ACADEMIC INTRINSIC MOTIVATION AND METACOGNITION: A STUDY OF THE INTERNATIONAL ISLAMIC UNIVERSITY MATRICULATION STUDENTS' FEELING TOWARDS THEIR LEARNING PROCESS

BY

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INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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ABSTRACT

The purpose of this study was to investigate the relationships between a set of predictors of Academic Intrinsic Motivation (including Self Determination, Goal Orientation and Perceived Value) and their consequences on students' involvement in Fundamental Knowledge for Matriculation courses (FKM). It also aimed to investigate the relationships between Intrinsic Motivation and students' performance and metacognition strategy used.

A total of 471 2nd year students (233 males and 238 females) were selected following stratified random sampling. Hypothesized relationships of Academic Intrinsic Motivation and its predictors were then tested by using Structural Equation Modeling. Results of the analysis revealed that Self Determination construct (Self Efficacy, Autonomy and Relatedness), Goal Orientation construct (Mastery, Performance and Avoidance) and Perceived Value construct (Utility, Instrumentality and Religiosity) were significant determinants of student's Intrinsic Motivation in FKM courses. The results also showed that Goal Orientation was the major predictor of intrinsic motivation, followed by Self Determination and then Perceived Value. It was also found that intrinsic motivation positively related to students' performance and reciprocal relationship existed between intrinsic motivation and metacognition.

Furthermore, the results also provided evidence of good model-data fit. There were no any offending estimates, such as negative variance. The relevant goodness of fit indices exceeded the recommended critical value. Specifically, GFI was estimated at .95, AGFI .92, IFI .96, TLI .96, NFI .93, CFI .96 and RMSEA .06.

A Multivariate Analysis of variance (MANOVA) was also conducted to examine the differences of Academic Intrinsic Motivation across gender. The results of the MANOVA supported the notion that female students were more oriented towards Intrinsic Motivation than male students, and that males slightly outperformed females in religiosity factor, while there is no gender difference in metacognition factor. This means that while males were more instigated due to religion element, females were more motivated due to utility, instrumentality, mastery and performance goals factors.

ملخص البحث

استهدفت هذه الدراسة استقصاء وجهات نظر طلاب المركز الإعدادي بالجامعة الإسلامية العالمية في ماليزيا نحو وجود علاقة بين مجموعة من متنبئات الدافعية الداخلية الأكاديمية (وتشمل: الإرادة الذاتية، التوجه نحو الهدف، وإدراك القيمة الأكاديمية)، وإقبالهم على دراسة المواد الأساسية في المركز. كما استهدفت دراسة العلاقات بين دافعيتهم الداخلية من ناحية ونجاحهم الأكاديمي والاستراتيجية المستخدمة لماوراء الإدراك من ناحية أخرى.

وفي هذه الدراسة أجرى الباحث استبيانا شمل عينة من المبحوثين عددعم 471 طالباً من طلاب السنة الثانية في المركز (233 من الذكور و238 من الإناث). استخدم الباحث العينة العشوائية المطابقة ليعادل عدد الذكور وعدد الإناث. اختبر الباحث العلاقات المفترضة بين الدافعية الداخلية ومتنبئاتها باستخدام طريقة تحليل التوازن البنائي النموذجي، حيث أشار التحليل إلى أن الإرادة الذاتية وما تحتوي عليه من مكونات أساسية (الاعتداد بالنفس، والاستقلال، والانتماء) والتوجه نحو الهدف وما يتضمن من مكونات أساسية (التمكن من الهدف، والهدف الأدائي، وهدف تجنب العمل) وإدراك القيمة الأكاديمية وما يحتوي عليه من مكونات رئيسية (المنفعة العاجلة، والمنفعة الآجلة، والتدين) هي متنبئات ذات مغزى للدافعية الداخلية لطلبة المركز الإعدادي لدراسة المواد الأساسية. كما أثبت البحث بالتحليل العلمي أيضاً أن التوجه نحو الهدف هو المتنبئ الرئيس للدافعية تليه الإرادة الذتية، ثم أخيراً إدراك القيمة الأكاديمية.

من أهم النتائج التي توصل إليها البحث إقامة الدليل على ملاءمة البيانات لطريقة تحليل التوازن البنائي النموذجي، نظراً لعدم وجود تقييم يناقض ذلك. كما أن مؤشرات الملاءمة التي تدل على مدى مناسبة البيانات لتحليل التوازن البنائي النموذجي، قد جاوزت الحد المقترح من قبل

الإحصائيين، من حيث الدقة، فإن GFI وصلت إلى 98.، AGFI 92.، IFI 96.، TLI 96.، NFI 93.، CFI 96.، و RMSEA 06.

أخيراً استخدم الباحث تحليل التباين متعدد المتغيرات التابعة لتحليل الفروق الجنسية في الدافعية الداخلية، وأظهرت نتيجة التحليل أن الإناث أكثر درجة في الدافعية الداخلية من الذكور، لكن الذكور يتفوقون قليلاً على الإناث في مكون التدين. وتؤمئ هذه النتيجة إلى أن التدين هو الحافز الأساس لإقبال الذكور على التعلم، إما المكونات الأخرى مثل: المنفعة العاجلة، والمنفعة الآجلة، والتمكن من الهدف، والهدف الأدائي فهي البواعث الحقيقية لدافعية الإناث.

APPROVAL PAGE

This thesis of Mikail Ibrahim has been examined and approved by the following:

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Declaration Page

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or currently submitted as a whole for any other degrees at IIUM or other institutions.

Mikail Ibrahim

Signature…… Date…….....

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DECLARATION OF COPYRIGHT AND AFFIRMATION OF FAIR USE OF UNPUBLISHED RESEARCH

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…… ……

Signature Date

This Dissertation is dedicated to my beloved parents; Ibrahim Soliu and Maryam Soliu (Al-Batul) for their love, courage, support and sacrifice for me.

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CONTENTS

List of Tables

Table no Page no

List of Figures

Figure no Page no

CHAPTER ONE

INTRODUCTION

BACKGROUND OF THE STUDY

Motivation, as viewed from an educational perspective, has been debated and studied theoretically and empirically since the 1950s (White, 1959; Hurt, 1963). It is defined as a tendency, incentive and desire to engage in a task for a certain reason. Moreover, it is a process which is concerned with arousing, directing and sustaining behaviour (Ames & Ames, 1984). Motivation has been a central discussion among psychologists due to its strong relations with the biological, cognitive, and social regulation factors and its consequences on human behaviours (Ryan & Deci, 2000a). It is considered as a multidimensional phenomenon because people have various explanations for the engagement in an activity, the different levels of inclination and the type of motivational orientation. In the concept of self-determination theory, two distinctive types of motivational orientations; intrinsic and extrinsic have been emphasized. Intrinsic motivation is a genuine motivation which emerges from a personal inclination or incentive towards a specific task for the natural enjoyment aroused from involvement in the activity per se, while extrinsic motivation refers to an engagement in an activity to attain a specific goal or as an instrumental means to an end (Deci & Ryan, 1985; Deci, Vallerand, Pelletier & Ryan, 1991; Pintrich & Schunk, 2002; Rust, 1977; Ryan & Deci, 2000a; 2000b).

Gagne and St Pere (2002) quoted Edison's famous saying, "Genius is 1% inspiration and 99% perspiration" (p.21). There is a common English proverb, "whenever there is a will there must be a way". These two phrases connote human

philosophical belief that intrinsic motivation plays a significant role in a human's life activities especially in the learning process. Many educators and developmentalists advocated that the learning process should be an active process in which learners would be the active participants before learning could take place. They also believed that learning would occur optimally when learners were intentionally willing to be involved and assimilate information (Grolnick & Ryan, 1987) or when they are volitionally interested in learning activities.

Volitional interest or inner arousal in a task is what psychologists have referred to as intrinsic motivation. Intrinsic motivation has been defined in various ways, however, all definitions implied that intrinsic motivation is the willing engagement in an activity without being compelled or instigated by external prod, encouragement or rewards. Rather, the reward is derived from the pleasure and involvement in the activity itself (Koestner, Zuckerman & Koestner, 1987; Ryan & Deci, 1987; Deci & Ryan, 1985; Vallerand, Fortier & Guay, 1997; Vallerand, Bissonnette, 1992; Wu, 2003; Pintrich & Schunk, 2002). Self-determination theory claims that when a person is involved in an activity or a task without any reward or being compelled to do so that person was acting of his/her own volition or intrinsic motivation (Ryan & Deci, 2000a).

On the other hand, psychologists contrast intrinsic motivation with another type of motivation that is referred to as extrinsic motivation (Ryan & Deci, 2000a; 2000b). Extrinsic motivation refers to an engagement in an activity because of an interpersonal or intrapersonal force. To be more specific, the motive in this situation is instrumental or a means to achieve a targeted goal (Deci, 1998). If an individual acts based on an extrinsic motive, he/she is not naturally interested (wholly willing) to engage in the task but rather compelled to do so by his/her inner or outside forces.

Thus, there are psychological conflicts and pressures between what a person is doing and what he wants to do (Deci, 1998). This conflict and pressure leads to discontinuity of the task after the origin and the cause of pressure have been eliminated. Therefore, it is not unreasonable speculation to argue that after the reinforcer is removed from the task, the involvement will either stop or the quality of the engagement will become shallow and trivial due to lack of unification between the "want to" (personal interest) and "have to" (force to do) (Deci, 1998).

Although both types of motivation have been considered as contraries, they are not according to Printrich and Schunk's (2002) independent phenomena in nature, in which when one phenomenon is higher the other is lower. Rather, both can be high in a person or low according to the situation and the nature of the object. They are also liable to change from time to time depending on the personal, psychological or environmental conditions (Printrich & Schunk, 2002).

The conceptualization of intrinsic motivation shows three types of intrinsic motivation; (a) intrinsic motivation to know (b) intrinsic motivation to accomplish (c) intrinsic motivation to stimulate (Vallerand, Pelletier, Blais, Briere, Senecal & Vallieres, 1992). The first type refers to the inner arousal to be involved in learning task(s) for the satisfaction one feels or earns in learning, exploring new ideas, and understanding new things. Intrinsic motivation to accomplish means an intention to engage in a learning task for the pleasure the learner experienced when trying to achieve particular goal(s). The third type is labeled as intrinsic motivation to stimulate. It is a type of intrinsic motivation that an individual experiences when he/she tries to "experience stimulating sensation" such as sensory pleasure, aesthetic experiences and excitement which emerged from his/her involvement in the tasks (Vallerand et al., 1992, p.601). Convincing empirical studies have supported the

strong relationship between the conceptualization of intrinsic motivation and performance, creativity, information processing, and the quality and quantity of learning acquisition (Gottfried, 1985; 1990; Lloyd & Barenblatt, 1984; Vallerand & Bissonnete, 1992; Moneta & Siu, 2002).

Furthermore, intrinsic motivation also has a strong relationship with metacognitive strategies use (Pintrich & DeGroot, 1990). Intrinsically motivated learners are found to be engaged in more metacognitive activities than non-intrinsically motivated ones. According to Pintrich and DeGroot (1990), knowledge of cognition and metacognition is not a sufficient determinant of students' performance, but rather intrinsic motivation is the fundamental requirement of achievement and metacognitive strategies used. He also contended that intrinsically motivated learners were those who engage in metacognitive strategies by monitoring, planning and continually evaluating their progress and performance. He found that intrinsic motivation was correlated with self-regulation and that metacognition had been considered to be one of its major components.

In cognitive models of motivation, effort and persistence for academic tasks partially resulted from the various beliefs, attitudes and perceptions of the students such as self-efficacy, goals, and task value belief. There is much convincing evidence to support the speculation based on the self-efficacy theory which states that reciprocal relationships exist among goals, competence (self-efficacy), personal control, task value belief and intrinsic motivation (Leach, 2003; Wu, 2003). As an example, prior studies which explored motivational beliefs found that students who exhibit greater task value, enjoy freedom, and adopt a learning goal tended to display higher intrinsic motivation and greater use of strategies that were designed to regulate

students' cognitive and metacognitive engagement in academic tasks (Wu, 2003; Wolters & Rosenthal, 2000).

Moreover, metacognition is defined as "the ability to reflect upon, understand, and control one's learning" (Schraw & Dennison, 1994, p.460). It functions as a controller of cognitive strategies to handle learning tasks effectively by deliberately and consciously managing, monitoring, assessing, initiating, directing and executing cognitive processes (Zimmerman, 1989). The ability to use metacognitive strategies efficiently will help students to plan, regulate and execute the plan on their own for the betterment of the learning activities rather than relying on teachers or parents or other agents of instruction (Zimmerman, 1989). According to Nik Suriana Nik Yusuf (2001), students who use metacognitive strategies in their academic struggle are likely to become flexible, effective and independent learners. Metacognitive strategies were found to be strongly and positively related to students' academic performance, persistence and intrinsic motivation (Pintrich, 1990). According to the theory, learners tend to improve their learning strategy by comparing and experimenting with different strategies and developing an appropriate metacognitive knowledge about how, when and why these strategies could be used to improve performance (Carr & Jessup, 1995). The intrinsic motivation and metacognition thus, reciprocally influence each other and lead to the employment of appropriate metacognitive strategies to solve the targeted academic tasks and generate continued intrinsic motivation for similar learning activities (McCombs, 1988).

Nevertheless, it was suggested that there are some psychological needs that must be satisfied before intrinsic motivation could be elicited (Ryan & Deci, 2000a; 2000b; Skinner & Belmont, 1993; Deci & Ryan, 1985). Self determination, goal orientation and perceived value are the determinants of intrinsic motivation (Deci &

Ryan, 1985; Ryan & Deci, 2000a; Pintrich, Marx, Boyle, 1993; Eccles & Wigfield, 1995; Ferrer-Caja & Wiess, 2000). The degree to which learners' fundamental psychological desires and environmental factors are fulfilled or ignored in the school content is echoed in their self-system processes (attitudes and belief about the self) (Skinner & Belmont, 1993) and consequently reflects on their engagement in their learning activities. They (Deci & Ryan, 1985; Ryan & Deci, 2000a) asserted that the environment would be conducive for intrinsic motivation to emerge if learners were given a choice to decide on and participate in classroom policy, and if they felt related to their instructors and peers. Skinner and Belmont (1998) in their study contended that the decline of motivation in the academic content was associated with psychological and environmental factors because motivation is not merely biological.

This assumption had been empirically studied and findings indicated that if these antecedent variables (self-determination, goal orientation and perceived value) were satisfied, learners tended to be more intrinsically motivated and voluntarily willing to engage in learning activities for the sake of knowledge itself. Recently, Ferrer-Caja and Wiess (2000) broadened the scope of the predeterminants (predictors) of intrinsic motivation. They (Ferrer-Caja & Wiess, 2000) tested a wide range of variables that they hypothesized could predict learners' intrinsic motivation which were not included in Deci and Ryan's assumption. These variables were perceived competence (self-efficacy), goal orientations, autonomy, motivational climate, and teaching style. Consistent with their hypothesis, the study found that almost all these predictors strongly or moderately predicted intrinsic motivation. Therefore, they concluded that, intrinsic motivation led to the devotion of effort and persistence especially in physical education, which was the focus of their study.

In relation to perceived value, studies (Pintrich, Marx, & Boyle, 1993; Eccles & Wigfield, 1995; Husman & Lens, 1999; Human, Derryberry, Crowson, & Lomax, 2004; Husman, McCann & Crowson, 2000) found a strong relationship between perceived value and intrinsic motivation. Although these studies demonstrated that perceived value, which consisted of utility and instrumentality or endogenous instrumentality and exogenous instrumentality, could be viewed as extrinsic motivation because tasks are done basically due to their utility, it was found that both types of perceived value correlated with intrinsic motivation.

Instrumentality or endogenous instrumentality, a dimension of perceived value, refers to a learner's perception that the completion of an academic task will increase the probability of achieving a specific goal in the long term such as taking mathematics to become an expert engineer or a psychology course to become a pioneer psychologist (Human, Derryberry, Crowson, & Lomax, 2004; Eccles & Wigfield, 1995; Eccles & Wigfield, 2000; Human & Lens, 1999). On the other hand, utility or exogenous instrumentality means the significance of a task in hand for nearer future goals such as taking a maths class to fulfill a requirement for a science degree (Wigfield & Eccles, 2000). The learner in this situation is not fascinated with or interested in mathematics but it is a means of achieving a specific goal in the nearest future or for immediate benefits.

Research suggested that students with greater perceived value (instrumentality or utility), self-determination, and learning goal orientations tended to display greater use of strategies which were designed to regulate their metacognitive and cognitive engagement in academic tasks (Wolter & Rosenthal, 2000; Pintrich, Marx, & Boyle, 1993; Eccles & Wigfield, 1995; Pintrich, 1999). Furthermore, Sansone, Weibe and Morgan (1999) found that students who thought that working on boring academic