being associated with higher mastery goal learning orientation (Roeser, Midgley & Urdan, 1996). A possible explanation of this finding would be that intrinsically motivated students tend to develop self-competence and the inclination to contrast their present stage of success with previous success of their own (Pintrich, 2000a), as well as continued self-improvement (Butler, 2000).

Where an association was noted between IM and mastery learning goal orientation, it is interesting to note that students in SMP (less academically inclined students) and not CBN (more academically inclined students) had higher levels of intrinsic motivation and more were more inclined to have mastery learning goal orientations. The background and socio-economic status

of the SMP students suggest an internal drive to want to perform well in school in order to do well academically and break the cycle of poverty. In spite of SMP students' lower levels of achievement, the association between IM and MG seems to indicate that that these students value learning and are determined to learn and improve their competencies (Suarez, Cabanach, and Valle, 2001).

The findings between IM and performance-goal orientations (PG) showed no significant associations. The lack of association between IM and PG was inconsistent with prior research positing that students who had high IM tend to be more mastery learning goal oriented and less performance-goal oriented (Valle et al., 2007). When considering how critical a role high-stakes testing has in high-performing schools (CBN), this was not a surprise.

Therefore, it is suggested that a more detailed study into how mastery learning goal and performance-goal orientations can help Malaysian students should be carried out. Theoretically, a mastery goal-orientation is often treated as the 'best' or only predictor of academic achievement. However, the research literature suggests that both mastery learning goal and performance-goal orientations can positively influence achievement, and these goals could be complementary (Harackiewicz & Sansone, 1991; Meece & Holt, 1993; Wentzel 1991, 1993; Wolters, Yu, & Pintrich, 1996). Thus, when facing situations in which the learning activity is not very stimulating or interesting, it might be useful to find reasons other than intrinsic interest in the task to motivate their actions. In these cases, the opportunity to choose various motives such as getting others' approval (performance approach) to be a better incentive to maintain academic engagement (Pintrich, 2000b).

The assessment methods teachers employ in the classroom could also be a strong indicator of what they expect of their students in terms of learning. Summative exams in the

form of standardized examinations throughout the year are the norm in the Malaysian education setting. The classroom is also a reflection of this norm and students are continually tested at a summative level. Formative tests are not the norm as teachers find them too time-consuming to monitor one student at a time, at different levels, and at different proficiencies levels. However, research points to the advantages of formative assessment and how effective it is in helping students be more mastery learning goal oriented in their learning as well as improve their academic achievement levels in the process. The students would also be able to be more independent in their learning and self-determined (Phillips and Gully 1997; VandeWalle et al. 1999). A study with focus groups in the Malaysian education setting, on formative assessment's role in helping student improve academic achievement, will be more persuasive in helping teachers overcome reservations about a change in learning assessments formats. Once school administrators and teachers are convinced of how relevant it can be for the Malaysian context, formative assessments and mastery learning goal orientation, together with autonomy support could become the new norm.

Conclusion

Although there may be cultural and institutional variations on how the needs for autonomy, IM, and performance are supported, satisfied, and expressed, the literature supporting the importance of AS, IM and even mastery learning goal and performance-goal orientations in Western samples continues to indicate that Malaysians could benefit from them.

Intrinsically motivated students who rely on self-reward and mastery learning goals can be crucial elements to the learning process and to the experience of well-being. Autonomy supportive classroom environments will support Malaysian students to take a more active role in their learning, and allow students to be more responsible for their own learning. It is hoped that

when Malaysian classrooms become more autonomy supportive, the learning environment will be more conducive and students will have more meaningful learning experiences. It is hoped too that teachers and students will be more able to fully attend to and grasp the importance of AS and IM for their teaching and learning. An optimal Malaysian system of education would support both students' autonomy, and one which its evaluative system is able to equally support this move, thereby aiding students become more intrinsically motivated to learn.

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Tables

Table 1

Cronbach's Alpha, Mean, SD and Correlations *(N = 135)*

Variables	Cronbach's α	Mean	SD	1	2	3	4	5	6
1. Grades	-	4.33	1.996	-	-.211*	.069	-.063	.183*	-.298**
2. Mastery Goals	0.786	6.15	.758		-	.164	.157	.230**	.322**
3. Performance Approach Goals	0.678	4.22	1.243			-	.578**	.102	-.015
4. Performance Avoidance Goals	0.627	4.53	1.457				-	-.052	-.033
5. Perceived Autonomy Support	0.826	4.68	.887					-	.410**
6. Intrinsic Motivation	0.788	5.09	.927						-

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Table 2

Summary of Regression Analyses Predicting Intrinsic Motivation from Perceived Autonomy Support (N = 135)

	Model A		Model B	
Variables Entered	β	CI[1]	β	CI[1]
Model A				
Type of School (0 = "CBN")	.337*	.339-.989	.417*	.540-1.097
Model B				
Perceived Autonomy Support	-	-	.480*	.366-.634
Variance Explained				
Model A R^2	.114		-	
Model B R^2 Change	-		.224	
Total Adjusted R^2	.107		.328	

* $p < .05$
[1]Confidence interval based on 4,999 bootstrap samples.

Table 3

Summary of Regression Analyses Predicting Self-Reported Grade from Intrinsic Motivation (N = 135)

	Model A		Model B	
Variables Entered	β	CI[1]	β	CI[1]
Model A				
Type of School	-.916*	-4.168 - -3.566	-.921*	-4.214 - -3.546
Model B				
Intrinsic Motivation	-	-	.013	-.128-.188
Variance Explained				
Model A R^2	.840		-	
Model B R^2 Change	-		.000	
Total Adjusted R^2	.839		.838	

* $p < .05$
[1]Confidence interval based on 4,999 bootstrap samples.

Table 4

Summary of Regression Analyses Predicting Self-Reported Grade from Perceived Autonomy Support (N = 135)

	Model A		Model B	
Variables Entered	β	CI[1]	β	CI[1]
Model A				
Type of School	-.916*	-4.155 - -3.569	-.911*	-4.134 - -3.548
Model B				
Perceived Autonomy Support	-	-	.031	-.108-.239
Variance Explained				
Model A R^2	.840		-	
Model B R^2 Change	-		.001	
Total Adjusted R^2	.839		.838	

* $p < .05$
[1]Confidence interval based on 4,999 bootstrap samples.

Table 5

Summary of Regression Analyses Predicting Goal Mastery Orientation from Intrinsic Motivation (N = 135)

	Model A		Model B	
Variables Entered	β	CI[1]	β	CI[1]
Model A				
Type of School	.243*	.136-.637	.151	-.049-.510
Model B				
Intrinsic Motivation	-	-	.271*	.083-.367
Variance Explained				
Model A R^2	.059		-	
Model B R^2 Change	-		.065	
Total Adjusted R^2	.052		.111	

* $p < .05$

[1]Confidence interval based on 4,999 bootstrap samples.

Table 6

Summary of Regression Analyses Predicting Performance Approach Orientation from Intrinsic Motivation (N = 135)

	Model A		Model B	
Variables Entered	β	CI[1]	β	CI[1]
Model A				
Type of School	-.084	-.745-.457	-.087	-.655-.350
Model B				
Intrinsic Motivation	-	-	.007	-.278-.292
Variance Explained				
Model A R^2	.004		-	
Model B R^2 Change	-		.000	
Total Adjusted R^2	-.003		-.011	

* $p < .05$

[1]Confidence interval based on 4,999 bootstrap samples.

Table 7

Summary of Regression Analyses Predicting Performance Avoidance Orientation from Intrinsic Motivation (N = 135)

	Model A		Model B	
Variables Entered	β	CI[1]	β	CI[1]
Model A				
Type of School	.069	-.309-.713	.065	-.373-.753
Model B				
Intrinsic Motivation	-	-	.011	-.303-.333
Variance Explained				
Model A R^2	.005		-	
Model B R^2 Change	-		.005	
Total Adjusted R^2	-.003		-.010	

* $p < .05$
[1]Confidence interval based on 4,999 bootstrap samples.

Appendices

Appendix A – Letter of Intent for SMK CBN

Dear Parent(s)/Guardian,

I will be conducting a short survey with your child about his or her classroom experiences in school. Besides finding out about your child's perception of the classroom environment, I am also interested in finding out about your child's academic achievement and goals. The information that I receive will greatly help to increase the knowledge I have about your child's classroom experiences as well as enable me to use the information to create better learning experiences for your child. Your child's input will also help increase teachers' awareness of the learning environment your child is in. Your child's participation will be anonymous and will not require your child to provide any personal and private details (e.g. name.). Your child will also have the option to not participate in the study.

If for any reason, you may not wish your child to participate, you may contact the teacher-in-charge, Ms. Aceline Kam at 012-6583321 to withdraw your child from the study.

Thank you in advance for your kind understanding in enabling me to better improve your child's classroom experiences.

Ms. Sarah Tham Yuen San
Graduate student
M.S. Educational Psychology
KU School of Education
208 Joseph R. Pearson Hall
1122 West Campus Rd.
The University of Kansas

Appendix B – Letter of Intent for SMK Sri Permaisuri

Dear Parent(s)/Guardian,

I will be conducting a short survey with your child about his or her classroom experiences in school. Besides finding out about your child's perception of the classroom environment, I am also interested in finding out about your child's academic achievement and goals. The information that I receive will greatly help to increase the knowledge I have about your child's classroom experiences as well as enable me to use the information to create better learning experiences for your child. Your child's input will also help increase teachers' awareness of the learning environment your child is in. Your child's participation will be anonymous and will not require your child to provide any personal and private details (e.g. name.). Your child will also have the option to not participate in the study.

If for any reason, you may not wish your child to participate, you may contact the teacher-in-charge, Mr. Au Yeong at 012-6589415 to withdraw your child from the study.

Thank you in advance for your kind understanding in enabling me to better improve your child's classroom experiences.

Ms. Sarah Tham Yuen San
Graduate student
M.S. Educational Psychology
KU School of Education
208 Joseph R. Pearson Hall
1122 West Campus Rd.
The University of Kansas

Appendix C – Teacher's Script

Before Questionnaire

Please raise your hands if you need a pencil.

Please check that there are 5 pages to your questionnaire.

Please circle your gender and write the name of your school.

Do not put your name on the questionnaire. Your responses will remain completely confidential.

You may stop and return the questionnaire at any point in time.

The questions asked are related to your classroom experience this year.

Please read each question or statement carefully.

Place a "tick" in the appropriate response box.

If no response seems exactly right, fill in the box that is closest to what you want to say.

You may ask for my help if you have any queries about the questionnaire.

This questionnaire will take about 30 minutes to complete.

When you have completed your questionnaire, please place them in the envelope at the front of this hall.

By completing and submitting your questionnaire, you have provided assent to participating in this study.

Return pencils to the front.

The last student to complete the questionnaire is requested to seal the envelope, sign it and return the envelope to me.

Thank you.

You may begin now.

Appendix D – Student Assent Form

I am completing my Master's thesis study and would really appreciate your help in completing this questionnaire. I am interested in finding out what your general thoughts are about your classroom experiences in school this year. I would appreciate it if you could complete a questionnaire that will take no more than 30 minutes of your time. Your thoughts and opinions are very importance to me and will be treated with utmost confidentiality. You will not be required to provide any personal and private details.

Besides finding out about your perception of the classroom environment, I am also interested in finding out about your academic achievement and goals. The information that I receive will greatly help to increase the knowledge I have about your classroom experiences as well as enable me to use the information to create better learning experiences for you. Your input will also help increase teachers' awareness of the learning environment you are in.

If you don't feel like answering any questions, you don't have to, and you can stop and return the questionnaire to me anytime and that will be all right. I will be happy to answer any questions you may have now or later. If you are comfortable about participating, return the completed questionnaire to me.

Appendix E – Questionnaire

STUDENT QUESTIONNAIRE

GENDER: MALE / FEMALE
SCHOOL: _____

The following sections are related to your classroom and learning experience in your current year of study.

Please choose only ONE option for each of the questions below. Circle your response or place a ☑ on the appropriate box.

How far do you agree with the following statements that describe your learning goals?

	Strongly disagree	Disagree	Disagree a little	Neutral	Agree a little	Agree	Strongly agree
1. It's important to me that I learn a lot of new concepts this year.	1	2	3	4	5	6	7
2. One of my goals in class is to learn as much as I can.	1	2	3	4	5	6	7
3. One of my goals is to master a lot of new skills this year.	1	2	3	4	5	6	7
4. It's important to me that I thoroughly understand my class work.	1	2	3	4	5	6	7
5. It's important to me that I improve my skills this year.	1	2	3	4	5	6	7

How strongly do you feel about the following statements with reference to your teachers?

	Strongly disagree	Disagree	Disagree a little	Neutral	Agree a little	Agree	Strongly agree
1. I feel that my teachers provide me with choices and options.	1	2	3	4	5	6	7
2. I feel understood by my teachers.	1	2	3	4	5	6	7
3. I am able to be open with my teachers during class	1	2	3	4	5	6	7
4. My teachers convey confidence in my ability to do well in the class.	1	2	3	4	5	6	7
5. I feel that my teachers accept me.	1	2	3	4	5	6	7
6. My teachers encourage me to ask questions.	1	2	3	4	5	6	7
7. I feel a lot of trust in my teachers.	1	2	3	4	5	6	7
8. My teachers answer my questions fully and carefully	1	2	3	4	5	6	7
9. My teachers want me to submit my work on time.	1	2	3	4	5	6	7

Please tell me how much you enjoy or are interested in your classroom activities.

	Not true at all	Untrue	Somewhat untrue	Neutral	Somewhat true	True	Very true
1. I enjoy doing activities in class very much	1	2	3	4	5	6	7
2. The activities are fun to do.	1	2	3	4	5	6	7
3. I think the activities are boring. (R)	1	2	3	4	5	6	7
4. The activities do not hold my attention at all. (R)	1	2	3	4	5	6	7
5. The activities are very interesting.	1	2	3	4	5	6	7
6. The activities are quite enjoyable.	1	2	3	4	5	6	7
7. During the activities, I thought about how much I was enjoying doing them.	1	2	3	4	5	6	7

To what extent do you agree to the following statements?

	Strongly disagree	Disagree	Disagree a little	Neutral	Agree a little	Agree	Strongly agree
1. It's important to me that other students in my class think I am good at my class work.	1	2	3	4	5	6	7
2. One of my goals is to show others that I'm good at my class work.	1	2	3	4	5	6	7
3. One of my goals is to show others that class work is easy for me.	1	2	3	4	5	6	7
4. One of my goals is to look smart in comparison to the other students in my class.	1	2	3	4	5	6	7
5. It's important to me that I look smart compared to others in my class.	1	2	3	4	5	6	7
6. It's important to me that I don't look stupid in class.	1	2	3	4	5	6	7
7. One of my goals is to keep others from thinking I'm not smart in class.	1	2	3	4	5	6	7
8. It's important to me that my teacher doesn't think that I know less than others in class.	1	2	3	4	5	6	7
9. One of my goals in class is to avoid looking like I have trouble doing the work.	1	2	3	4	5	6	7

Please indicate how true the following statements describe your feelings when carrying out classroom activities.

	Not true at all	Untrue	Somewhat untrue	Neutral	Somewhat true	True	Very true
1. I do not feel nervous at all while doing the activities. (R)	1	2	3	4	5	6	7
2. I feel very tense while doing the activities.	1	2	3	4	5	6	7
3. I am very relaxed in doing the activities. (R)	1	2	3	4	5	6	7
4. I am anxious while working on the activities.	1	2	3	4	5	6	7

Please indicate what you think about the following statements.

	Strongly disagree	Disagree	Disagree a little	Neutral	Agree a little	Agree	Strongly agree
1. My teachers listen to how I would like to do things.	1	2	3	4	5	6	7
2. My teachers handle people's emotions very well	1	2	3	4	5	6	7
3. I feel that my teachers care about me as a person.	1	2	3	4	5	6	7
4. I don't feel very good about the way my teachers talk to me.	1	2	3	4	5	6	7
5. My teachers try to understand how I see things before suggesting a new way to do things.	1	2	3	4	5	6	7
6. I am able to share my feelings with my teachers.	1	2	3	4	5	6	7

Please indicate how true the following statements are about the amount of choice you perceive when you carry out classroom activities.

	Not true at all	Somew hat untrue	Untrue	Neutral	True	Somew hat true	Very true
1. I believe I have some choice about doing the activities.	1	2	3	4	5	6	7
2. I feel like it is not my own choice to do the activities. (R)	1	2	3	4	5	6	7
3. I don't really have a choice about doing the activities. (R)	1	2	3	4	5	6	7
4. I feel like I had to do the activities. (R)	1	2	3	4	5	6	7
5. I do the activities because I have no choice. (R)	1	2	3	4	5	6	7
6. I do the activities because I want to.	1	2	3	4	5	6	7
7. I do the activities because I had to. (R)	1	2	3	4	5	6	7

Please indicate which of the following best describes your mid-term examination results.

☐ Mostly A's	☐ Mostly C's
☐ Mostly A's and B's	☐ Mostly C's and D's
☐ Mostly B's	☐ Mostly D's
☐ Mostly B's and C's	☐ Mostly F's

ETHNIC GROUP: MALAY / CHINESE / INDIAN / BUMIPUTERA (Iban, Bidayuh etc) /
OTHER (please state)_____

Thank you for your kind cooperation.