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Learner-Centered Practices (LCP) and Students' Intrinsic Motivation: The Case of the Hashemite University, Jordan

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ABSTRACT

The authors examined the relationship between Learner-Centered Practices (LCP) and Students' Intrinsic Motivation (IM) and Midterm Grades (MG). Random sample (N= 971) (584 females, 387 males) of Hashemite University graduate and undergraduate students completed Learner-Centered Practices Students' Perceptions Inventory (LCPSPI) (McCombs and Whisler, 1997), and Intrinsic Motivation Inventory (IMI). The results showed significant correlations between students' (LCPSPI) scores and their intrinsic motivation (IMI) scores ($r= 0.46$, $p<0.01$), between (LCPSPI) scores and Midterm Grades (MG) ($r =0.31$, $p<0.01$), as well as between (IMI) and (MG) scores ($r = 0.20$, $p <0.01$). In addition, results revealed that the two levels (high – low) of exposure to learner-centered practices lead to differential effects on intrinsic motivation (IMI) scores ($t =13.42$, $p<0.001$), and on the midterm grades (MG) (t=8.56, $p<0.001$); that the highest and lowest 27% students' scores on intrinsic motivation yielded significant differences on MG ($t=5.48$, $p<0.001$). In addition, the results provide further evidence for gender, year and college significant effects on students' perceptions of teaching practices and intrinsic motivation.

KEYWORDS: Correlational Study; Learner-Centered Practices (LCP); Learner-Centered Practices Students' Perceptions (LCPSPI); Intrinsic Motivation (IM); Self-Determination Theory (SDT); Cognitive Evaluation Theory (CET); Academic Achievement, Midterm Grade (MG); The Learner-Centered Battery (LCB); Male and Female Undergraduate and graduate College Students-Hashemite University; Gender, year and college specialization.

1. INTRODUCTION AND THEORETICAL BACKGROUND

A critical purpose of university education is to prepare students for their future professional lives. Meeting this purpose requires energizing their motivation to learn, supporting students in developing deep understandings of their disciplines and in honing their critical thinking abilities. Helping students "think like a professional in the field is at the heart of learner- and learning-centered education at the college level" (Thompson, Licklider and Jungst, 2003).

The present study focuses on college students' perceptions of their teachers' Learner-Centered Practices (LCP), their intrinsic motivation and academic achievement that can be enhanced through the implementation of instructional behaviors based on Learner-Centered Psychological Principles (LCPs) (McCombs, 2001, 2003a; McCombs and Whisler, 1997; Pierce, Holt and Kolar, 2004).

The Learner-Centered Psychological Principles (LCPs) provide a holistic framework that integrates social constructivist and cognitive theories, as well as motivational and individual differences theories (Thompson et al., 2003). Educators used these to better align classroom practice with the rapidly expanding knowledge about how learning occurs. In an active motivating and collaborative supportive learning environment, specific instructional techniques are used, identifying similarities and differences in strategies, to enhance students' thinking and learning skills. The theoretical justification for these practices comes in part from self-determination theory [SDT] (McCombs and Whisler, 1997). Self-Determination Theory provides a framework that helps in seeing the importance of student perceptions in shaping how teacher practices affect

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schooling outcomes (Deci and Ryan, 1985). This theory emphasizes development of intrinsic motivation by support for individuals' autonomy, competence and relatedness (e.g., Deci, Vallerand, Pelletier and Ryan, 1991).

Therefore, this study represents an initial attempt to examine the relationship between learner-centered practices, students' intrinsic motivation to learn and academic achievement among Hashemite university students. In order to conceptualize the relationship between these variables, Self-Determination Theory [SDT] approach to motivation (Deci and Ryan, 1985; Deci et al., 1991; Friderick and Ryan, 1995; Ntoumanis, 2001; Vallerand, Deci and Ryan, 1987) is used as a theoretical framework. In particular, most of learner-centered practices derived from this theory (McCombs and Whisler, 1997). This theoretical perspective has been applied successfully to education and has shown the important role of different types of motivation in inducing a number of different cognitive, behavioral and affective outcomes. Accordingly, in the next section, a brief description for the perspective of learner-centered education and self-determination theory that stressed the importance of intrinsic motivation in learning domain will be presented.

Learner-centered education couples a focus on individual learners in terms of their heredity, experiences, perspectives, backgrounds, talents, interests, capacities and needs, with a focus on learning in terms of the best available knowledge about learning and how it occurs and about teaching practices that are most effective in promoting the highest levels of motivation, learning, and achievement for all learners (McCombs and Whisler, 1997: 9).

Accordingly, Learner-Centered Practices (LCP) seek to foster opportunities for learners to draw on their own experiences and interpretations (McCombs, 1997; Wagner and McCombs, 1995) and align with the constructivist perspective (Schuh, 2003). LCP proposes that teachers need to understand the learner's perspective and must support capacities already existing in the learner to accomplish desired learning outcomes. Learning goals are then achieved by active collaboration between the teacher and learners who together determine what learning means and how it can be enhanced within each individual learner (McCombs, 1997, 2003b; Thompson et al., 2003).

Based on previous research on teaching and learning, the American Psychological Association Task Force on Psychology in Education, 1993, provides a framework for Learner-Centered Psychological Principles (LCPs) and acknowledges the uniqueness of each individual's prior learning as an important factor in learning (Alexander and Murphy, 1998). These principles are factors that influence all learners, both inside and outside the classroom and provide an integrated perspective of learning, with a holistic view of the learner (e.g., Schuh, 2003). McCombs (1995) suggests that the 14 LCPs lead to a new model for teacher practice to facilitate learning and motivation. This Learner-Centered Model (LCM) "provides a perspective which is based on an understanding of the nature of the individual learner ... and what we know about learning" (p: 10).Woolfolk (1995) interprets the LCPs as an attempt to make sure that students are active learners using a variety of learning strategies in solving problems and discovering important ideas. McCombs (1993) suggests that there is a reciprocal relationship between students and teachers (i.e., students and teachers as co-learners sharing power and control) in a learner-centered classroom, especially when promoting motivation and higher order thinking.

The learner-centered framework is consistent with Self-Determination Theory (SDT). This theory provides a framework that helps us see the importance of student perceptions in shaping how teacher practices affect schooling outcomes (Deci and Ryan, 1985). Recently, a number of researchers have stressed that in order to develop a comprehensive picture of how schooling affects students, we must attend to their own perceptions of classroom practices (Daniels, Kalkman and McCombs, 2001; Powdrill, Just, Gracia and Amador, 1997). Indeed, it is likely that students pick up on and respond to aspects of classroom life that might not be captured in the reports written by teachers or observers. Further, how students receive and interpret the interactions between themselves and their teacher may determine whether a particular type of teaching practice has a positive or negative effect. This effect depends greatly on the students' feeling that their needs for relatedness, autonomy and competence are being met.

According to Deci and Ryan (1985) the innate psychological needs of autonomy (the belief that one is the origin and regulator of his or her actions), competence (the belief that one can efficaciously interact with the environment), and relatedness (the seeking and development of secure and connected relationships with

others in one's social context) underpin self-determined motivation theory. That is, the extent to which these mediating needs are fulfilled by what is available from the learning context influences the extent to which the motivation adopted by the individual is considered self-determined (Standage, Duda and Ntoumanis, 2003). The importance of self-determination is highlighted by the effects of situational factors on intrinsic motivation. Situational factors that affect feelings of self-determination include the way a task is presented, the degree of choice the potential participant perceives, others' expectations and respect for the person, the conditions for accomplishing the task, and whether the person will be evaluated (Bumpus, Olbeter and Glover 1998).

Deci and Ryan's (1985) depict intrinsic motivation as the energizer of the organismic integration process through which elements of one's internal and external worlds are first differentiated and then integrated harmoniously with one's existing structures. The integrative process requires exploratory behaviors to provide the development of competencies. The exploratory behaviors are typically intrinsically motivated; if they actually lead to the development of competencies, they in turn enhance intrinsic motivation. Environments that provide optimal challenges, support for autonomy and competence feedback facilitate exploratory behavior and promote intrinsic motivation, whereas environments that provide excessive or insufficient challenges, penalize autonomy and provide controlling feedback discourage exploratory behavior and thwart intrinsic motivation (Giovanni and Siu, 2002).

(SDT) argues that behavior can be broadly categorized as intrinsically motivated, extrinsically motivated or a motivated. Intrinsically motivated behaviors are the prototype of autonomy (Black and Deci, 2000), which can occur without external rewards, are undertaken out of interest in the activity rather than the outcomes of the activity, and are optimally challenging and characterized by the experience of interest, enjoyment, challenge, and curiosity (Amabile, Hill, Hennessey and Tighe, 1994; Deci and Ryan, 2000).

In contrast, extrinsically motivated behaviors are evident when the activity is carried out as a means to an end, not for its own sake, to receive a reward or other form of recognition (Deci and Ryan, 1985; Deci et al., 1991). Both intrinsic and extrinsic motivations predict students' involvement in academic tasks (Pintrich, 2003).

Lastly, a motivated behavior can be found in situations where individuals are neither intrinsically nor extrinsically motivated. A motivation refers to situations where individuals perceive no contingencies between outcomes and their actions, where they experience feelings of incompetence and uncontrollability. The different styles of self-regulation motivated behaviors (Ntoumanis, 2001; Vallerand, Pelletier, Blais, Briere, Senecal and Vallieres, 1993) in learning as Ryan and Connell (1989) identified and conceptualized them as falling along a continuum of internalization are: external regulation, introjected regulation, identification and integration.

Students who are externally regulated are said to be doing their schoolwork to stay out of trouble, to avoid teacher's anger or because of salient externally imposed constraints. Students who have an introjected regulatory style focus on doing their schoolwork for approval or to avoid negative self-related feelings, such as guilt or shame. Students who have an identified style of regulation experience actions as initiated out of their own values or choices and, thus, would perform schoolwork out of a personal sense of the meaning of learning. The highest level of internalization is integration, where external regulations integrated into a flexible, coherent hierarchical system of motives and values (Ntoumanis, 2001).

Cognitive Evaluation Theory (CET), which developed from self-determination, presents two components necessary for favorable expectations (Bumpus et al., 1998; Deci and Ryan, 1987, 1992). One is believing oneself to be competent or at least capable of learning, so that the task would be a pleasant experience. A second component involves a feeling of self-determination, which includes a perception of free choice and control over what one does. A feeling of personal causation seems to be a crucial component of intrinsic motivation.

Moreover, goal orientations (i.e., performance or ability vs. task mastery) (see, Ames, 1992; Ben-Ari and Eliassy, 2003) which are emphasized by teachers, influence greatly students' intrinsic motivation (Ames and Archer, 1988). If students perceive that their teachers emphasize ability and competition, they are likely to adopt ability-focused goals; when students feel that their teachers value task mastery, they are likely to adopt task-focused goals. The goals adopted by students related to many psychological outcomes. For example, students who pursue task-oriented goals tend to use deep cognitive

processing strategies and to continue to be interested in a task after formal instruction is completed, while the opposite holds true for students who pursue ability goals (Powdrill et al., 1997).

Considerable past research provided consistent body of both correlational and experimental supports for the critical role of instructional practices- derived from (SDT) (Deci et al., 1991) that is supposed to be included in the Learner-Centered Model (LCM) (McCombs and Whisler, 1997). For example, Deci, Schwartz, Sheinman and Ryan (1981) and Grolnick and Ryan (1987) reported that students who perceived the classroom as autonomy supportive were more likely to be intrinsically motivated for learning than students who did not perceive autonomy support in the classroom. The effects of choice in a learning task (e.g., autonomy support) on intrinsic motivation have been also provided by Cordova and Lepper (1996).

In experimental studies, competence support has been examined in different ways. For example: Skinner, Wellborn and Connell (1990) reported that students were intrinsically motivated when they perceived teachers as providing clear goals and contingencies for learning. These contingencies can be viewed as competence support because they permit students to perceive that they are gaining knowledge, learning skills and becoming competent. Regarding relatedness support in the classroom, Skinner and Belmont (1993) documented that teachers' involvement (operationalized as teachers' knowledge about students), caring for students' welfare and attention to students' learning process were associated with students' cognitive engagement (e.g., self-perceived competence, effort and persistence in school work).

Moreover, a sizable body of research suggests that learning, social and emotional outcomes for college students are enhanced by classroom contexts that are learner-centered. Lauer, McCombs, and Pierce (1998) (as cited in Pierce et al., 2004), based on results from 77 instructors and 1134 students from three universities, reported that instructors' learner-centered beliefs were positively correlated with their students' perceptions of their learner-centered classroom practices. Furthermore, students' perceptions were correlated more strongly with student motivation than were instructors' perceptions. McCombs (2001) examined ratings of 41 faculty members by 893 students and reported that students in higher education develop their own perceptions of their instructors' practices, and these perceptions affect their motivation. Furthermore, self efficacy, task mastery goals, performance goals, state epistemic curiosity, and active learning strategies were all positively correlated with five domains of learner-centered practice. The domains were: establishes positive interpersonal relationships; adapts to class learning needs; facilitates the learning process; provides for individual and social learning needs; encourages personal challenge and responsibility.

Finally, in support of the LCP model, Weinberger and McCombs (2002) (as cited in Pierce et al., 2004) found that college students' perception of classroom practices and student motivation were positively correlated with their achievement. Furthermore, student perceptions account for 45 to 60% of the variance in learner-centeredness.

Reflecting on the history of this research we may conclude from the previous review that many psychologists and researchers were seeking to find adequate answer to the repeated question of why are some students eager to engage (intrinsically motivated) in classroom activities, whereas others devalue and disengage from the learning process. While Researchers (e.g., Cordova and Lepper, 1996; Wentzel, 1997) of achievement motivation attribute these distinct motivational orientations to intrapersonal cognitive processes, others (e.g., Lauer et al., 1998; McCombs, 2001; Skinner et al., 1990; Weinberger and McCombs, 2002) have attributed a powerful role to learner-centeredness and teaching and instruction (situational factors).

In view of the aforementioned importance of Learner-Centered Practices (LCP) in empowering students' motivation, and in an attempt to expand the previous research on the effects of LCP on students' intrinsic motivation and academic achievement, the focus of the present investigation concerned the role of teaching style based on learner-centered instructional practices in presumably fostering a high level of students' intrinsic motivation in classroom activities.

Purpose of the Study

The purpose of the study was threefold:examining the relationship between learner-centered practices of college teachers as determined by student perceptions, their intrinsic motivation perceptions and their academic achievement, examining whether different levels (high-

low) of perceived exposure to learner-centered instructor will lead to significant different levels of intrinsic motivation, or lead to significant different levels of academic achievement, as well as whether different levels (high-low) of intrinsic motivation will lead to significant different levels of academic achievement and finally, examining whether any of complementary independent variables: gender (male, female), college specialization (humanity, science) and year level (first, second, third, senior and graduate [calculated together]), will affect significantly the two dependent study's variables (learner-centered students' perceptions, and students' intrinsic motivation).

2. METHOD

Study Sample

The study sample consists of (971) college students, both undergraduate and graduate students (387 [40%] male and 584 [60%] female), ranging in age from 17-40 years (*M= 19.52, SD= 3.10).* Students who were enrolled in different college programs at Hashemite University were selected randomly using the probability proportional to size (p.ps) sampling method. This random sample represents 10% of the university's ten humanity and science college population, which consists of 9466 students, 3973 (42%) male and 5493 (58%) female students (Hashemite University -Admission Department statistics 2002-2003).

The students represented different academic specializations (*humanity [N=505*]; *science [N=466]),* and year's levels *(first, [N=417]; second [N=271]; third [N=196]; senior and graduate [N=87*].Simultaneously, the participants who responded to the study instruments were (971) students who completed both the Learner-Centered Classroom Practices Students' Perceptions Inventory (*LCPSPI)(Appendix A)* (adapted from The Teacher Belief Survey [part 1]; Learner-Centered Battery, [LCB]); (Fasko, Grubb, Jesse and McCombs, 1997; Loser, 2001; McCombs, 2003a;McCombs and Whisler, 1997), and Intrinsic Motivation Inventory (IMI) (*Appendix B),* (mostly adapted from Work Preference Inventory {Student Form} [WPI]; Amabile et al., 1994).

The two inventories were administered in one setting by trained interviewers under the supervision of the authors at the end of the first semester 2002/2003 school year, to the participating students in their formal classrooms settings, under neutral, un-timed conditions as an extra-credit option to be completed along with the college's standard course evaluation forms.

Design and Procedures: We adapted and designed the two study's measures (LCPSPI; IMI) to assess the students' perceptions of their teachers' classroom behaviors and strategies and their own intrinsic motivation. Translations of instruments that appeared originally in English were initially accomplished by the first and second authors, and then by a person who is highly fluent in both Arabic and the scales' language. The participants were instructed to choose any favorable, enjoyable single course in which they were currently enrolled and to answer all questions only as they pertained to that course. The participants were specifically instructed not to choose any course with multiple instructors.

Sets of statistical analyses were conducted in this study by using SPSS-Package for Windows Version (10.0), a bivariate correlation coefficients for students' scales data to determine if the learner-centered practices students' perceptions scores on (LCPSPI) scale will correlate significantly with their perceived intrinsic motivation scores on (IMI) scale, and with students' self-report Midterm Grades (MG),t-test to find out the significance of differences between means of two levels (highest 27% and lowest 27%) of (LCPSPI) scoreson academic achievement grades (IMI) and (MG), and the significance of differences between means of two levels (highest 27% and lowest 27%) of (IMI) on (MG), and an exploratory An Analyses of Variance (ANOVA) to determine the effect of independent variables: gender (males; females); college specialization (humanity; science); year level (first; second; third; senior and graduate [were calculated together]), on the two dependent variables:Students' Perceptions of Learner-Centered Practices, and Students' Intrinsic motivation.

The Original Study's Measures and Their Psychometric Properties

The Teacher Belief Survey [part 1]: The Learner-Centered Practices Students' Perceptions Inventory [LCPSPI] was adapted for the purpose of the present study from The Teacher Belief Survey [part 1] ;Learner-Centered Battery [LCB] (Fasko et al., 1997; McCombs and Whisler, 1997). Initially, the Learner-Centered Battery (LCB), which was used to predict high quality teaching (i.e., reliably differentiate effective from less effective teachers) (Fasko et al., 1997),was developed

from the theory and research base represented in the Learner-Centered Psychological Principles (LCPs) (McCombs, 2003a),so as to assess teachers' beliefs about learners, learning and teaching; teachers' perceptions of their classroom practices in domains of practice identified in the LCPs' Principles, and students' perceptions of teacher classroom practices in these same domains. The Teacher Belief Survey measures two primary variables: (1) [Part I] Teacher beliefs, assumptions, and (2) [Part II] Teacher assessment of classroom practices. The Teacher Belief Survey [part 1] contained35statements(i.e., Item *1*: " Students have more respect for teachers they see and can relate to as real people, not just as teachers;"; Item *17*: "It's just too late to help some students") that measure LCPs' beliefs using a 4-point Likert-type scale. The factors assessed in Parts I and II of the Teacher Survey are based on research by McCombs (1995, 1997, 2003a), and verified in a national validation of the survey with over 660 middle schools (Fasko et al., 1997).

Reliability coefficients for the teacher subscales ranged from 0.43 to 0.80; and for the student subscales, reliability coefficients ranged from 0.71 to 0.92, indicating modest to high internal consistency for these measures. A MANOVA test student subscales was significant, ($F (15, 578) = 12.870, p < 0 .001$) indicating an overall effect for the effective versus less effective teacher classification with regard to the battery (Fasko et al., 1997; McCombs, 2003a).

The Work Preference Inventory (WPI)

In order to assess students' intrinsic motivation to learn, we used (WPI) [Student form] (Amabile et al., 1994). The Work Preference Inventory (WPI) was designed as a direct, explicit assessment of individual differences in the degree to which adults perceive themselves to be intrinsically and extrinsically motivated toward what they do, and to directly assess intrinsic and extrinsic motivations. Moreover, this tool includes not only self-perceptions of competence and self-determination needs, but also the entire range of cognitions and emotions that are proposed to be part of intrinsic or extrinsic motivation. Thus, the inventory consists of 30 statements (i.e., Item 26: "I enjoy trying to solve complex problems"; Item 30: "What matters most to me is enjoying what I do") for which respondents indicate to what extent each statement is for them, on a 4-point Likert scale ranging from 1(never or almost true for me) to 4 (always or almost always true for me).

Amabile and her colleagues (1994) in their validation study to develop the (WPI) proposed that each item is scored for its primary scale, Intrinsic Motivation, IM (15 items) or Extrinsic Motivation, EM (15 items), and its secondary scales, Enjoyment (IM, 10 items), Challenge (IM, 5 items), Outward (EM, 10 items) or Compensation (EM, 5 items). Mean scores are calculated for each scale, with the highest possible mean being 4.0. Participants in this validation study were *(1,363*) undergraduates [*499* men and *864* women]. The internal consistency reliability indices of scores values for the two primary were *0.77* and *0.79*, respectively, and for the four secondary were *0.71 to 0.78*, scales of the student version. These scales reliabilities were slightly lower than the generally accepted *.80* cutoff value. In contrast, the test-retest reliabilities coefficient values for periods from 6-54 months were quite high, mostly in the *0.70s* and *0.80s.*

Study's Measures Descriptive, Validity and Reliability

Learner-Centered Practices Students' Perceptions Inventory (LCPSPI): The Learner-Centered Practices of Students' Perceptions Inventory (LCPSPI) which consists in its final Arabic version of 34 statements, was adapted and modified from The Learner-Centered Battery (LCB) [The Teacher Beliefs Survey {part 1}](Fasko et al., 1997; Loser, 2001; McCombs and Whisler, 1997), and aimed to assess the study sample students' perceptions of their teachers' practices in the same domains of practice as in the Teacher Beliefs Survey (Parts 1).The items are parallel to teachers' items, but are written from the student's perspective, such as "My teacher helps me feel good about my abilities"; "My teacher encourages me to express my personal beliefs and feelings".

Intrinsic Motivation Inventory (IMI): We used Work Preference Inventory (WPI) (Student Form) (Amabile et al., 1994), to develop a tool to assess students' intrinsic motivation. Intrinsic Motivation Inventory (IMI) consists in its final Arabic version of 39 statements adapted from the same inventory, and other scales (Harter, 1981; Waugh, 2002), which were modified according to judges' recommendations. The pilot study which was undertaken to attain the validity and reliability of measures (LCPSPI; IMI) used in the present study showed the following results:

Validity and Reliability of the Measures: To verify the validity of the two inventories (LCPSPI; IMI) first we

asked a group of students (20 students, male and female) to report about the clarity of the statements of the two instruments. In addition,content validity was supported by a panel of judges (10 of psychology and educational psychology college teachers from Hashemite University) with expertise in learner-centered approach's practices and intrinsic motivation perspective to rate the appropriateness of the two instruments after they were provided with the operational definition for each study variable (Learner-Centeredness Practices and Intrinsic Motivation). The final forms of the two instruments used in the present study were as follows:

1. Learner-Centered Practices Students' Perceptions Inventory (LCPSPI): This inventory consists in its final Arabic version of (**34**) statements, 15 of them (Items 5, 8,9,11,12,14,15,20, 21, 23, 25,26,28,30,33) were reversed scored. Each of the (34) items in the measure was endorsed on a 5-point Likert-type scale anchored by strongly disagree and strongly agree. The items represented a collection of **(a)** students' perceptions of teachers' beliefs about learners, learning and teaching**, (b)** students' perceptions of teacher classroom practices in domains of practice identified in the Learner-Centered Psychological Principles (LCPs) (McCombs and Whisler, 1997). Scores ranged from 170-34. The correlation coefficients (test-retest reliability) for a period of six weeks were obtained, and it was 0.77. We also performed statistical analyses, mainly correlational analysis, between the (LCPSPI) and (IMI) scores of the pilot study's sample (*N= 400*) for validation purposes, which reveals a statistically significant positive correlation (*r=0. 493, p<0.01*), and was interpreted as an indicator of the validity of scores from both instruments, matching the theoretical and research framework (e.g., Patrick, Hisley, Kempler and College, 2000; Ryan and Deci, 2000).

2. Intrinsic Motivation Inventory (IMI): This inventory was mostly derived and adapted from the (WPI) [Student Form], (Amabile et al., 1994).In the present study, we used the same content validation procedures mentioned earlier for the previous instrument. Therefore, the Intrinsic Motivation Inventory (IMI) consists in its final Arabic version of (39) items, 15 of them (items 2, 4, 6, 9, 10, 12, 14, 15, 18, 19, 21, 24, 25, 29, 31) reversed scored. Each of the (39) items in the measure was endorsed on a 5-point Likert-type scale anchored by strongly disagree and strongly agree. The items represented a collection of student's perceptions of his/her interest and enjoyment and challenge in attaining the academic tasks in a specific course. Scores ranged from 195-39. Correlation coefficients for the test-retest reliabilities for a period of six weeks have been calculated and revealed a coefficient of 0.73.

The two inventories were combined in the same folder, with a cover sheet including some demographic data about age, sex, level of study (first, second, third, senior and graduate]), college specialization ([Humanity: Economics, Art and Science, Educational Sciences, etc…]; [Science: Engineering, Allied Health Science. Nursing, etc…]), midterm (first or second) grade, and were presented to the respondents simultaneously.

Academic Achievement Midterm Grades (MG**):** Each participating student was asked to report the Midterm Grade (MG) he/she obtained in the course he/she chooses to assess. We assumed and we knew that the midterm grades typically would range from 0-20.

3. RESULTS

The present study examined the relationship between learner-centered practices of teachers as determined by students' scores on (LCPSPI) and their intrinsic motivation's scores on (IMI**)** and their achievement Midterm Grades (MG); whether the differences will be significant between means of two levels (highest 27%-lowest 27%) of (LCPSPI**)** scoreson: (IMI) and (MG) scores; and between means of two levels(highest 27% and lowest 27%) of (IMI) scoreson (MG); and finally, whether any of complementary independent variables: gender (male, female), college specialization (humanity, science) and year level (first, second, third, senior and graduate [*calculated together*]), will significantly affect the two dependent study's variables (learner-centered students' perceptions and students' intrinsic motivation).

Firstly, in order to examine the relationship between learner-centered practices of teachers as determined by students' scores on (LCPSPI) and their intrinsic motivation's scores on (IMI) and their achievement Midterm Grades (MG), Pearson correlation coefficient for bivariate correlation was computed between students' scores. Results yielded statistically significant positive correlations between scores of students *(r= 0.46, p< 0.01),* on both scales (LCPSPI) (IMI); between scores of students (*r= 0.31, p <0.01*), on both scales (LCPSPI),

(MG) and between scores of students (*r= 0.20, p <0.01*) on both scales (IMI) (MG). The descriptive statistics and correlations are shown in Tables (1) and (2).

Table 1.: Means (M) and Standard Deviation (SD), of the study's scales.

Scales	No. of Respondents	M	SD
(LCPSPI)	971	114.00	22.16
(IMI)	971	127.43	21.59
(MG)	971	14.51	3.61

Table 2.: Bivariate Correlation Coefficients (r) for the study's scale.

Scales		(IMI)	(MG)
(LCPSPI)	---------	0.46*	0.31*
(IMI)		----------	0.20*
(MG)			

* p<0.01

To interpret the relationship between learner-centered, intrinsic motivation and academic achievement, we calculated the coefficients of determination, (R squared (r2) = *0.21; 0.10; 04, respectively*). Accordingly, we may attribute 21**%** of variance in students' intrinsic motivation to the perceived learner-centered of their teachers' practices, 10% of variance in academic achievement to the perceived learner-centeredness of their teachers' practices, and 4% of variance in academic achievement is due to students' intrinsic motivation.

Secondly, the (t-test) was conducted to examine the significance of differences between the highest 27% (*N=262*) and lowest 27% (*N=262*) students' scores on (LCPSPI) on (IMI) scores, and on (MG); and the highest 27% (*N=262*) and lowest 27% (*N=262*) of students' scores on [IMI], on (MG). For the highest and lowest 27% students' scores on LCPSPI, the results showed significant differences (*t =13.42, p<0.001*) between means of (IMI) scores and a significant differences (*t*=8.56, *p<0.001*) between means of (MG) scores (See Table3). These results stressed the relationship between students' perceptions of teachers' learner-centered practices, their intrinsic motivation and academic achievement. In addition, for the highest and lowest 27% students' scores on (IMI), the results yielded significant differences (*t= 5.48, p<0.001*), between means of (MG)(See Table 3). This result reflects the impact of students' intrinsic motivation on their academic performance.

These three results are consistent with the previous result considering the positive correlation between (LCPSPI), (IMI) and (MG). The statistical results are shown below in Table (3).

Thirdly, in order to determine the best variables (gender, college, academic year), that presumably will affect students' perception of learner-centered practices used by their teachers [dependent variable, no.1], and students' intrinsic motivation [dependent variable, no.2], we performed An Analysis of Variance (ANOVA) procedures, **first** for the dependent variable, no.1 [LCPSPI]students' scores × The Independent Variables:2 types of Gender(male-female) × 2 college specializations(humanity – science) × 4levels of year (first, second, third, and senior and graduate [*calculated together*]); **second** for the dependent variable, no.2[IMII]students' scores × The Independent Variables:2 types of Gender (male-female) ×2 college specializations (humanity – science) × 4levels of years(first, second, third, and senior and graduate [*calculated together*]).

First: Results of the statistical analyses of the Learner-Centered Practices Students' Perceptions Inventory (LCPSPI) means of scores (*see Appendix C ; Table 4a*),showed that there was a statistically significant effect for **gender** *(f (1, 955)= 6.424,p<0.05*), in favor of females (*115.08),* compared to their male counterparts *(112.66*). In addition, there was a statistically significant effect for **year** level (*f (3,955) =4.805, p<. 0.001*), in favor of students in the senior and graduate years (*122.89),* compared to students in the third, second and first years *(115.10; 114.97; 111.26*) respectively. Post hoc contrasts (Scheffé test) showed that students in the senior and graduate years perceived their teachers' practices as learner-centered significantly higher than students in first year (*p<0.0001*), and second year (*p <0.035*).

Furthermore, there was a statistically significant main effect for the interaction of (gender × year × college) (*f (3,955) = 3.952, p<0.001*), on [LCPSPI] students' scores [see Table4]. The results of different paired interactions are graphed and illustrated in Figures (1, 2 and 3). The effect of a disordinal interaction (gender x year) is reflected on graph in figure (1) by the divergence from parallel of the separate curves; the graph confirms that male students (*M=115.10)* slightly outperform female students (*M=114.88*) in the second year. In contrast, female students slightly outperform male students in the first (*M=111.31; 111.18*) year, and largely in the third (*M=117.98; 110.84)* and senior and graduate (*M=126.50; 116.38*) years; hence, the graph reveals that the interaction between gender and year is significant (Tuckman, 1999).

Table 3.: t-Values, for the two levels (highest 27%- lowest 27%) of Learner-Centered Practices (LCPSPI) on (IMI) and on Midterm Grades (MG), and the two levels (highest 27% - lowest 27%) of Intrinsic Motivation (IMI) on (MG).

Scale	No. of Participants	M	SD	Std.E	*t*
(IMI)/LCPSPI					
Highest 27%	262	140.25	20.50	1.26	
Lowest 27%	262	115.72	20.87	1.27	13.42*
(MG)/LCPSPI					
Highest 27%	262	15.4612.7	3.33	0.20	8.56*
Lowest 27%	262	0	4.00	0.25	
(MG)/IMI					
Highest 27%	262	15.16	3.54	0.21	5.48*
Lowest 27%	262	13.35	4.10	0.25	

* $p<0.001$

Table 4.: The Results of Analyses of Variance (ANOVA) Tests of between –Subjects Effects of (LCPSPI) Scores.

Source	Sum of Squares	DF	Mean Square	F	p
College	225.164	1	225.164	.472	0.492
Gender	3062.927	1	3062.927	6.424*	0.011
Year	6872.782	3	2290.927	4.805**	0.003
Gender × Year	3609.991	3	1203.330	2.524	0.056
Gender × College	785.880	1	785.880	1.648	0.200
Years ×College	1984.118	3	661.373	1.387	0.245
Gender × Year × College	5653.577	3	1884.526	3.952**	0.008
Error	455347.516	955	476.804		
Total	13125062. 000	971			

** p<0.05, **p<0.001*

Figure1: The Paired Interaction (Gender [2] x Year [4]) on Learner-centered Practices [LCPSPI]

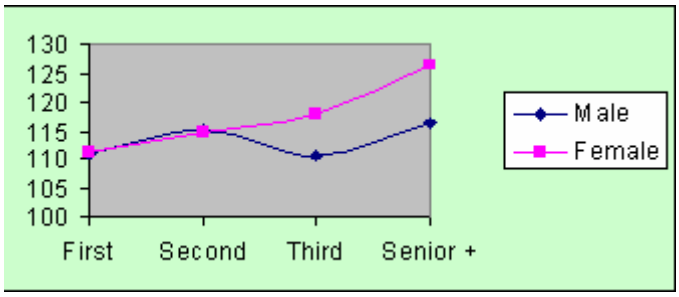


Figure 2: The Paired Interaction (Gender [2] x College [2]) on Learner-centered Practices [LCPSPI]

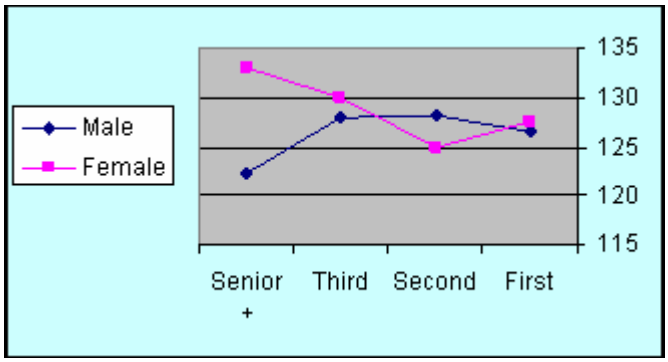


Figure 3: The paired Interaction (Year [4] and College [2] on Learner-centered Practices [LCPSPI]

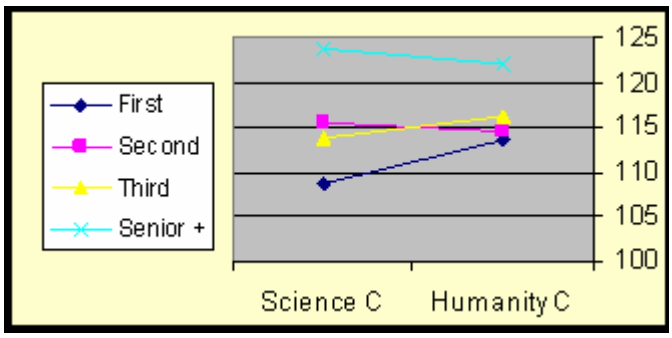
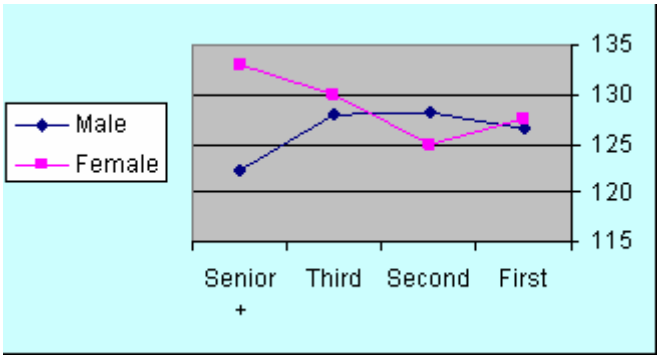


Table 5.: The Results of Analyses of Variance (ANOVA) Tests of between –Subjects Effects of (IMI) Scores.

Source	Sum of Squares	DF	Mean Square	F	p
College	0.368	1	0.368	.001	0.978
Gender	1712.929	1	1712.929	3.697*	0.050
Year	705.054	3	235.018	0.507	0.677
Gender × Year	3896.551	3	1298.850	2.804*	0.039
Gender × College	.020	1	. 020	.000	0.995
Years ×College	3345.880	3	1115.293	2.407	0.66
Gender × Year × College	1844.170	3	614.723	1.327	0.264
Error	442433.220	955	463.281		
Total	16225836.000	971			

** $p<0.05$*

Figure 4: The Joint effects of Paired Interaction (Gender [2] x Year [4]) on Intrinsic Motivation [IMI]



In addition, the graph in Figure (2) shows the effect of an ordinal interaction (gender x college), that the superiority of female students in perceiving their teachers practices as learner-centered in humanity colleges over male students increases from science to humanity colleges. Male students perceived their teachers' practices poorly in humanity (*M=112.76*) and science (*M=112.57*) colleges when compared to their female counterparts (*M= 116.55; 113.35*) respectively, thus the graph shows a significant interaction between gender and college.

Finally, the effect of a disordinal interaction (year x college) is reflected on the graph in Figure (3) by the divergence from parallel of the separate lines; the graph confirms that humanity students largely outperform science students in the first year *(M= 113.48; 108.69*) respectively, and third year (*M=116.38; 113.85*) respectively. In contrast, science students slightly outperform humanity students in the second year (*M=115.48; 114.47*) respectively and senior and graduate years (*123.82; 122.14*) respectively. In this way, the graph reveals also that the interaction between year and college is significant. *(See below Figures 1, 2 and 3, which depict a graphic illustration of the joint effects of independent variables (gender, year and college) paired interactions on dependent variable (learner- centered practices [LCPSPI]).*

Second: Results of the statistical analyses of students' intrinsic motivation (IMI) means of scores (see *Appendix* C/*Table 5a*) showed a statistically significant effect for Gender *(f (1,* 955) = 3. 697, p<0.05), in favor of females (*127.83)* compared to their male counterparts (*126.88*).

The results also showed a statistically significant main effect for the interaction (gender × year) *(f= (3,955) = 2.804, p<0. 05), on* (IMI).(See Table (5) and Figure (4). The effect of disordinal interaction (gender x year) is reflected on graph in figure (4) by the divergence from parallel of the separate curves; the graph confirms that male students surpass female students in the second year (*M= 128.05; 124.80*) respectively. In contrast, female students surpass male students in the first *(M= 127.59; 126.43*), third (*M=129.98; 128.01*), and senior and graduate years (*M= 133.03; 122.19*) respectively. Thus, the graph reveals that the interaction is significant.

(See *Figure (4), which depicts a graphic illustration of the* joint effects of paired interactions of independent variables (*gender and year) on dependent variable (*Intrinsic Motivation [IMI]).

4. DISCUSSION

This study was designed to examine the relationship between learner-centered practices of college teachers as determined by students perceptions scores on (LCPSPI), and students' intrinsic motivation scores on (IMI) and their achievement Midterm Grades (MG), whether there are any significant differences between the two levels (highest 27% - lowest 27%) of (LCPSPI) scores on (IMI) and (MG) scores, and between means of two levels (highest 27% - lowest 27%) of (IMI) scores on (MG), and finally, whether any of complementary independent variables: gender (male, female), college specialization (humanity, science), and year level (first, second, third, senior and graduate) will significantly affect the two dependent study's variables (learner-centered students' perceptions and students' intrinsic motivation) measured by (LCPSPI); (IMI) respectively.

The present study yielded several noteworthy findings. A first interesting finding deals with the relationship between learner-centered practices students' perceptions and their intrinsic motivation. Results showed statistically significant positive correlation between these two variables. In other words, students who reported that they are intrinsically motivated tended to perceive and be oriented toward aspects of the classroom environment (i.e., teacher support, innovative teaching, order and organization, student involvement) that support intrinsic motivation. This result extends and is consistent with past research (e.g., Amabile et al., 1994; Freeman, 1994; Loser, 2001; McCombs, 2001; Whitworth, Price and Randall, 2002) which reported positive correlation between classroom perceptions and intrinsic motivation, and showed that those faculty members who exhibited warmth and concern, adapted to class learning needs and encouraged personal challenge and responsibility were more likely to have positive learner-centered student evaluations; and that students cite course meaningfulness or relevance to their personal lives as one of the major sources of their motivation and enjoyment.

This result suggests that there is a reciprocal relationship between students and teachers (i.e., students and teachers as co-learners sharing power and control) in a learner-centered classroom, especially when promoting motivation (McCombs, 1993) and provides additive support to the theoretical and empirical literature(e.g., Black and Deci, 2000; Deci and Ryan, 1985; Deci et al.,

1981; Grolnickand Ryan, 1987;Ryan and Deci, 2000) which underlies the powerful effect of the educational context,and in particular thecritical role teacher plays in energizing students' intrinsic motivation (e.g., Reeve, Bolt and Cai, 1999).

In addition, the results showed that students' midterm grades correlated significantly with students' scores on (LCPSPI; IMI). These findings confirmed that if students perceived that their instructor' practices are learner-centered, they tended to be positively motivated to learn and consequently to achieve more in his/her class.

These two results go in line with the findings of numerous researchers (e.g., Shunk and Meece, 1992; Weinberger and McCombs, 2002) who found that students' percnptions of course meaningfulness could contribute to their overall performance in a course, and that academic performance is predicted by intrinsic motivation. Also, Peterson and Fennema (1985) found that cooperative activities contributed to students' acquisition of basic study topics and skills and to their achievement on high-level tasks.

Furthermore, this result is congruous with findings of Amabile et al. (1994) who reported a statistically significant positive correlation (*r=0.22, p<0.001)* - *nearly similar to our result (0.20, p <0.01*) - between intrinsic motivation scores and midterm grades for their undergraduate student sample. Apart from these results, some researchers (Daniels et al., 2001; Giovanni and Siu, 2002) found that intrinsic motivation correlated negatively with students' year GPA. They attributed these findings to task difficulty since intrinsic motivation may facilitate academic performance only when facing complex learning tasks, whereas other types of motivation (i.e., extrinsic motivation) may facilitate performance when facing simple learning tasks.

Taken together, we may interpret these current findings in accordance to many studies in education (e.g., Ryan and Deci, 2000) which extended these findings, showing that more autonomous motivation was associated with more engagement, better performance, higher quality learning, and better teacher ratings, among other outcomes.

Furthermore, we may consider that this positive effect of students' learner-centered perceptions of teachers and students' interest and enjoyment (intrinsic motivation) which were relatively moderate motivators for hard academic work, would have been greater and clearer if the Grade Point Average (GPA) or final grades of the specific course which students were assessing their teachers through or another objective achievement criteria were included.

A second aspect of this study that deserves attention since it provides strong support to the previous findings, are the findings which indicate statistically significant mean differences between the highest and lowest 27% of students' (LCPSPI) scores on both (IMI) and (MG), and between the highest and lowest 27% of students' (IMI) scores on (MG).

On the whole, these findings are consistent with motivation research (Deci and Ryan, 1985; Reeve et al., 1999; Vallerand, Fortier and Guay, 1997) which has shown that teacher perceived behaviors correlate significantly with students' academic performance, and that intrinsic motivation or self-determined motivation has a host of positive cognitive (concentration, learning, etc.) consequences. Furthermore, these results support and are in line with numerous findings of past studies (e.g., Cokley, 2000; McCombs, 2001; Reeve et al., 1999; Ryan and Deci, 2000; Thompson and Thornton, 2002; Weinberger and McCombs, 2002; Wentzel, 1997).

The current results confirm that learner-centered practices (i.e., positive performance feedback) enhanced intrinsic motivation, whereas, negative performance feedback diminished it; that students reported higher intrinsic motivation for learning when they perceived that the teacher cared about their progress, when they see relevance to their learning, and when they feel it is tailored to meet their innate interests and needs, and finally, that students' perception of classroom practices had a strong impact on their motivation and achievement.

A final aspect of the present study worth mentioning deals with the results of whether any of complementary independent variables: gender (male, female), college (humanity, science) and year (first, second, third, senior and graduate), will affect significantly two dependent study's variables measured by [LCPSPI] and [IMI]?

The results regarding the first dependent variable [LCPSPI] indicate statistically significant gender differences in favor of female students, compared to their male counterparts. Consistent with this finding, some researchers (e.g., Fischer and Good, 1994; Loser, 2001; Powdrill et al., 1997; Wilson, Stocking and Goldstein, 1994) found that females compared to males have more positive perceptions of the classroom (i.e., females see their classes as more meaningful, less ability-focused, and less competitive); tend to value and enroll more in

courses which seem relevant to their lives, and showed that the influences of teachers on young women and their self-esteem is particularly strong. There is also direct evidence that male students benefit from conventional teaching strategies (e.g., whole class instruction and competitive reward structures), and that female students benefit from strategies using cooperative and hands-on activities (Eccles, MacIver and Lange, 1986).

In contrast, other researchers (e.g., Constantinople, Cornelius and Gray, 1988; Hall and Sandler, 1982, as cited in Powdrill et al., 1997) indicate that females tend to perceive the classroom to be "colder" than do males. However, subsequent studies have produced mixed results for the claim of a "chilly classroom climate. For example, Crawford and McLeod (1990) did not find gender to be a strong influence on perceived classroom climate, although they did maintain that women perceive themselves to be less involved and less verbally engaged in classroom than their male counterparts.

This result may be interpreted in the light of the findings of some researchers (Boggiano and Katz, 1991; Valler and et al., 1997) who noted that the social context in the classroom may be responsible to some extent for gender differences in perceived teacher's practices, especially that teachers do not act in the same manner toward male and female students in the classroom. Male students receive more criticism from teachers and are less highly regarded than female students on a host of variables, such as motivation, conduct, and skills. In addition, teachers tend to be more controlling with male students, presumably to control their inappropriate behaviors. Accordingly, these teachers' gender-bias may clearly explain this result.

In addition, results showed statistically significant year differences on [LCPSPI] in favor of students in senior and graduate years. Specifically, we found statistically significant differences between senior and graduate year students on the one hand and first and second year students on the other. This finding is consonant with previous studies (Grimes, 1995; Sheehan, McMenamin and McDevitt, 1992) which noted that older students saw themselves as contributing members of the learning process, more independent, and had stronger and more goal-oriented study strategies than younger students. All these characteristics depict the outcomes of learner-centered practices (McCombs, 2001; McCombs and Whisler, 1997).

This finding shows that students' age represents a good predictor of the positive perceptions towards teachers' instructional behaviors. Accordingly, we may assume that this improvement in students' perceptions across college years had increased with experience. This point raises developmental and maturation issues that are expected to influence the nature of students' perceptions of their teachers' practices as they become closer to them in terms of their expected graduation and moving on to their career world. These students may attract their teachers' attention by their persistent active interactions inside and outside the classroom. In turn, the teachers may allow them more time to discuss their personal matters, to ask questions in lectures, and to respectfully hear their voice, as a result, these students had expressed better appreciation of their teachers practices, emphasizing that they were learner-centered.

Furthermore, there was a statistically significant effect for the three –ways interaction of (gender ×year × college) on Leaner-Centered Practices [LCPSPI] scores. As seen earlier in figures (1, 2 and 3); the three-paired interactions showed that they are significant. The first significant interaction (gender x year), (Figure 1) is caused by female students in all except the second year, significantly surpassing their male counterparts in perceiving their teachers practices as learner-centered. This finding was supported by the second paired significant interaction (gender x college) (Figure 2), which resulted from the superiority of females in both humanity and science colleges over their male counterparts, although males students in science colleges were close to their female counterparts who slightly outmatched them. The last paired significant interaction (year x college) (Figure 3), resulted from humanity college students in the first and third years, who highly surpassed their counterparts in science colleges, while science college students in the second, senior and graduate years outmatched their counterparts in humanity colleges, although the latter were close to the former in having more learner- centered perceptions of their teachers practices.

Taken together, these results suggest that gender, year and college variables, when they interact, have played a significant role in the current study's sample, through determining to what degree those college students had perceived their teachers' behaviors as learner-centered practices. To illustrate: Males and females across the different years differed greatly in their ratings of teaching practices and in their conceptualizations of these

behaviors as learner-centered, even when they are members of the same classroom. Specifically, the younger and older female students tended more than did their male counterparts to note and endorse their teachers' learner-centered practices.

This result goes in line with the findings of previous researchers (e.g., Basow and Silberg, 1987; Loser, 2001) who supported the notion regarding the dominance of gender and year variables in favor of females, particularly in senior and graduate students, in the field of teachers' perceptions. Further, suggesting that graduate students did evaluate their faculty members more favorably than did undergraduate students, Elmore and LaPointe (cited in Whitworth et al., 2002) postulated that women are more warm and expressive and that these traits have a positive correlation with female students' ratings of instructor performance.

With these previous results in mind, it also seems that the nature, content and climate of classes inhumanity and science courses which address real-life topics and concerns, and are more appropriate for women's roles as teachers, psychologists, engineers and nurses, have encouraged females more than males in attending to their teachers' orientations towards task-goal orientation instead of performance and ability or competition, in approving of their teachers' encouragement to make them engage in meaningful learning and to be involved in projects about which they care deeply and which they choose to pursue in order to exercise their competence through feelings of self-worth and self-efficacy (Bumpus et al., 1998).

Paradoxically, humanity and science courses and their topics are viewed as irrelevant and insignificant by male students. Perhaps this is because they were unable to make the necessary connections to their own life experiences. Consistent with this result, some researchers (Kelly and Houston-Comeaux, 1999) reported that gender differences are context dependent.

In as much as we earlier presented an explanation about the merit of humanity courses' climates which may encourage LCP instruction, we should also explain why students in second, senior and graduate years in science colleges in our study's sample have shown superiority over their counterparts in humanity colleges, although they were close.

It appears that by the very nature of learning activities in science colleges, these activities encourage both male and female students at the middle and end of their learning journey to respond actively to their teachers' learner-centered practices and to be slightly higher than their counterparts in human colleges in perceiving these practices.

Further, we may interpret this result as arising from the practices of some science teachers who deal with subjects that emphasize more serious instrumental skills and professions, such as engineering, nursing, IT, etc... (Gottfried Fleming and Gottfried, 2001), who are more likely to craft teaching and learning experiences that attend to students' attention, learning and memory, comprehension, and motivation, and to provide greater choices due to the various and practical nature of studying materials and topics. Presumably those science teachers were more successful in engaging more students in an effective learning process and were happier in their jobs (McCombs and Whisler, 1997), which bring about their male and female students in those two study levels to greatly perceive them as learner-centered. In contrast of this result, Stodolsky and Grossman (1995) concluded that those teaching math experienced less autonomy with regard to course content than did social studies teachers. Accordingly, when teachers of science courses communicate their lack of autonomy to students, or when the curriculum allows for less student autonomy as well, students therefore became aware that teaching behaviors do not match their psychological needs.

Regarding the second dependent variable [IMI], the results indicate statistically significant gender differences in favor of females. This finding of the higher dominance of female students in intrinsic motivation compared to their male counterparts is consistent with our previous [LCPSPI] results, and with findings of previous studies (e.g., Vallerand and Bissonnette, 1992) which revealed that females reported being more intrinsically motivated, as well as less externally regulated toward academic activities than males.Although this finding runs contrary to past findings which showed thatfemalesdisplay higher levels of learned helplessness than males in educational settings (see Dweck, 1986; Vallerand et al., 1997). However, it is noteworthy that these last findings have not been replicated with consistency in the literature and that much research reveals that females appear to display higher levels of internal control than males (See Vallerand and Bissonnette, 1992).

We may explain these gender differences in intrinsic motivation in light of goal orientations (i.e., performance or ability vs. task mastery) (Ames, 1992; Ben-Ari and

Eliassy, 2003), which when emphasized by teachers, competition has been reported to reduce students' intrinsic interest in tasks (Deci, Betley, Kahle, Abrams and Porac, 1981). Research also suggests that male students more than females report that they thrive on classroom competition (Eccles, MacIver and Lange, 1986).

Further, this result may be reflecting gender differences in socialization (Barnett and Hyde, 2001; Marsh, 1989; Powdrill et al., 1997) which stressed in women to be independent and to focus on achievement in order to be qualified to attain their future multiple roles as wives, mothers, workers, and housework handlers. Green and Hill, (2003) showed that women today place a greater emphasis on the career preparation aspect of college than they did in the past, and that women emphasize academic and professional preparation more than men do.

Finally, the results showed significant effect for the interaction (gender x year) on intrinsic motivation (IMI), which also accounted for female students who were surpassing their male counterparts in all except second year. As seen earlier in Figure (4), while females were progressing gradually in their motivation to enjoy learning across different year levels, reaching the top in last years, in contrast males were retreating, reaching the bottom in these last years. Recalling the finding of gender and year interaction on [LCPSPI], in general, it demonstrates the similarity with gender x year [IMI] result. This concurrence supports the reciprocal relationship between intrinsic motivation and instructional practice (McCombs, 1993).

Additionally, this finding provides support to past and recent research (Lepper, Corpus and Iyengar, 2005; Vallerand and Bissonnette, 1992) with regard to gender and age being good predictors among female students of their internal desire to learn, to engage in behaviors out of sheer enjoyment and challenge, and that these gender differences in intrinsic motivation appear well supported and seem to extend across life span. In addition, this finding bears enough similarity with some researchers (Giovanni and Siu, 2002; Gottfried et al., 2001; Marsh, 1989) to suggest that intrinsic motivation across time can be expected to increase with age in academically related motivational domains, and may facilitate performance when facing complex learning tasks.

In particular, because senior and graduate years were beneficial in increasing [IMI] for females, this result raises (SDT) developmental issues (Deci et al., 1991) that are expected to influence the nature of females' autonomy, competence and relatedness. In fact, (SDT) argues that behavior as intrinsically motivated (Black and Deci, 2000) is characterized by the experience of interest, enjoyment, challenge, and curiosity (Amabile et al., 1994; Deci and Ryan, 2000) and the great opportunities to choose goals and feeling respected and cared for. These characteristics seem to be the prototype of senior and graduate female students who reach this final stage of their academic pursuit, choose and seek to carry out their high aspirations willingly and voluntarily, regarding themselves to be the origin of their behavior.

Finally, this finding does raise the issue of why some men in progressive learning stages suffer a greater decline than women do. Gender differences in intrinsic motivation seem to develop greatly in late university years, possibly as a consequence of differences in self-concept and performance expectations. This interpretation is supported by the finding that no gender differences in intrinsic motivation for learning could be shown when the impact of self-concept was controlled (Skaalvik and Skaalvik, 2004).

Overall, the findings from the present study provide strong evidence of the potentially powerful educational benefits that can result from the appropriate use of learner-centered practices designed to increase the intrinsic motivational appeal of learning activities and subsequently to influence positively the academic achievement of college students. In the current study, we found that students who perceived themselves as more exposed to Learner-Centered motivationally embellished teacher practices displayed higher levels of intrinsic motivation and academic performance, compared to their counterparts who perceived themselves as less exposed to the teachers' learner-centered practices. In part, as a result of these perceptions, they became more deeply involved in the activities, attempting to use more complex operations, and thereby learned more from these activities; consequently, they succeeded highly in their academic work. These findings also reveal that gender, year and college are significant and independent contributors in determining the way students perceive their teachers practices and in identifying their intrinsic motivation. These findings highlight the developmental and domain nature of this trend.

This study has two main limitations. First, the psychometric properties of the Arabic version of the study's measures [LCPSPI] [IMI] are still not fully

satisfactory. Second, the study was based on self-reported Midterm Grades (MG) instead of accurate official records, although we may consider that our large sample size has allowed us to test interactions between gender, year and college, to examine their individual and joint effects on the student's perception of his/her teacher's practices, and on students' motivation. This implies the significance of the statistical power of tests and the generalization of findings. In addition, in this study we have presented a methodology that, if carefully developed, can be used by any institution for monitoring, diagnosing, planning, and evaluating interventions with the objective of promoting a positive development of the college environment.

In closing, the findings of this study, which relied directly on students' self reports and evaluations, confirming that the use of students' opinions is a reliable source to rate faculty, appear to be all but universal (Southern Regional Educational Board (SREB), 1997, cited in Whitworth et al., 2002). These findings have a number of implications for learner-centered practices, intrinsic motivation and academic achievement which may call attention by faculty in universities. A first implication is that intrinsic motivation, and more specifically, self-determined motivation (or the lack of it), leads to important real-life outcomes, such as these positive perceptions of teachers. A second implication is that research findings further indicate that such learner-centered practices can better meet the individual needs of learners so that increased deep understanding, a sense of ownership and relevance of content, may intrinsically motivate college level students to achieve the level of academic excellence we all strive to inculcate in our students.

In addition, we do not assume the relationship between teacher learner-centered practices students' perceptions and students' intrinsic motivation to provide evidence of cause-effect relation (see Giovanni and Siu, 2002). Instead, we asserted that there are numerous cognitive and emotional processes that mediate this relationship, such as feeling of belongingness, perceived autonomy and competence, attributions style, and self-regulation efforts (Deci et al., 1991; Ryan and Deci, 2000; Vallerand et al., 1997).

Indeed, these relationships in higher education between learner-centered practices and students motivational and achievement outcomes and the other mediators require further reiterated systematic investigation. The findings of the present study are open to further future investigations, with similar or different sample, to investigate the types of motivation, and the constructs (Competence, Autonomy and Relatedness) of self-determination motivation theory, which represent important psychological mediators in improving college students' intrinsic motivation and academic achievement through the lens of Learner-Centered Practices (LCP).

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Appendixes A, B and C

***Appendix A*:** Learner-Centered Practices students' Perceptions Inventory (LCPSPI) (34 Items)

Choose one of your teachers for one single course who is instructing you this semester please read each of the following statements, and then decide the extent to which you agree or disagree about his classroom practices. Circle the number to the right of the question that best matches your choice about this teacher. Go with your first judgment and do not spend much time mulling over any one statement. PLEASE ANSWER EVERY QUESTION.

	Strongly disagree	Somewhat disagree	Undecided	Somewhat agree	Strongly agree
1. He/She sees, treats students and relates to them as a real person, not just as typical teachers.	1.	2.	3.	4.	5.
2. He/She takes into consideration thatthere are some students whose personal lives are so dysfunctional that they simply do not have the capability to learn	1.	2.	3.	4.	5.
3. He/She makes no mistakes with his students.	1.	2.	3.	4.	5.
4. He/She encourages students to express their personal beliefs and feelings.	1.	2.	3.	4.	5.
5. He/She takes into consideration thattoo many students expect to be coddled in school.*	1.	2.	3.	4.	5.
6. If students are not doing well, He/She goes back to the basics and does more drill and skill development.	1.	2.	3.	4.	5.
7. He/She helps students feel comfortable in discussing their feelings and beliefs.	1.	2.	3.	4.	5.
8. He/She ignores and doesn't work with students who refuse to learn*.	1.	2.	3.	4.	5.
9. No matter how bad He/She feels, He/She doesn't let students know about those feelings.*	1.	2.	3.	4.	5.
10. He/She cares for addressing student's social, emotional and physical needs, just as his interesting in meeting their intellectual needs.	1.	2.	3.	4.	5.
11. In spite His/Her repeated attempts to provide feedback, some students just can't figure out their mistakes*.	1.	2.	3.	4.	5.
12. His/Her most important job as a teacher is to help students meet well established standards of what it takes to succeed. *	1.	2.	3.	4.	5
13. He takes the time to create caring relationships with his students.	1.	2.	3.	4.	5
14. He/ She can't help feeling upset and inadequate when dealing with difficult students.*	1.	2.	3.	4.	5
15. He / She prompts and provides direction for students' questions, in order to let them get the right answer.*	1.	2.	3.	4.	5
16. He / She works with students at their individual pace.	1.	2.	3.	4.	5
17. He/She makes it clear that he/ she has high expectations for all students.	1.	2.	3.	4.	5
18. He / She Listens to and respects each student's point of view.	1.	2.	3.	4.	5
19. He/ She can help students who are uninterested in learning to get in touch with their natural motivation to learn.	1.	2.	3.	4.	5
20. No matter what he / she does or how hard he / she tries, still there are some students who cannot be reached by Him/Her.*	1.	2.	3.	4.	5
21. He/ She works hard to show His/Her expertise in his/her subject area.*	1.	2.	3.	4.	5

22. He/ She encourages and facilitates student's participation and shared decision making	1.	2.	3.	4.	5
23. He/ She directs and teaches students how to follow rules and to do what is expected of them in the classroom.*	1.	2.	3.	4.	5
24. He/ She provides students with learning structure without being overly directive.	1.	2.	3.	4.	5
25. He/ She doesn't like to work with students who consistently cause problems in class.*	1.	2.	3.	4.	5
26. He/ She knows always more than students know.*	1.	2.	3.	4.	5
27. He/ She includes learning activities that are personally relevant to students.	1.	2.	3.	4.	5
28. He/ She knows what students need to know and what's' important to them.*	1.	2.	3.	4.	5
29. He/ She gives students increasing responsibility for the learning process.	1.	2.	3.	4.	5
30. He/ She cares to be always in control for the direction of learning.*	1.	2.	3.	4.	5
31. He/ She provides questions and tasks that stimulate students' thinking beyond rote memorizing.	1.	2.	3.	4.	5
32. He/ She accepts students where they are- no matter what their behavior and academic performance- were.	1.	2.	3.	4.	5
33. He/ She takes full responsibility for what students learn and how they learn.*	1.	2.	3.	4.	5
34. He/ She respects and sees things from the students' point of view.	1.	2.	3.	4.	5

Adapted from Mid-continent Regional Educational Laboratory (McREL), 1994, (McCombs and Whisler, 1997, p. 20-68). * (Reversed Scored).

Appendix B: Intrinsic Motivation Inventory (IMI) Items (39 Items)

Please read each of the following statements. Then decide how often **in this class** -which you choose its' teacher to assess in the previous questionnaire (A) - you do what is described in each of the statements. Circle the number to the right of the question that best matches your choice. Go with your first judgment and do not spend much time mulling over any one statement. PLEASE ANSWER EVERY QUESTION.

Item no.	Item	Strongly disagree	Somewhat disagree	Undecided	Somewhat agree	Strongly agree
1.	I am not that concerned about what other people think of my work.	1.	2.	3.	4.	5
2.	I prefer having someone set clear goals for me in my work.*	1.	2.	3.	4.	5
3.	The more the difficult the problem, the more I enjoy trying to solve it	1.	2.	3.	4.	5
4.	I am keenly aware of the goals I have for getting good grades I have for myself.*	1.	2.	3.	4.	5
5.	I want my work to provide me with opportunities for increasing my knowledge and skills.	1.	2.	3.	4.	5
6.	To me, success means doing better than other people.*	1.	2.	3.	4.	5
7.	I prefer to figure things out for myself.	1.	2.	3.	4.	5
8.	No matter what the outcome of a project, I am satisfied if I feel I gained a new experience.	1.	2.	3.	4.	5
9.	I enjoy relatively simple, straightforward tasks.*	1.	2.	3.	4.	5
10.	I am keenly aware of the [GPA (Grade Point Average)] goals I have for myself.*	1.	2.	3.	4.	5

11.	Curiosity is the driving force behind much of what I do.	1.	2.	3.	4.	5
12.	I am less concerned with what work I do than what I get for it.*	1.	2.	3.	4.	5
13.	I enjoy tackling problems that are completely new to me.	1.	2.	3.	4.	5
14.	I prefer work I know, I can't do well over work that stretches my abilities.*	1.	2.	3.	4.	5
15.	I am concerned about how other people are going to react to my ideas.*	1.	2.	3.	4.	5
16.	A seldom thing about grades and rewards.	1.	2.	3.	4.	5
17.	I am more comfortable when I can set my own goals.	1.	2.	3.	4.	5
18.	I believe that there is no point in doing a good job id nobody else knows about it.*	1.	2.	3.	4.	5
19.	I am strongly motivating by the grades I can earn.*	1.	2.	3.	4.	5
20.	It is important for me to be able to do what I most enjoy.	1.	2.	3.	4.	5
21.	I prefer working on projects with clearly specified procedures.*	1.	2.	3.	4.	5
22.	I want to find out how good I really can be at my work.	1.	2.	3.	4.	5
23.	I enjoy doing work that is so absorbing that I forget about everything else.	1.	2.	3.	4.	5
24.	I am strongly motivated by the recognition I can earn from other people.*	1.	2.	3.	4.	5
25.	I have to feel that I am earning something for what I do.*	1.	2.	3.	4.	5
26.	I enjoy trying to solve complex problems.	1.	2.	3.	4.	5
27.	It is important for me to have an outlet for self-expression.	1.	2.	3.	4.	5
28.	I want to find out how good I really can be at my work.	1.	2.	3.	4.	5
29.	I want other people to find out how good I really can be at my work.*	1.	2.	3.	4.	5
30.	What matters most to me is enjoying what I do.	1.	2.	3.	4.	5
31.	I was concern always with my grades.*	1.	2.	3.	4.	5
32.	I was inclined to do difficult tasks.	1.	2.	3.	4.	5
33.	I try to achieve academically because I like the challenge it brings.	1.	2.	3.	4.	5
34.	I did well in achieving the necessary skills of this course.	1.	2.	3.	4.	5
35.	I worked hardly to help myself in understanding this subject.	1.	2.	3.	4.	5
36.	I enjoyed learning in this class.	1.	2.	3.	4.	5
37.	I did my best effort in this subject.	1.	2.	3.	4.	5
38.	I spent my time reading more about the materials of this course.	1.	2.	3.	4.	5
39.	I learned new things in this course.	1.	2.	3.	4.	5

Adapted from Amabile, Hill, Hennessey, and Tighe (1994) and (Harter, 1981; Waugh, 2002).
*** (Reversed Scored).**

Appendix C

Table **(4/a)** Mean, Number of subjects, and Std. Deviation, according to complementary variables: College Specialization, Year Level, and Gender, on Learner- Centered Practices (LCPSPI) Scores.

College Specialization	Year Level	Gender	Mean	N	Std. Deviation
Humanity	First	Male	114.87	78	22.24
		Female	112.73	146	20.87
		Total	113.48	224	21.33
	Second	Male	113.14	55	24.27
		Female	115.38	81	22.49
		Total	114.47	136	23.16
	Third	Male	104.80	36	27.16
		Female	123.21	61	22.20
		Total	116.38	97	25.63
	Senior and Gradua	Male	117.61	21	23.93
		Female	125.66	27	21.72
		Total	122.14	48	22.82
	Total	Male	112.76	190	24.16
		Female	116.55	315	22.05
		Total	115.13	505	22.91
Science	First	Male	107.88	87	19.79
		Female	109.35	106	21.22
		Total	108.69	193	20.25
	Second	Male	117.00	57	21.09
		Female	114.37	78	19.30
		Total	115.48	135	20.04
	Third	Male	115.90	43	24.10
		Female	112.28	56	24.83
		Total	113.85	99	24.46
	Seniorand Graduat	Male	113.80	10	15.44
		Female	127.27	29	16.38
		Total	123.82	39	17.02
	Total	Male	112.57	197	21.27
		Female	113. 35	269	21.43
		Total	113.02	466	21.43

Total	**First**	**Male**	**111.18**	**165**	**21.21**
		Female	**111.31**	**252**	**21.04**
		Total	**111.26**	**417**	**21.08**
	Second	**Male**	**115.10**	**112**	**22.69**
		Female	**114.88**	**159**	**20.92**
		Total	**114.97**	**271**	**21.63**
	Third	**Male**	**110.84**	**79**	**25.98**
		Female	**117.98**	**117**	**24.03**
		Total	**115.10**	**196**	**25.01**
	Seniorand Graduat	**Male**	**116.38**	**31**	**21.37**
		Female	**126.50**	**56**	**18.98**
		Total	**122.89**	**87**	**20.33**
	Total	**Male**	**112.66**	**387**	**22.70**
		Female	**115.08**	**584**	**21.87**
		Total	**114.11**	**971**	**22.23**

Table **(5/a)** Mean, Number of subjects, and Std. Deviation, according to complementary variables: College Specialization, Year Level, and Gender, on Intrinsic Motivation Inventory (IMI) Scores.

College Specializa	**Year Level**	**Gender**	Mean	N	Std. Deviation
Humanity	First	Male	127.76	78	**23.34**
		Female	128.41	146	**21.20**
		Total	128.18	224	**21.92**
	Second	Male	125.69	55	**21.92**
		Female	125.91	81	**20.97**
		Total	125.82	136	**21.42**
	Third	Male	122.44	36	**25.82**
		Female	128.31	61	**23.82**
		Total	126.13	97	**24.62**
	Senior and Graduat	Male	126.09	21	**22.98**
		Female	132.59	27	**18.96**
		Total	129.75	48	**20.84**
	Total	Male	125.97	190	**23.38**
		Female	**128.10**	**315**	**21.47**
		Total	**125.53**	**505**	**22.41**

Science	First	Male	125.22	87	**20.62**
		Female	126.47	106	**21.31**
		Total	125.91	193	**20.96**
	Second	Male	130.33	57	**18.23**
		Female	123.65	78	**19.82**
		Total	126.47	135	**19.38**
	Third	Male	132.67	43	**23.28**
		Female	131.80	56	**19.46**
		Total	132.18	99	**21.09**
	Seniorand Graduat	Male	114.00	10	**26.17**
		Female	133.44	29	**21.57**
		Total	128.46	39	**24.06**
	Total	Male	127.76	197	**21.18**
		Female	**127.51**	**269**	**20.73**
		Total	127.62	466	20.90

Total	First	Male	126.43	165	**21.92**
		Female	127.59	252	**21.22**
		Total	127.13	417	**21.48**
	Second	Male	128.05	112	**20.35**
		Female	124.80	159	**20.38**
		Total	126.14	271	**20.40**
	Third	Male	128.01	79	**24.85**
		Female	129.98	117	**21.82**
		Total	129.18	169	**23.05**
	Seniorand Gradu	Male	122.19	31	**24.30**
		Female	133.03	56	**20.17**
		Total	129.17	87	**22.21**
	Total	Male	126.88	387	**22.28**
		Female	127.83	**584**	21.11
		Total	127.45	971	21.58

الممارسات المتمركزة حول المتعلمين والدافعية الداخلية للطلبة: الجامعة الهاشمية مثالاً

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ملخص

أجرى الباحثون دراسة لفحص العلاقة بين ممارسات المدرسين المتمركزة حول المتعلمين والدافعية الداخلية والتحصيل الأكاديمي للطلبة الجامعيين. قامت عينة عشوائية (ن=971) (387 ذكراً، و584 أنثى)، من طلبة الجامعة الهاشمية في مستوى البكالوريوس والدراسات العليا بتعبئة قائمة ادراكات الطالب للممارسات المتمركزة حول المتعلمين (LCPSPI)، وقائمة الدافعية الداخلية (IMI)، ومعلومات درجات الامتحان الفصلي (MG). أشارت نتائج التحليلات الإحصائية إلى وجود علاقة ارتباطية إيجابية دالة بين درجات الطلبة على قائمة الممارسات المتمركزة حول المتعلمين ودرجاتهم على قائمة الدافعية الداخلية ومقياس التحصيل الأكاديمي، وبين درجات الدافعية الداخلية والدرجات الفصلية. وأشارت النتائج أيضاً إلى أن مستويي الإدراك (مرتفع- منخفض) للممارسات المتمركزة حول المتعلمين قد أديا إلى أثر ذي دلالة إحصائية على درجات الدافعية الداخلية والتحصيل الأكاديمي، كما أدى مستويا الدافعية الداخلية (مرتفع- منخفض) إلى أثر ذي دلالة إحصائية على التحصيل الأكاديمي. بالإضافة إلى ذلك، تبين أن لمتغيرات الجنس والسنة الدراسية والكلية آثاراً دالة على إدراك الطلبة الجامعيين للممارسات التعليمية والدافعية الداخلية.

الكلمات الدالة: دراسة ارتباطية؛ الممارسات المتمركزة حول المتعلمين؛ قائمة ادراكات الطلبة لممارسات المدرسين المتمركزة حول المتعلمين؛ الدافعية الداخلية؛ نظرية العزم الذاتي؛ نظرية التقييم المعرفي؛ التحصيل الأكاديمي؛ درجة الامتحان الفصلي؛ طلبة جامعيون في مستوى البكالوريوس والدراسات العليا – الجامعة الهاشمية؛ متغيرات الجنس والسنة الدراسية والتخصص الدراسي.

* قسم علم النفس التربوي (1 و3)، وقسم المناهج والتدريس (2)، كلية العلوم التربوية، الجامعة الهاشمية. تاريخ استلام البحث 2004/11/4، وتاريخ قبوله 2005/9/6.