Correlates of Extrinsic Goal Orientation and Self-Regulation of Students in a Science Class

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Abstract

The factors associated with extrinsic goal orientation and self-regulation in a science were tested in this study. These variables include study time, number (quantity) of learning materials, and educational attainment of parents and/or guardians. One hundred eighty one 7th grade students participated in the study. The students answered the Motivated Strategies for Learning Questionnaire (MSLQ) as a measure of their extrinsic goal orientation, and the Self-Regulation Questionnaire (SRQ) as a measure of their self -regulation. Results show that only the mother's educational attainment is associated with the extrinsic goals of the students. Data also indicate that among the variables tested, only learning materials and the parents' educational attainment, not only does self-efficacy influence learning and academic performance, it also influences the use of a variety of learning strategies to receive rewards, parental praises and other psychological accolade.

Keywords: self-regulation, goal orientation, self-efficacy

Studies in the 1980s and 90s presented a disquieting number of students disengaged from the instruction taking place in the classroom (Meece & McColskey, 1997). Luckily, educators have devised ways to curb the number since the 90s by giving students choice and control over the learning process. Such a move included an individualized curriculum where activities are authentic and related to student interests. When students are involved in their work, they persist despite challenges, and they take considerable pleasure in accomplishing their work (Schlechty, 2001 cited in Saeed & Zyngier, 2012).

Student engagement is concerned with the interaction between the time, effort and pertinent resources students put into to optimize their experience and enhance learning outcomes. Students are often times caught in a dilemma of keeping themselves sustained in class because they are going through a transition phase from grade school to their current grade level. Amongst the things they have to adjust include higher volumes of homework and long term projects; higher frequencies of tests and quizzes with harder content and higher stakes and to get everything done on schedule. Apart from adjustment to the new environment, students are sometimes put in a situation where they need to accommodate peer relationship, organize school work and express their feelings. Given the scenario, these students should be provided with explicit instruction on how to adjust to the next level of their academic journey.

The science classrooms in junior high school level provide a structure for whole class interactions that increase participation and sustain positive emotional energy. Demonstrations, experiments, creative engagements and the like are notable science strategies initiated by teachers to stimulate inquiry on the application of science principles and concepts. The science curriculum incorporate means for global responsibility, understanding and communication coupled with methodologies that provide appreciation for the world where learners play an active role in improving the latter; which is an explicit translation of the school's mission of producing leaners who are agents of social transformation.

Science teachers who are directly involved with students can benefit from the result of this study because it outlines factors needed to encourage maximum engagement from students. On the other hand, science teachers who are not handling the students can gain insights on how to better prepare their instructionrelated activities once the students get promoted to their level. Teachers need to learn key steps for guiding students toward developing self-regulation skills. Learners who lack self-regulation skills will fail in regulating their thoughts, emotions and behaviors that will deprive them to act appropriately.

These students have to be properly engaged in class activities that will foster sense-making through involvement or participation (Harper & Quaye, 2009). Teaching students how to appropriately express their feelings, understand the consequences of their actions and develop healthy relationships is important for strong student achievement. Much investigations have been conducted on extrinsic goal orientation and self-regulation among students but little is known on the factors affecting them in a science class. Hence, this paper was written to determine how

Social Cognitive Theory

The Social Cognitive Theory (SCT) developed by Albert Bandura in the 1960s suggests that learning takes place in a social context with the dynamic and mutual interaction of the person, environment and behavior. Bandura (1986) cited by Cole (2015) identified three different phases of the environment that influence the individual: the imposed, the selected and the constructed. In the imposed environment, the norms and settings that are prevalent control the individual but the latter is capable of controlling their own responses to the former (Bandura, 1986; Meaney, et. al. 2008). Further, Meaney et. al. (2008) noted that the selected environment is the outcome of how the individual chooses to respond to the norms and settings of the imposed environment while the constructed environment is produced from the reactions of the individual from the imposed environment to the choices made in the selected environment. In the classroom, these three settings are clearly evident in the research of Bang (2012). He noted that the imposed environment speaks about the policies a teacher establishes in class on individual work, for instance homework. The students constructed their selected environment with their decision of whether or not the individual work is completed; whereas, the constructed environment is developed when the teacher displays a specific behavior based on the output of the student. In conclusion, Bang (2012) posited that this particular scenario will shape the student's behavior in accomplishing future individual tasks. From the interactions noted in the research of Bang, self-efficacy or the belief an individual has in their ability to successfully accomplish a task is produced (Usher, 2009). The Social cognitive theory introduced the concept of self-regulated learning (Yangkim, 2009) as it emphasizes on social influence and its emphasis on external and internal social reinforcement.

When applying the social cognitive theory in the school setting, the behavior of students is the result of their own choices within the imposed school policies modelled by their teacher and administrators. Students' interactions with school policies help develop their self-confidence to succeed that, in turn, affects their academic motivation (Kitsantas, Cheena & Ware, 2011).

Student Motivation

Psychologists have noted two individual forms of motivation for students in doing school tasks: intrinsic and extrinsic. The former refers to an innate interest in pursuing a topic. Students find a subject pleasant and they naturally desire to learn mastery of it. Whereas, extrinsic motivation is characterized by the desire to pursue a subject for reasons of rewards, good grades and approval of parents, peer or teachers. Students are motivated to learn the subject mainly because they are pursuing something material or emotional in exchange of the effort invested in the tasks.

Students are more likely to invest effort into their own learning when they are encouraged to gain mastery of the subject, rather than aiming for the performance goal (Warmuth, 2014). Teachers need to always remember that they have a powerful effect on students' performance (Davis, 2009); therefore standards should be set high enough to challenge students and motivate them to be achievers.

Student motivation is an important factor to consider when developing a Science curriculum and teaching its competencies since a sense of fulfilment may contribute to student learning, engagement, lesson retention and ultimately student success. Terry (2002) emphasized that students' own motivation and learning directly affect time management and efficient use of resources to achieve academic success. In view of the importance of motivation, teachers need to develop stronger instructional context for motivational development.

Extrinsic Goal Orientation

Extrinsic motivation is a multidimensional construct characterized by four types of extrinsic behavioral regulation: external regulation, introjected regulation, identified regulation and integrated regulation (Ryan and Deci cited in Areepattamannil, 2011). External regulation is determined by stimuli external to the individual such as rewards or punishments. A student tends to perform a task to satisfy an external reward such spending a movie date with friends. An introjected regulation is a behavior affected partly by the environment and the sense of reward and punishment. A student performs well in class in order to get the appreciation of the class and in order not to disappoint the parents. This regulation is associated with low degree of self-determination (Areepattamannil, 2011). An identified regulation is seen in an individual who does a particular task by choice as he/she judges it to be important. A student is engaged in a task he/she acknowledges valuable and useful. Finally, integrated regulation pertains to behaviors that are incorporated in the person's schema. This highly advanced form of extrinsic motivation is closely linked with intrinsic motivation as there is a sense of autonomy or freedom. A student does a work well because it is congruent with his/her own values and needs.

A number of studies have documented the effects of extrinsic motivation on learning and student achievement. Students who work for rewards and other external contingencies are more likely to have lower academic achievement (cited in Wolters, et. Al. 1996; Lepper, et. al. 2005; Becker, et. al. 2010) and only engage in surface learning. Moreover, extrinsically motivated students experience greater anxiety, display less positive emotions in school and have poor ability to cope with failures (Deci & Ryan cited in Areepattamannil, 2011) because of the pressure of rewards & punishment. However, B.F. Skinner's behavioral model recognizes that extrinsic rewards can be used to increase task involvement and academic performance of nonperforming students (Urlaub 2002 cited in Williams & Stockdale 2004). Extrinsically motivated students produce good outputs in school because their achievements are valued by people who are significant in their lives.

Self-regulation

Self-regulation may be especially needed in the study of Science topics because the number of topics to be learned and tasks to be accomplished can overwhelm an undisciplined student. Self-regulation is the ability to monitor and control one's behavior in accordance to the best interest of the situation, consistent with personal values. Students who do not have the right attitude for science will find it difficult to adjust to the rudiments of the subject. Students, therefore, need to develop control over factors such as time and their physical environment in order to carry out tasks expected of them.

Zimmerman expanded Bandura's social cognitive theory by applying it in the field of education. This expansion led to the development of the selfregulation concept. Zimmerman described self-regulated learners as "metacognitively, motivationally and behaviorally active participants in their own learning" (Briley 2007). Zimmerman recognized that the quality and presence of actions depend on the person's beliefs and motives.

Pintrich (2004) noted that self-regulated learning is composed of strategies students use to regulate their cognition and control their learning. It is a construc-

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tive process where learners monitor and regulate their own motivation and behavior in order to achieve their goals. Environmental influences play key roles in the development of self-regulation strategies among students. For instance, students check their own work after a science problem drill to know how much of the items were answered correctly. This enactive feedback mechanism makes students determine if they should repeat checking the drill output. The students' action of checking their work was "initiated personally and implemented through the use of strategies and enactively regulated through perceptions of efficacy" (Zimmerman & Schunk 2011). When students are allowed to check their own work, they are given the opportunity to develop self-efficacy that makes them acquire the feeling of control over their learning. Effective learners know when a certain strategy is effective or not in regulating their own motivation and cognition. Thus, it is important that they are given means to deliberate strategies accordingly.

The Science program and curriculum are aimed at producing independent leaners. Students who are capable of regulating their own learning through external contingencies can become academically competent. Teachers' input in class does not solely affect the academic performance of students; the latter's ability to master their own learning contribute greatly to their achievement.

Theoretical Framework

Learning and motivation theories that highlight salient factors associated with student performance in class provided the framework for this research.

The benefit of the construct of academic motivation relies on its operational definition. Its indicator is seen to sustained task engagement that leads to good grades (Williams & Stockdale, 2014). The over-justification notion gives the idea that providing an extrinsic reward for engaging in a task tells that the latter must not be worth doing for its own sake (Lepper, Greene, & Nisbett, 1973 cited in Williams & Stockdale, 2014). Poor motivation and the absence of any learning strategy among learners (Ritu & Gope, 2011) can attribute to their poor performance in school. Students' motivation and engagement is determined by the time, energy and dedication they put in their tasks. The Social Cognitive Theory of Bandura (1986 cited in Ilker & Arslan, 2014) establishes the concept of self-regulation; which is necessary for individual and social forms of learning. Zimmerman (1989 cited in Ilker & Arslan, 2014) described these self-regulated learners as those who "actively participate in their own learning meta-cognitively, behaviorally and with motivation". According to Pascarella and Chapman (193 cited in Hardy, 2013) student involvement and engagement are pertinent to student persistence, in this case, academic performance. These learners tend to rely on their own merits to produce the needed learning environment and to organize themselves for learning (Mitra, 2004 cited in Ritu & Gope, 2011).

The social cognitive models of self-regulated learner (SRL) model of Pintrich (2004) acknowledges that personal and contextual factors impact self-regulated learner. The Social Cognitive Theory emphasizes the significance of self-regulation because it serves as a bridge between external factors and internal actions of an individual (Bandura, 1989 cited in McLeod 2016). Personal factors that influence SRL include demographic characteristics such as age, enduring traits & dispositions, self-belief & motivational beliefs and knowledge (Anthony, Clayton & Zusho, 2013). Pintrich further notes that learners find ways to make the learning environment more conducive and effective for studying. Extrinsic rewards may be mostly useful when students initially have minimal interest in an activity (Cameron, 2001). Unfortunately, for a variety of experiential reasons, some students are not inclined to engage in certain academic tasks that teachers deem valuable.

Duncan and McKeachie noted that a specific need advanced the development of an instrument that would assess student's motivation and learning skills; hence, the introduction of the Motivation Strategies Learning Questionnaire. The instrument was structured within a social-cognitive framework that does only assess learning strategies and motivation but also provide feedback for improving the identified factors.



Figure 1. Illustration of student's extrinsic goal orientation and self-regulation

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Statement of the Problem

This research aimed at answering the following questions:

- 1. Is there a relationship between extrinsic goal orientation and amount of time spent for studying, number of learning materials & educational attainment of father, mother or guardian?
- 2. Is there a relationship between self-regulation and amount of time spent for studying, number of learning materials & educational attainment of father, mother or guardian?
- 3. Is there a significant relationship between extrinsic goal orientation and self-regulation?

Scope and Limitation

The study involved students enrolled in Junior High School Unit. The extrinsic goal orientation subscale from the Motivated Strategies for Learning Questionnaire of Pintrich and McKeachi (1980s), was utilized to assess the students' extrinsic goal orientation. On the other hand, the Self-regulation Questionnaire developed by Brown, Miller and Lawendowski (1999) assisted the measurement of the selfregulation behaviour of students. Moreover, the risk involved in the study is minimal as respondents were only asked to answer checklists pertaining to extrinsic goal orientation and self-regulation.

Method

Research Design

A correlation research design was used in this investigation. It is a research design used to determine the extent to which two or more variables are related among a single group of people. A correlation has direction which can either be positive or negative and can differ in degree or strength of relationship.

Participants

A total of 181 students, ranging from 11-13 years old, participated in this study. The subjects were chosen because they comprise the newest population in the Junior High School and they are also transitioning to rigors of Junior High School from Grade School.

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Instrument

Items pertaining to extrinsic goal orientation from Motivated Strategies for Learning Questionnaire (MSLQ) were used to collect the data intended for the first variable. MSLQ is a self-report instrument comprising of 15 scales scored using a 7point Likert-type scale developed by William McKeachie and Paul Pintrich at the University of Michigan in the 1980s (Duncan & McKeachie, 2005). The instrument was developed as a data source that may be used to improve student learning. MSLQ is based on the assumption that motivation and cognition are learned processes under the control of the learner.

The Self-Regulation Questionnaire (SRQ) was originally developed by Brown, Miller and Lawendowski in 1999. It is a self-rating device aimed on measuring self-regulation of behaviour in the adult population. The tool is based in the seven-phase model of the processes of self-regulation of behavior developed by Kanfer in 1970 and Miller and Brown in 1991. The instrument uses a 5-point interval scale with end points 1 = strongly disagree and 5 = strongly agree, to assess statements. It is crucial to stress that the questionnaire measures the generic rather than the domain-specific self-regulation capacity of one's behaviour.

The demographic characteristics survey tool is a means to profile the participants of the study base on their attributes. Examining data by demographic factors can serve a number of purposes for researchers, program planners and the like.

Data Analysis

Scores obtained from the administration of the instruments were computed for demographic statistics. Extrinsic goal orientation and self-regulation items were calculated using the Pearson correlation.

Results and Discussion

Extrinsic goal orientation drives students to achieve something outside themselves; often associated with people's validation and approval of self-worth. The amount of time spent for studying does not offer enough justification that it is a variable for students to warrant attention from other people for commendation for their desire to get a good grade in the Science class.

Table 1.

Correlation between extrinsic goal orientation and study time, number of educational materials and educational background of parents/guardians

Variable	r coefficient /p value
Time spent in studying	r = 0.11/ p =.14
Learning materials	r = 0.11/p = .14
Highest Educational Attainment (Father)	r = 0.03/ p =.69
Highest Educational Attainment (Mother)	r =0.20/ p =.007*
Highest Educational Attainment (Guardian)	r =0.20/ p =.56

* Correlation is significant at p = 0.01

The 0.11 *r* value offered a weak relationship between extrinsic goal orientation and number of learning materials. This entails that the number of study materials for Science available at home does not automatically respond to students' desire to excel in the subject to get good grades, parental approval and other related rewards. Moreover, the latter also is not the primary reason for students' aspiration for rewards, rather how the learning material is purposely utilized to achieve their goal.

Meanwhile, extrinsic goal orientation and highest educational attainment of the father showed a positive yet very weak relationship. Fathers play an important role in the development and choices of their daughters. Fathers who are generous with their approval of their daughter's achievement can motivate further the latter to perform in class. The result presented in the table shows that the desire of students to have good grades, parental praise and the like is not entirely dependent on the educational background of the father. Students' positive performance in their Science class is sustained because of the lauds afforded by their fathers. Furthermore, studies have shown that if the father is affectionate, supportive, involved in the activities of their children and has good education background can positively affect the latter's cognitive, language, social development & academic achievement, a strong sense of well-being, good self-esteem and genuineness (Gross, 2014).

Extrinsic goal orientation and highest educational attainment of mother indicated a positive and fairly good relationship. Employed professional mothers who are actively engaged in parenting can improve children's outcomes in school (Forman, 2017). The availability of mothers to attend to their daughters' academic needs despite work schedule increases resiliency of children. These children enjoy the support of their professional, working mothers as they tend to increase the emotional maturity of former while reducing academic stress (Preethi, 2005 cited

in Min, 2013). Malik (2006 cited in Min, 2013) noted in a study that children with professional, working mothers obtained high mean score, which is a measure of academic performance, than children without working mothers. Sutherland (2015) pointed out that mothers with good education background dispenses affirmations more generously than less educated mothers. Students are extrinsically motivated to perform well in their Science class because they often receive commendations and rewards from their mothers for a good academic performance. These rewards are sought by students because when mothers provide support in their school works, they create a healthy, cultured and confident individuals (Bingham, 2014).

Finally, extrinsic goal orientation and highest educational attainment of guardians pointed out a positive and somewhat good relationship. These data were analyzed from 11 of the 181 respondents who live with their guardian/s. In the absence of biological or legal parents, guardians assume the responsibilities of ensuring that a child is looked after properly and that basic necessities like food, clothing, shelter, healthcare, education, recreation, spiritual care and the like are duly provided. Guardians inherently and directly teach their wards values, work ethic and life outlook. Just like professional, working fathers or mothers who spend time to attend to their children's academic needs, guardians in the same situation are found to have positively influenced their wards' academic performance. Students who live with their guardians see that the educational attainment of the latter is pertinent to their success in school. Students also sought to be praised and rewarded by their guardians because it increases motivation. A guardian with a high educational profile is looked upon by students under their care because the educational background serves as a model for future career choice.

Table 2.

Correlation between self-regulation and study time, number of educational materials, educational background of parents/guardians and extrinsic goal orientation

Variables	<i>r</i> coefficient / <i>p</i> value
Time Spent in Studying (TS)	r = 0.11/p = .14
Learning Materials (LM)	<i>r</i> = 0.16/ p =.03*
Highest Educational Attainment of Father (HEF)	$r = 0.16/p = .03^*$
Highest Educational Attainment of Mother (HEM)	$r = 0.23/p = .00^{**}$
Highest Educational Attainment of Guardian (HEG)	r = 0.06/p = .86
Extrinsic Goal Orientation (EGO)	$r = 0.30/p = .000^{**}$
* Correlation is significant at p = .05	
** Correlation is significant at p = 0.01	

Self-regulation is the competence to monitor and control ones behavior, emotion or thoughts. An individual can alter them in accordance with the demands of the situation. Self-regulation and the amount of time students spend weekly for studying for their Science class entailed a positive relationship. However, although the relationship is positive, it is weak. Study time allocation is necessary among students as it inculcates a sense of discipline. The ability to selfregulate with a good study plan makes students clarify their priorities and the requisite level of importance & effort needed in learning Science topics. Spending regular time for studying can reduce the level of stress during unannounced quizzes. The study of Basila (2014) suggested that time management and motivation are pertinent predictors of student academic success. Self-regulation sets in with study time when students are able to see that the latter allows them to personally adapt to the various learning tasks required by the subject in school. Sufficient time allotted for the Science class permits students to remain focused on learning despite other high activity levels and inherent potential distractions, like peer relationship.

Self-regulation and number of learning materials the respondents have for their Science subject presented a positive correlation but weak relationship. The common learning materials identified by the respondents in this study are Science books (apart from their textbook), maps, charts, gadgets like calculators, tablets, personal computers & smart phones, games, online materials and software. The most number of learning materials identified in the study is 7 and the least is 1. These educational materials are utilized by students to support learning that can increase academic success. Furthermore, they also provide opportunities for students to practice new skills and knowledge acquired in class. Students can learn better and accomplish any task assigned them in school (Weimer, 2010) with sufficient educational materials or access to the latter. Weimer (2010) continues that self-regulation assists in the learning process when learners are able to develop a plan to approach the task assigned them with the support of available learning materials.

A positive yet weak relationship is shown between self-regulation and highest educational attainment of father. Self-regulated learners are able to manage their thoughts, behaviors and emotions to profitably steer their learning experiences (Zumbrunn, Tadlock, & Roberts, 2011). The ability to adapt to the school environment and classroom routines may be influenced by parental support. The study of Hossler, Schmidt and Vesper (1999 cited in Hawkins, 2015) indicated a positive relationship between the level of parental education attained and the educational

aspirations of high school students. Further, it noted that parents with college diploma (or higher) value education and transfer those values to their children. Fathers with good academic standing have a strong influence in preparing their daughters for their future careers while in high school. This influence allows their daughters to be self-regulated individuals because father-daughter collaborate to solve problems in pursuit of a clearly defined goal. Fathers with adequate academic background can encourage self-regulation among their daughters because their educational experiences help overcome challenges throughout their lifetime.

Self-regulation and highest educational attainment of mothers pointed out a positive and relatively strong relationship. Cognitive skills, grades and educational attainment of children are closely linked with their parents' level of education. A mother's educational level is notable to the academic outcomes of their children on various levels (Sutherland, 2015). In the sphere of parenting, mothers with a college degree (or higher) are able to capitalize on their knowledge and skills in making their children emotionally and socially adept. As a consequence of this parenting, self-regulated individuals are molded. College-educated mothers are "able to more appropriately tailor cognitively stimulating activities to their children's developmental level" (Sutherland, 2015) which work hand-in-hand with selfregulation development because children are able to outgrow impulsive behaviors. Mothers who have completed a college degree (or higher) have impacts on the education and behavior of their children (Hawkins, 2015). Moreover, the author also noted that a mother's education is one of the most important factors in influencing the achievements of their children in school as they have access in providing their children with cognitive & language skills and the ability to transform their mental abilities into academic skills.

Self-regulation and highest educational attainment of guardians of the 11 respondents presented a positive but very weak relationship. These students possess the skills to monitor & control their own behavior, emotions and thoughts in order to be competent in school partly because of the influence of the educational background of their guardians. Engagement (regardless of educational attainment) of guardians in students' academic life greatly affect the latter's performance. Homes where guardians are proactive in school works can expect a performing ward. These students have control over their schedule and learning tasks are adequately arranged to ensure mastery of what is being studied. Self-regulated learners demonstrate strong self-efficacy and the interest to learn which do not necessarily arise from the influence of the academic background of guardians.

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Finally, extrinsic goal orientation and self-regulation indicated a positive correlation. Precursors of self-regulation develop early in life. Young children show awareness of social demands in their environment, *e.g.* following orders of adults. As they grow older, they regulate not only their behavior but their emotions and problem solving strategies. Extrinsically motivated learners are able to self-regulate in order to receive the desired awards and affirmations. Students who espoused the ability to focus on besting others have found to have higher levels of self-efficacy (Pintrich et al., 2001).

Students who are able to regulate their emotions, behaviors and thoughts show a positive pattern of motivational beliefs that include receiving tangible rewards (Puente-diaz & Cavazos, 2017). Extrinsic goal orientation is necessary when intrinsically motivated behavior in a learner declines. Rewards and reinforcements can help students identify the reason of engaging in an activity. Once they are rewarded or commended for a good performance in school, these learners put so much importance to the role of the rewards in their behavior. Extrinsically motivated learners are able to self-regulate in order to perform a specific behavior to accomplish a task.

Students who come to the Junior High School unit must be engaged academically and socially to keep their interest sustained. The academic and nonacademic curricula of the unit providentially offer sustenance both to their academic needs and interests. Providing an environment for motivation for students to be engaged in all aspects of their school life is a challenge among educators despite a well-designed curriculum. For Science in particular, students find difficulty in keeping up with instructions that call for solving complex, real world problems, relating prerequisite knowledge and skills to the current topic and understanding scientific concepts and relating them to real-life events, to name a few.

This study implies that Science teachers need to accommodate the natural curiosity and interests of students in the world around them by understanding the extrinsic orientation goal and self-regulation of students. The data offer a valuable help to improve or enhance the existing Science curriculum and provide self-diagnosis of strengths and weaknesses for the students. This research assessed the extrinsic orientation goal and self-regulation of learners which can be valuable for future platform of the Science teachers to explore teaching methods that will strengthen the learning environment of all students in the unit. Identifying the extrinsic orientation goal and self-regulation can enable administrators and faculty understand how they affect academic grades so that they can promote conditions

that will encourage the former. Administrators in particular, must be attentive to well-intentioned education policies and programs that will inspire their teachers to create environment that stimulates academic achievement.

Conclusion and Recommendations

The payoff for extrinsically motivated behavior offers an essential role for students' performance in class as it increases interest in classroom activities. It can also exert a strong influence on human behavior when engaged in particular activities. Self-regulation is regarded as adopting powerful strategies for attaining goals or achieving in class.

The results of this study indicated that extrinsic goal orientation collaborate to promote self-efficacy among students in their Science class. It is perceived that study time, number of educational materials and educational background of parents/guardians have a positive correlation to both extrinsic goal orientation and self-regulation of students. Not only does self-efficacy influence learning and academic performance, it also influences the use of a variety of learning strategies in order to receive rewards, parental praises and other psychological accolade.

The ability to control and monitor one's behaviors, thoughts and emotions and use them to appropriately as the situation demands exert their effects directly in the academic performance of learners. Self-regulated learners are capable of using strategies that eventually result in better classroom performance, *e.g.*, a student experiencing success after dealing a challenging problem in computing work and power. This self-regulated strategy has a favorable effect to teachers and other students as it reduces disruptive behavior while increases teacher's appreciation of the student.

This study, while exploratory in nature, is indicative of the mechanisms of extrinsic goal orientation students can derive from to be self-regulated learners. Influences of home learning milieu, parental academic status and classroom culture are keys in understanding the many facets of self-regulation and extrinsic goal orientation. Knowing these are keys to illuminating how to promote self-regulated who aspire for tangible and psychological rewards.

Teachers look forward every year to teach students all kinds of academic concepts and skills that would make them successful in learning through purposeful engagement. The results of this study posited the following recommendations: sup-

port for self-regulated learning should be integrated into various classroom instruction and not taught separately; teachers need recognize that students are active interpreters of the learning arena whose interpretation of information mediates what they learn and therefore important in curriculum review, designing and revision. Teachers could also raise the level of awareness of parents/guardians in guiding their daughters towards academic performance by providing their daughters/ wards with the necessary means to be self-regulated learners while appreciating their efforts through tangible or psychological rewards. Finally, Insight and awareness on paternal, maternal and guardian academic status on their daughters/ wards' extrinsic goal orientation and self-regulation have to be made known to posit achievement in school

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