Differential Levels of Student-Internal Predictors of Academic Success in Daystar University

By Florah Karimi

Abstract

The study sought to establish the differential levels of academic performance and student's internal predictors of academic success in the various categories of gender, mode of study, international students' status and year of study. The study involved undergraduate students of the Daystar University. The data was analyzed using both descriptive analyses and the Analysis of Variance.

Significant differences were observed in the various categories with respect to the levels of academic performance, attitudes, goal orientations, self-regulatory learning strategies and personality traits. Attention should be given to enhancing students' academic performance in the distinct categories through focusing on minimizing the differences in the levels of factors contributing to the academic performance of the students. Further research is recommended in other universities in the country for purposes of generalizing the findings. In addition, there is need for a further study on the differential effects of external predictors on the academic success of students in the university.

Keywords: Academic success; differential levels; student's internal factors.

Introduction

Over the past decade, the quality of higher education has received great attention (Materu 2007). The demand for quality education greatly advanced through the launching of the Bologna Process and the Bologna Students Joint Declaration (1999) that resulted in greater commitment of European universities to quality university education**.** However, according to Materu (2007) the first ever national quality assurance agency set up in Africa to cater for university education was that established in Kenya, notably the Commission for Higher Education (CHE), which was set up in 1985.

According to Mondoh's observations at the Egerton University of Kenya, the key variables that impact on the quality of university education include the academic programs, research development, lecturers, physical facilities, student admission requirements, instructional materials and equipment, assessments and examinations, institutional management and the institutional environment. The quality of an academic program, which includes well spelt out program learning outcomes, is considered as a key indicator of quality higher education (Materu 2007). In addition, according to the Inter-University Council for East Africa Handbook for Quality Assurance in Higher Education (2007) academic achievement, which is a reflection of the attainment of program learning outcomes, is a measure of quality higher education, more specifically, when it can be translated to the world of work after the attainment of the required academic qualifications. These observations give little recognition to a student's internal aspects as determinants of university education, although the latter aspects can be indirectly implied in

the academic programs and more specifically by the students' academic success in the academic program.

In many higher education institutions, academic success is determined by use of the Grade Point Average (GPA) system. The GPA is a measure of a student's average academic performance across the courses being offered in any given semester (McKenzie, Gow & Schweitzer 2004, and Zeegers 2004). It incorporates all the learning outcomes expected of a student in his/her semesters' courses. The cumulative (Cum) GPA is used as a measure of a student's average academic performance in the duration of time he/she has been taking a certain program of study.

A student's own initiative is critical to his/her academic success at the tertiary levels of education more than at lower levels of education (Cobb 2003, Appleby 2005, and Isaacson & Fujita 2006). As a student proceeds from one level of education to the next external forces become less significant as internal student-related factors become more significant in determining the academic success of students.

Various studies, mainly carried out in developing countries, have suggested that the students' characteristics more than external factors are critical to their success in higher education. These studies include Glass's (1997) in Australia, Tam's (2002) in Hong Kong and Smith's (2001), Cobb's (2003) and Isaacson & Fujita's (2006) all in the United States of America. Students can be distinctly categorized in gender, age, international student status, year of study and mode of study. Variations are observed in the academic performance of students in the various categories. Noting that Kenya is a developing country with its distinct cultural orientation there is need to establish whether there are variations in the levels of the student characteristics that are considered significant contributors to academic success in the different categories of undergraduate students.

The study aimed at establishing whether there is any significant difference in the levels of academic performance and students' internal predictors of academic success, namely, attitudes, goal-orientations, self-regulatory learning strategies and personality traits, among students in the various categories of gender, international student status, year of study and mode of study.

The following research hypotheses were made in the study:

1. There is a significant difference between the average levels of academic performance, attitudes, goal orientations, self-regulatory learning strategies and personality traits among male and female students of the university at $p \leq 0.05$;
2. There is a significant difference between the average levels of academic performance, attitudes, goal orientations, self-regulatory learning strategies and personality traits among full-time and part-time students of the university at $p \leq 0.05$;
3. There is a significant difference between the average levels of academic performance, attitudes, goal orientations, self-regulatory learning strategies and personality traits among local and international students of the university at $p \leq 0.05$; and
4. There is a significant difference between the average levels of academic performance, attitudes, goal orientations, self-regulatory learning strategies and personality traits among the first, second, third and fourth year students of the university at $p \leq 0.05$.

Student mentors in academics should be aware of the factors that contribute to the academic performance of students in the University for Purposes of guiding the latter to be successful in their academics. However, enhanced guidance can be given to the students if awareness is made on the interactions that take place between the various students' internal factors in the distinct categories of students. This study is expected to increase understanding on the differences in the

levels of academic performance and students' internal predictors of academic success among students in diverse categories. This would assist the students in the various categories aim at improving their levels of manifested factors as they aim at generally enhancing their academic performance in the university. The study is also expected to assist mentors to be more specific while guiding students on their academic performance, having been enlightened on differential contributions made by various students' internal predictors to their academic success.

Empirical Studies on Students' Internal Predicators to Academic Success

Student's own characteristics are critical in determining their academic success in the tertiary level of education (Cobb 2003, Appleby 2005, Isaacson & Fujita 2006). The students' internal factors that are observed to significantly contribute to academic success in the tertiary level of education include attitudes (Facey-Shaw & Golding 2005), which constitute self-efficacy (Harackiewicz et al. 2002, Ofori & Charlton 2002, Carroll & Garavalia 2004, Facey-Shaw & Golding 2005) and locus of control (Cassidy & Eachus 2000, Ofori & Charlton 2002); goal orientations, which consist of intrinsic and extrinsic goal orientations (Simons et al. 2000, Printick & Chunk 2002, Urdan et. Al. 2002, Beghetto, 2004, Carroll & Garavalia 2004, Driscoll 2005, Lucinda et al. 2005); self-regulatory learning strategies (Locke & Latham 2002, Langley 2004, Yip and Chung 2005) which comprise of metacognitive and self-regulatory, cognitive and resource management learning strategies (Chen 2002, Ofori & Charlton 2002); personality traits, which include agreeableness, extraversion, neuroticism, conscientiousness and openness-to-experience (Eeden et al. 2001, McKenzie et al. 2004, Petrides et al. 2005); international student status (Zeegers 2004, Andrade 2006); gender (Cantwell et al. 2001, Zeegers 2004, Sikhovari 2005) and age, which in many cases is closely related to the adopted mode of study, that is, part-time or full-time modes (Eppler et al. 2000, Smith & Naylor 2001, Socrates Grundvit Action 2002, Bee & Bjorklund 2004, Gravett 2005).

A study carried out by Salahdeen and Murtala (2005) reveals those students who are aged less than 19 years outperform those who are aged over 19 years in their first year of study. This difference may be attributed to initial adjustment problems of older students in their first year of study (Salahdeen & Murtala 2005). On the other hand, other studies endorse that older students outperformed their younger counterparts in their academics (Eppler et al. 2000, Cantwell et al. 2001 & Keith et al 2006). Hall (2000) specifically observes being over 25 years of age to be a good predictor to academic performance in the universities. As pointed out by Salahdeen & Murtala (2005), the difference in favor of the younger students may only be experienced in the students first year of study due to adjustment related issues, which, when overcome, place the older students in a more advantageous position than their younger counterparts.

According to Socrates Grundvit Action (2002), older students are more able to articulate learning goals, are more autonomous, self-directed and relevance-oriented in their learning than their younger counterparts. The older students tend to be intrinsically motivated while their younger counterparts tend to be more extrinsically motivated with regard to their academics (Eppler et al. 2000, Socrates Grundvit Action 2002). In addition, older students significantly utilize time-management strategies and exhibit learning strategies that are perceived to be more desirable than those of young students in enhancing academic performance (Eppler et al. 2000, Little 2002).

According to Cantwell's (2001) study, female students outperform male students in their academics in the university. On the contrary, Salahdeen and Murtala's (2005) study reveals that

at post-school levels, male students are well ahead of their female counterparts in virtually every area of study. In relation to academic performance, Zeegers (2004) observes significant direct effects of international students' status in the 1st year of study in favor of the local students but not in the 3rd year of study. Zeegers, however, observes indirect effects of international students' status on academic performance in the 3rd year of study, especially when mediated through the learning approaches.

In addition, Andrade (2006) considers international students to have better critical thinking skills than their local counterparts. Critical thinking skills, which are considered as metacognitive learning strategies (Smith 2001), are self-regulatory learning strategies that enhance academic performance (Chen 2002, Isaacson & Fujita 2006). Andrade further observes local students rather than international students to prefer collaborative learning and peer-support in their learning, both of which are regarded as resource management self-regulatory learning strategies (Chen 2002) that contribute to academic success (Zimmerman 1998, Tuckman 1999, Locke & Latham 2002, Langley 2004, Yip & Chung 2005, Isaacson & Fujita 2006).

In general, interactive effects are observed between variables that predict academic performance of undergraduate students. Noting that none of these studies were carried out in Kenya, it is of interest to establish whether differences exist in the levels of student's internal factors that contribute to the academic performance of undergraduate students in Kenya, which is a developing country and may be having a different cultural orientation as compared to other countries. More specifically, differences in the manifestation of various factors were sought among students in the various categories of gender, mode of study, international students' status and year of study.

Study Design

The study made use of quantitative research methods, among the male and female students, international and local students, full-time and part-time students and students in the various four years of study in order to establish significant differences in the levels of academic performance. In addition, significant differences were sought in the levels of the students' internal predictors of academic performance in the university in the various categories of students.

The population of the study involved the undergraduate full-time students of the Athi River Campus and the part-time students of the Nairobi Campus. The sampled students were required to reveal their identity while filling in the study questionnaire for purposes of making linkages with data obtained from the students' academic records as obtained from the university's administrative offices. Responses were received from two hundred and ninety nine (299) students from the Athi River Campus (full-time students) and one hundred and twenty two (122) students from the Nairobi Campus (part-time students), giving a total of four hundred and twenty one (421) responses, which was 32% of the students who were in session in the two campuses.

Both primary and secondary data was utilized in the study. The primary data was directly obtained from the students using a questionnaire on students' internal characteristics while secondary data was obtained from academic performance reports. The questionnaire consisted mainly of closed-ended items. The first item gave an indication of the students' identity number, followed by an item on the students' chronological age. The students were expected to circle the options that relate to them in the successive items of:

1. Gender; 'Male' or 'Female';

2. Campus location; 'Nairobi' or 'Athi River';
3. Year of study; '1st', '2nd', '3rd' or '4th';
4. International students' status; 'Kenyan' or 'Non-Kenyan'.

The other items addressed the construct areas of attitudes, goal orientations, self-regulatory learning strategies and personality traits. Through the use of existing scales of measuring various construct areas, namely, the Motivated Strategies for Learning Questionnaire (MSLQ) (McKenzie et al. 2004), the revised General Perceived Self-Efficacy (Schwartzer & Scholz 2000), the Revised Biggs Study Processes Questionnaire (RSPQ) (Zeegers 2002) and the International Personality Item Pool (IPIP) Five Factor Personality Inventory (Buchanan 2001), a closed-ended 5-point Likert scale questionnaire was developed consisting of the options of, 'Strongly Disagree', 'Disagree', 'Neutral', 'Agree' and 'Strongly Agree'. The items were phrased in both a positive and negative manner so as to guard against random assignment of responses based on established patterns.

The items of the draft questionnaire were examined for face validity and items that were ambiguous were either eliminated or revised, thus resulting in the refinement of the instrument. The instrument was also pre-tested among 27 randomly selected full-time students, who were not part of the study's sample group. Reliability analysis was carried out involving the various items of the construct areas present and the alpha coefficient indices of the construct areas were determined in an attempt to establish the internal consistency of the items of the questionnaire. Adjustments were made to the questionnaire by either removing or rephrasing the items that were ambiguous and those with low reliability coefficients, thus strengthening the various items' internal consistencies. The final version of the questionnaire consisted of 59 items from the construct areas of attitudes, goal orientations, self-regulatory learning strategies and personality traits.

The data was entered into the Statistical Package of Social Sciences (SPSS 11.0) for purposes of easy access and analyses. Descriptive analyses were carried out to determine the means, standard deviations and medians of the variables of the study, some of which are skewed. Significant differences in the means of the groupings of the study, mainly gender, international students status, year of study and campus of operation, were sort using a one-way Analysis of Variance (ANOVA) test. The significant levels at which null hypotheses were rejected was at $p \leq 0.05$.

Analyses on Differences of Levels of Academic Performance and Students' Internal Predicators of Academic Success

Descriptive analyses of means, standard deviations and medians of students' distinct groupings and inferential analyses using the one-way Analysis of Variance (ANOVA) critical values at significant levels of $p \leq 0.05$ were utilized as discussed below.

Student's gender

The levels of students' characteristics in distinct groupings of male and female students were analyzed in the study. Table 1 provides the descriptive statistics of the male and female students in relation to their levels of academic performance, attitudes, goal orientations, learning strategies and personality traits.

Table 1: Gender-related descriptive analysis of students

Student's gender		Student's cumulative GPA	Self Efficacy	Locus of Control	Intrinsic Motivation	Extrinsic motivation	Metacognitive	Resource Management	Cognitive Learning	Agreeableness	Extraversion	Neuroticism	Conscientiousness	Openness to
Male	Mean	2.7863	4.24	3.73	4.19	3.34	3.80	3.64	3.49	3.91	3.15	2.25	3.88	3.68
	N	139	141	140	141	139	137	129	144	140	140	140	141	137
	Std. Deviation	.48392	.566	.697	.645	.719	.605	.437	.606	.609	.608	.661	.654	.529
	Skewness	-.443	-.724	-.208	-1.188	-.032	-.405	-.222	-.197	-.462	.350	.162	-.484	-.078
Female	Mean	2.9009	4.31	3.87	4.31	3.47	3.80	3.64	3.57	4.03	3.05	2.26	3.77	3.62
	N	271	270	269	265	270	266	250	271	268	261	270	269	256
	Std. Deviation	.38535	.553	.722	.570	.818	.648	.456	.616	.548	.631	.687	.669	.598
	Skewness	-.313	-.897	-.632	-.742	-.150	-.747	-.341	.006	-.658	-.133	.480	-.449	-.304
Total	Mean	2.8620	4.29	3.82	4.27	3.42	3.80	3.64	3.54	3.99	3.09	2.26	3.81	3.64
	N	410	411	409	406	409	403	379	415	408	401	410	410	393
	Std. Deviation	.42426	.558	.716	.599	.787	.633	.449	.613	.572	.624	.678	.665	.575
	Skewness	-.462	-.832	-.481	-.957	-.092	-.645	-.304	-.058	-.599	.014	.380	-.459	-.261

According to Table 1, the majority of the students had high scores on academic performance, self-efficacy, locus of control, intrinsic and extrinsic goal orientations, metacognitive, resource management and cognitive learning strategies and agreeableness, conscientiousness and openness-to- experience personality traits, as portrayed by the skewness measures. Most students were also observed to have relatively low scores on the neuroticism and extraversion personality traits.

In addition, the male students had higher mean scores than their female counterparts in terms of extraversion, conscientiousness and openness-to-experience while the female students had higher mean scores than their male counterparts on the Cumulative GPA, self-efficacy, internal locus of control, intrinsic motivation, extrinsic motivation, cognitive learning strategies, agreeableness and neuroticism. In order to establish the significance in the differences between the male and female students' characteristics, the one-way ANOVA was carried out as presented in Table 2.

Table 2 reveals that the significant differences at $p \leq 0.05$ are in relation to the cumulative GPA and the agreeableness personality trait. The female students were therefore significantly academically better than the male students at $p \leq 0.05$, as reflected by the identified differences on Table 1 and 2. In addition, the female students were significantly more agreeable than their male counterparts at $p \leq 0.05$. Although differences were observed between the means of the male and female students in relation to their levels of self efficacy, internal locus of control, intrinsic and extrinsic goal orientations, adoption of metacognitive, resource management and cognitive learning strategies and the personality traits of extraversion, neuroticism, conscientiousness and openness-to-experience, they were insignificant at $p \leq 0.05$.

Table 2: Significance of mean differences in genders

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Student's cumulative GPA	Between Groups	1.208	1	1.208	6.804	.009
	Within Groups	72.410	408	.177		
	Total	73.617	409			
Self Efficacy	Between Groups	.455	1	.455	1.462	.227
	Within Groups	127.173	409	.311		
	Total	127.627	410			
Locus of Control	Between Groups	1.765	1	1.765	3.466	.063
	Within Groups	207.290	407	.509		
	Total	209.055	408			
Intrinsic Motivation	Between Groups	1.182	1	1.182	3.315	.069
	Within Groups	144.072	404	.357		
	Total	145.254	405			
Extrinsic motivation	Between Groups	1.537	1	1.537	2.490	.115
	Within Groups	251.210	407	.617		
	Total	252.746	408			
Metacognitive Strategies	Between Groups	.002	1	.002	.006	.938
	Within Groups	160.955	401	.401		
	Total	160.957	402			
Resource Management strategies	Between Groups	.000	1	.000	.002	.962
	Within Groups	76.177	377	.202		
	Total	76.178	378			
Cognitive Learning strategies	Between Groups	.493	1	.493	1.315	.252
	Within Groups	155.018	413	.375		
	Total	155.511	414			
Agrreableness	Between Groups	1.385	1	1.385	4.265	.040
	Within Groups	131.804	406	.325		
	Total	133.189	407			
Extraversion	Between Groups	.928	1	.928	2.391	.123
	Within Groups	154.786	399	.388		
	Total	155.714	400			
Neuroticism	Between Groups	.013	1	.013	.029	.866
	Within Groups	187.722	408	.460		
	Total	187.735	409			
Conscientiousness	Between Groups	1.189	1	1.189	2.699	.101
	Within Groups	179.754	408	.441		
	Total	180.943	409			
Openness to Experience	Between Groups	.380	1	.380	1.152	.284
	Within Groups	129.172	391	.330		
	Total	129.553	392			

Students' international status

Descriptive analyses in relation to the local and international students' levels of academic performance, attitudes, goal orientations, learning strategies and personality traits were carried out as provided on Table 3.

Table3: International status-related descriptive analysis

Student's International status		Student's cumulative GPA	Self Efficacy	Locus of Control	Intrinsic Motivation	Extrinsic motivation	Metacognitive Strategies	Resource Management strategies	Cognitive Learning	Agreeableness	Extraversion	Neuroticism	Conscientiousness	Openness to Experience
Kenya	Mean	2.8849	4.30	3.83	4.28	3.41	3.80	3.65	3.56	4.00	3.07	2.23	3.83	3.65
	N	375	376	374	371	374	369	350	379	372	368	374	374	358
	Std. Deviation	.39695	.551	.720	.583	.775	.633	.439	.621	.554	.622	.676	.650	.574
	Skewness	-.274	-.785	-.494	-.876	-.059	-.678	-.167	-.082	-.507	.007	.466	-.406	-.262
Non-Kenyan	Mean	2.6171	4.19	3.68	4.16	3.58	3.81	3.62	3.36	3.82	3.26	2.53	3.61	3.51
	N	35	35	35	35	35	34	29	36	36	33	36	36	35
	Std. Deviation	.60368	.625	.660	.750	.903	.640	.568	.491	.724	.633	.637	.785	.574
	Skewness	-.341	-1.149	-.474	-1.237	-.477	-.290	-1.084	-.212	-.780	.075	-.503	-.596	-.285
Total	Mean	2.8620	4.29	3.82	4.27	3.42	3.80	3.64	3.54	3.99	3.09	2.26	3.81	3.64
	N	410	411	409	406	409	403	379	415	408	401	410	410	393
	Std. Deviation	.42426	.558	.716	.599	.787	.633	.449	.613	.572	.624	.678	.665	.575
	Skewness	-.462	-.832	-.481	-.957	-.092	-.645	-.304	-.058	-.599	.014	.380	-.459	-.261

According to Table 3, the local student's had higher mean scores on all variables except for extrinsic goal orientation, metacognitive learning strategies, extroversion and neuroticism in which the international students had higher mean scores. The distinct groupings of local and international students were further analyzed using one-way ANOVA in order to determine the significance of their mean differences in relation to the variables of academic performance at the university, attitudes, goal orientations, learning strategies and personality traits as shown on Table 4.

Table 4: Significance of mean differences in international students' status

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Student's cumulative GPA	Between Groups	2.295	1	2.295	13.128	.000
	Within Groups	71.322	408	.175		
	Total	73.617	409			
Self Efficacy	Between Groups	.408	1	.408	1.310	.253
	Within Groups	127.220	409	.311		
	Total	127.627	410			
Locus of Control	Between Groups	.742	1	.742	1.451	.229
	Within Groups	208.312	407	.512		
	Total	209.055	408			
Intrinsic Motivation	Between Groups	.406	1	.406	1.132	.288
	Within Groups	144.848	404	.359		
	Total	145.254	405			
Extrinsic motivation	Between Groups	.941	1	.941	1.521	.218
	Within Groups	251.805	407	.619		
	Total	252.746	408			
Metacognitive Strategies	Between Groups	.002	1	.002	.006	.939
	Within Groups	160.955	401	.401		
	Total	160.957	402			
Resource Management strategies	Between Groups	.020	1	.020	.098	.755
	Within Groups	76.158	377	.202		
	Total	76.178	378			
Cognitive Learning strategies	Between Groups	1.267	1	1.267	3.391	.066
	Within Groups	154.245	413	.373		
	Total	155.511	414			
Agrreableness	Between Groups	1.118	1	1.118	3.438	.064
	Within Groups	132.070	406	.325		
	Total	133.189	407			
Extraversion	Between Groups	1.035	1	1.035	2.670	.103
	Within Groups	154.679	399	.388		
	Total	155.714	400			
Neuroticism	Between Groups	2.913	1	2.913	6.430	.012
	Within Groups	184.822	408	.453		
	Total	187.735	409			
Conscientiousness	Between Groups	1.567	1	1.567	3.564	.060
	Within Groups	179.377	408	.440		
	Total	180.943	409			
Openness to Experience	Between Groups	.678	1	.678	2.056	.152
	Within Groups	128.875	391	.330		
	Total	129.553	392			

According to Table 4, there are significant differences among the local and international students in their academic performance and neuroticism trait at $p \leq 0.05$. Table 3 and 4 depict the local students' means scores to be significantly better than those of their international counterparts at $p \leq 0.05$. On the other hand, the international students had a significantly higher mean score on the neuroticism trait as compared to their local counterparts at $p \leq 0.05$. All the other mean differences were considered to be insignificant at $p \leq 0.05$.

Student's campus of study

Comparisons were also made between full-time students, whose program was in the Athi River Campus, and the part-time students, whose program was in the Nairobi campuses, in relation to their levels of academic performance, attitudes, goal orientations, learning strategies and personality traits as shown on Table 5.

Table 5: Campus-related descriptive analysis of students

Student's campus of operation		Student's cumulative Self Efficacy	Locus of Control	Intrinsic Motivation	Extrinsic motivation	Metacognitive Strategies	Resource Management	Cognitive Learning	Agreeableness	Extraversion	Neuroticism	Conscientiousness	Openness to Experience
Athi River Campus	Mean	2.8498	4.25	3.81	4.22	3.55	3.80	3.67	3.56	3.95	3.06	2.28	3.79	3.62
	N	291	293	289	287	293	289	270	293	292	284	292	291	283
	Std. Deviation	.41957	.578	.693	.615	.760	.634	.452	.624	.603	.627	.690	.648	.598
	Skewness	-.443	-.840	-.363	-.905	-.179	-.470	-.348	-.072	-.555	.024	.366	-.443	-.298
Nairobi Campus	Mean	2.8918	4.39	3.84	4.38	3.09	3.81	3.58	3.49	4.09	3.15	2.20	3.86	3.68
	N	119	118	120	119	116	114	109	122	116	117	118	119	110
	Std. Deviation	.43585	.491	.770	.542	.758	.632	.437	.586	.473	.614	.645	.706	.511
	Skewness	-.527	-.624	-.709	-1.057	.153	-1.110	-.229	-.056	-.443	.004	.393	-.530	-.016
Total	Mean	2.8620	4.29	3.82	4.27	3.42	3.80	3.64	3.54	3.99	3.09	2.26	3.81	3.64
	N	410	411	409	406	409	403	379	415	408	401	410	410	393
	Std. Deviation	.42426	.558	.716	.599	.787	.633	.449	.613	.572	.624	.678	.665	.575
	Skewness	-.462	-.832	-.481	-.957	-.092	-.645	-.304	-.058	-.599	.014	.380	-.459	-.261

According to Table 5, the part-time students, who were in the Athi River Campus, had higher mean scores in the variables of extrinsic goal orientation, resource management strategies, cognitive learning strategies and neuroticism. On the other hand, the mean scores on cumulative GPA, self- efficacy, internal locus of control, intrinsic goal orientation, metacognitive learning strategies, agreeableness, extraversion, conscientiousness and openness-to-experience were higher among the part-time students in the Nairobi campus than among the full-time students in the Athi River campus. Table 6 reveals the significance of the mean differences of the full-time and part-time students using one-way ANOVA.

Table 6: Significance of mean differences in campuses

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Student's cumulative GPA	Between Groups	.149	1	.149	.828	.364
	Within Groups	73.468	408	.180		
	Total	73.617	409			
Self Efficacy	Between Groups	1.757	1	1.757	5.708	.017
	Within Groups	125.870	409	.308		
	Total	127.627	410			
Locus of Control	Between Groups	.096	1	.096	.188	.665
	Within Groups	208.958	407	.513		
	Total	209.055	408			
Intrinsic Motivation	Between Groups	2.313	1	2.313	6.537	.011
	Within Groups	142.942	404	.354		
	Total	145.254	405			
Extrinsic motivation	Between Groups	17.999	1	17.999	31.206	.000
	Within Groups	234.748	407	.577		
	Total	252.746	408			
Metacognitive Strategies	Between Groups	.018	1	.018	.044	.834
	Within Groups	160.940	401	.401		
	Total	160.957	402			
Resource Management strategies	Between Groups	.656	1	.656	3.273	.071
	Within Groups	75.522	377	.200		
	Total	76.178	378			
Cognitive Learning strategies	Between Groups	.443	1	.443	1.179	.278
	Within Groups	155.069	413	.375		
	Total	155.511	414			
Agrreableness	Between Groups	1.712	1	1.712	5.286	.022
	Within Groups	131.477	406	.324		
	Total	133.189	407			
Extraversion	Between Groups	.628	1	.628	1.616	.204
	Within Groups	155.086	399	.389		
	Total	155.714	400			
Neuroticism	Between Groups	.537	1	.537	1.171	.280
	Within Groups	187.197	408	.459		
	Total	187.735	409			
Conscientiousness	Between Groups	.367	1	.367	.829	.363
	Within Groups	180.577	408	.443		
	Total	180.943	409			
Openness to Experience	Between Groups	.240	1	.240	.724	.395
	Within Groups	129.313	391	.331		
	Total	129.553	392			

Although Table 6 does not reveal significant mean differences in the academic performance of the full-time and part-time students, significant differences are observed between the means of full-time and part-time students with respect to self-efficacy, intrinsic goal orientations, extrinsic goal orientations and the agreeableness personality traits at $p \leq 0.05$. Table 5 and 6 depict the part-time students as being significantly older than the full-time students. Levels of self-efficacy, intrinsic goal orientations and agreeableness are depicted as being significantly higher among the part-time students than among the full-time students. On the other hand, the full-time students are depicted as having higher levels of extrinsic goal orientations as compared to their part-time counterparts.

Year of study

Comparisons of data among students in the four years of study were made with respect to their academic performance, attitudes, goal orientations, learning strategies and personality traits as shown on Table 7.

Table 7: Year of study-related descriptive analysis of students

Student's expected year of study		Student's cumulative GPA	Self Efficacy	Locus of Control	Intrinsic Motivation	Extrinsic motivation	Metacognitive Strategies	Resource Management	Cognitive Learning	Agrreableness	Extraversion	Neuroticism	Conscientiousness	Openness to Experience
1st year	Mean	2.8792	4.43	4.18	4.37	3.59	4.00	3.86	3.74	4.03	3.11	2.14	4.01	3.61
	N	94	95	95	90	95	94	86	97	93	90	95	95	86
	Std. Deviation	.46467	.484	.554	.506	.784	.569	.428	.598	.556	.649	.712	.651	.585
	Skewness	-.558	-1.166	-.409	-.496	-.024	-.142	-.302	-.188	-.567	-.041	.853	-.488	.118
2nd year	Mean	2.8444	4.21	3.73	4.17	3.42	3.70	3.52	3.48	3.92	3.05	2.28	3.71	3.68
	N	112	111	110	109	111	110	101	109	109	109	111	111	105
	Std. Deviation	.43903	.543	.665	.590	.737	.663	.426	.611	.548	.601	.611	.658	.524
	Skewness	-.513	-.634	-.288	-.735	-.085	-.657	-.520	-.169	-.438	.092	.303	-.380	-.380
3rd year	Mean	2.8748	4.28	3.68	4.25	3.34	3.74	3.64	3.51	3.96	3.13	2.31	3.72	3.66
	N	103	103	100	102	101	100	95	104	105	102	102	101	100
	Std. Deviation	.34883	.609	.716	.622	.848	.665	.433	.622	.667	.640	.694	.673	.632
	Skewness	-.210	-.873	-.210	-1.114	-.095	-1.126	-.502	-.260	-.693	-.042	.454	-.428	-.604
4th year	Mean	2.8603	4.27	3.71	4.31	3.37	3.78	3.59	3.44	4.05	3.05	2.31	3.82	3.61
	N	98	99	101	102	99	96	96	102	98	98	99	100	100
	Std. Deviation	.43965	.567	.802	.655	.765	.595	.444	.589	.504	.617	.689	.649	.564
	Skewness	-.423	-.778	-.559	-1.173	-.156	-.274	-.159	.414	-.502	.046	-.028	-.656	-.041
Total	Mean	2.8639	4.29	3.82	4.27	3.43	3.80	3.64	3.54	3.99	3.09	2.26	3.81	3.64
	N	407	408	406	403	406	400	378	412	405	399	407	407	391
	Std. Deviation	.42320	.557	.717	.601	.786	.634	.449	.614	.574	.625	.677	.667	.575
	Skewness	-.466	-.845	-.473	-.953	-.096	-.648	-.307	-.056	-.600	.021	.385	-.458	-.265

Table 7 depicts differences in the mean scores of the variables of the study in the various years of study. Although there was no displayed pattern in the mean scores of students as they progressed from one year of study to the next, the first year students appeared to have higher

mean scores than students in other years of study in respect to the cumulative GPA, self-efficacy, internal locus of control, intrinsic and extrinsic goal orientations, the three self-regulatory learning strategies of metacognitive, resource management and cognitive learning strategies and the personality trait of conscientiousness. The first year students were however less neurotic than students in the other years of study. Table 8 provides a one-way ANOVA of the significance of the mean differences in the various years of study

Table 8: Significance of mean differences in various years of study

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Student's cumulative GPA	Between Groups	.078	3	.026	.144	.933
	Within Groups	72.636	403	.180		
	Total	72.714	406			
Self Efficacy	Between Groups	2.461	3	.820	2.677	.047
	Within Groups	123.789	404	.306		
	Total	126.249	407			
Locus of Control	Between Groups	16.283	3	5.428	11.358	.000
	Within Groups	192.112	402	.478		
	Total	208.395	405			
Intrinsic Motivation	Between Groups	2.222	3	.741	2.068	.104
	Within Groups	142.853	399	.358		
	Total	145.074	402			
Extrinsic motivation	Between Groups	3.758	3	1.253	2.041	.108
	Within Groups	246.749	402	.614		
	Total	250.508	405			
Metacognitive Strategies	Between Groups	5.219	3	1.740	4.433	.004
	Within Groups	155.392	396	.392		
	Total	160.611	399			
Resource Management strategies	Between Groups	6.015	3	2.005	10.697	.000
	Within Groups	70.103	374	.187		
	Total	76.118	377			
Cognitive Learning strategies	Between Groups	5.376	3	1.792	4.888	.002
	Within Groups	149.588	408	.367		
	Total	154.964	411			
Agrreableness	Between Groups	1.187	3	.396	1.204	.308
	Within Groups	131.819	401	.329		
	Total	133.007	404			
Extraversion	Between Groups	.547	3	.182	.465	.707
	Within Groups	154.701	395	.392		
	Total	155.247	398			
Neuroticism	Between Groups	1.931	3	.644	1.410	.239
	Within Groups	183.905	403	.456		
	Total	185.836	406			
Conscientiousness	Between Groups	5.917	3	1.972	4.555	.004
	Within Groups	174.483	403	.433		
	Total	180.400	406			
Openness to Experience	Between Groups	.385	3	.128	.386	.763
	Within Groups	128.745	387	.333		
	Total	129.130	390			

Significant differences are observed on Table 8 with respect to self-efficacy, internal locus of control, metacognitive, resource management and cognitive learning strategies and conscientiousness at $p \leq 0.05$. According to Tables 7 and 8, students in their first year of study are observed to have significantly higher levels of self-efficacy, internal locus of control, intrinsic motivation and conscientiousness as compared to their counterparts in other years of study. In addition, students in their first year of study also adopt significantly better metacognitve, resource management and cognitive learning strategies as compared to students in other years of study. All other mean differences among the students in the various years of study were considered to be insignificant at $p \leq 0.05$.

Discussion and Conclusion

Significant mean differences are observed between the academic performance of male and female students. The female students significantly outperformed their male counterparts. This finding supports that of Cantwell (2001) who observed female students to be significantly better than their male counterparts in their academics. Emphasis should be given to enhancing male students' academic performance in the university. Factors that contribute to the academic performance of, specifically, male students should be sought for purposes of enhancing their academic performance.

It should be pointed out that, among all other students' internal factors, only agreeableness, which is a personality trait, revealed significantly higher levels among the female students than among the male students. The agreeableness trait reflects people's tendency to interact with others (Buchanan 2001). Those high in agreeableness are observed to be trusting, friendly and cooperative. McKenzie et al. (2004) observes agreeableness to be a significant predictor to the academic performance of undergraduate students. According to McKenzie et al. (2004) students who exhibit high levels of agreeableness tend to adjust quickly to new academic environments, to accept and hence complete the requirements of their courses on time and to be less likely to antagonize their lecturers, all of which may influence their academic performance. Thus, the significant differences in the academic performance of male and female students could partly be attributed to their significant high levels of agreeableness. Attention should therefore be given to enhancing the male students' agreeableness in the University for Purposes of enhancing their academic performance.

The means of the academic performance of the local students are significantly better than those of the international students. This finding further supports that of Zeegers (2004) among first year students of the university. The international students are also observed to have significantly higher levels of neuroticism in comparison to the local students. Buchanan (2001) considers neuroticism to reflect one's tendency to experience negative thoughts and feelings and to be prone to insecurity and emotional distress. The higher levels of neuroticism among the international students could be attributed to adjustment issues (Andrade 2006) that could also be contributing to their lower academic performance. Focus should therefore be given to assisting international students amply adjust to their environments in a foreign country for the improvement of their academic performance. The current study does not depict significant differences between the self-regulatory learning strategies of the local and international students although Andrade (2006) considered international students to have better critical thinking skills, which are self-regulatory learning strategies, than their local counterparts. A further study would be necessary in a different setting to establish whether critical thinking skills are significantly better among international students than among their local.

Full-time and part-time students are observed to significantly differ in terms of their levels of self-efficacy, intrinsic goal orientations, extrinsic goal orientations and the agreeableness personality traits. Many of the part-time students had not initially attained the high school grades required for direct admission into the university. Thus, they were either admitted to the university on the 'mature age' category, by which students who are above 23 years of age and who have undergone other formal training would be considered, or had undergone the pre-university or diploma program of the university in order to upgrade their academic performance before being considered admissible into the undergraduate program of the university. Therefore,

many of these students were older and had more working experience than their full-time counterparts (Daystar University Catalogue 2003-2007). The full-time students are considered to be in the traditional students' category while the part-time students, the non-traditional students' category (Eppler et al. 2000 & Cantwell et al. 2001). Eppler et al. (2000) and Cantwell et al. (2001) also observe part-time students to be joining the university with lower entry grades than those of the full-time students, who were directly admitted to the university after high school.

Full-time students are depicted as having significantly higher levels of extrinsic goal orientation as compared to their part-time counterparts. The part-time students, on the other hand, are observed to have significantly higher levels of self-efficacy and to be more intrinsically motivated as compared to their full-time counterparts. These observations relate to those of Eppler et al. (2000) and Socrates Grundvit Action (2002), both of who consider younger students to be more extrinsically motivated and less intrinsically motivated than their older counterparts in relation to their academics. In addition, the part-time students are more agreeable than their full-time counterparts. Contrary to Smith and Naylor's (2001) study and that of Salahdeen and Murtala (2005), both of which depicted full-time students to be significantly better than their part-time counterparts in relation to their academics, no significant differences are observed between the academic performance of full-time and part time students in the current study.

Nonetheless, Eppler, et. al. (2000) observe significant differences in the levels of self-efficacy, extrinsic and intrinsic goal orientations among the older and younger students all of which are considered to be significant predictors of academic success in the university (Harackiewicz et al. 2002, Ofori & Charlton 2002, Carroll & Garavalia 2004, Facey-Shaw & Golding 2005, Simons et al. 2000, Printick & Chunk 2002, Urdan, et. al. 2002, Beghetto 2004, Carroll & Garavalia 2004, Driscoll 2005, Lucinda et al. 2005, McKenzie et al. 2004). There is therefore need for the contributions made by the variables of self-efficacy, extrinsic and intrinsic goal orientations and agreeableness to be given attention while seeking to enhance the academic performance of full-time and part-time students. Other external factors may also be contributing to the academic success of both full-time and part-time students, thus reducing the significance of the differences observed between the two categories of students. There is therefore need to establish the external factors that contribute to academic performance of students in the university, establishing their differential effects on the academic performance of full-time and part-time students.

No significant differences exist between the academic performances of students in the various years of study. However, students in their first year of study had significantly higher levels of self-efficacy, internal locus of control, intrinsic motivation and conscientiousness as compared to their counterparts in other years of study. In addition, students in their first year of study adopted significantly better self-regulatory learning strategies, namely metacognitive, resource management and cognitive learning strategies, as compared to the students in other years of study. Although no significant differences are observed between the academic performance of students in the various years of study, the attitudes of self-efficacy and internal locus of control; the intrinsic goal orientation; the personality traits of conscientiousness and all the three self-regulatory learning strategies of metacognitive, resource management and cognitive learning strategies are considered to be significant predictors of academic performance of undergraduate students (Harackiewicz et al. 2002, Ofori & Charlton 2002, Carroll & Garavalia 2004, Facey-Shaw & Golding 2005, Cassidy & Eachus 2000, Simons et al. 2000, Printick & Chunk 2002, Urdan et al. 2002, Beghetto, 2004, Driscoll 2005, Lucinda et al. 2005, Locke & Latham 2002, Langley 2004, Yip & Chung 2005, Chen 2002, McKenzie et al. 2004,

Petrides et al. 2005). This implies that if students would maintain or enhance their levels of attitudes, intrinsic goal orientations, conscientiousness and self-regulatory learning strategies in subsequent years of study, their academic success in the university would be greatly enhanced. Therefore, in order for the students to enhance their academic performance in the university, they should be assisted to appreciate the importance of student-related factors, notably attitudes, intrinsic goal orientations, conscientiousness and adoption of good self-regulatory learning strategies as determinants of their academic success in subsequent years of study.

In conclusion, the significant differences observed in the student-related factors contributing to the academic performance of students in the distinct categories should be used as a basis of enhancing students' academic performance. In addition, there is need for another study to establish the differential effects of external factors, which include social, cultural and environmental, on the academic success of undergraduate students. There is also need for a replica study in other universities in Kenya for purposes of generalizing the findings of this study.

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