Factors Affecting Academic Performance of BS Astronomy Technology Students

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Abstract

Academic performance represents how well a student is achieving tasks and studies. This study show factors associated that affects academic performance of students such as; course, study habit, learning style, motivation, professor, and social factors. Based on the investigation of 42 astronomy students, this study analyses and evaluates the factors affecting academic performance of astronomy technology students and the relationship of their general weighted average to the rated factors. It shows that there are significant differences in the factors affecting academic performance. There is a marked negative relationship between the general weighted average and the factors affecting academic performance. It appears that students are optimistic in their academic performance, confident with their study habits, assertive with their learning styles, emphatic about their motivation, expresses more compassion in their studies compared to their social life, and their professors have shown professional, ethical and moral attitudes. The department should continue reinforcing students' reasoning and thinking skills especially if it is related to astronomy.

1. Introduction

Astronomy is probably the ancient science known to human civilization and significantly benefited from these events in the sky, inspiring the thoughts of the prehistoric human to the pronounced geniuses like Johannes Kepler, Sir Isaac Newton, Sir Galileo Galilei and Albert Einstein.

Astronomy is more than mapping stars and planets; it is a scientific study of the contents of the entire universe. One of the recently established departments in the College of Engineering and Industrial Technology in Rizal Technological University is the Department of Earth and Space Sciences. It promotes appreciation and broadening of astronomy education in the Philippines. It aims to produce graduates possessing thorough knowledge of astronomy and empowered in facing the challenges of competitive global community. It also entails to further and advance the interest of astronomy, to fuse and integrate Filipino values and virtues in the practice of astronomy and to realize the establishment of astronomy education through engineering-based expertise.

Academic performance denotes how well a student is achieving tasks and studies. The usual factors associated with it are grades, attendance, attitude, motivation and behavior towards studying. Analyzing students' academic performance has several purposes. The learning process needs performance indicators to rank the students and determine the causes of their failure. Identifying, evaluating, tracking and encouraging the progress of students will provide more career choices and job possibilities.

Academic performance can be evaluated in a number of ways. Other concerns that affect academic performance especially in third world countries are health and nutritional status. School development such as construction of school facilities, provision of textbooks and other learning materials, and teacher trainings are essential to improve equality education.

Academic performance is a way to determine the students' achievement in school. The factors associated to may differ from one student to another. The measure of a students' achievement depends on the factors associated with it. Faculty/teachers should identify these factors such as; course, study habits, learning styles, motivation, professor, and social aspects.

2. Literature Review

2.1.Academic Performance

The quality of students' performance remains at top priority for educators. It is meant for making a difference locally, regionally, nationally and globally. Educators, trainers, and researchers have long been interested in exploring variables contributing effectively for quality of performance of learners (Farooq, Chaudhry, Shafiq, and Berhanu, 2011 [11]).

Academic performance frequently defined in terms of examination performance. In this study academic performance was characterized by performance in tests, in course work and performance in examinations of students (Durden and Ellis, 2002 [8]) and can indicate learners' quality, the value of the curriculum, quality of learning and teaching activity management, and ability to instructors (Kamonpattananan, 2000 [20]). Similarly observed that measures of prior educational performance are the most important determinants of student performance, which implies that the higher the previous performance, the better the students will perform academically.

Academic performance is affected by a number of factors including admission points, social economic status and school background. Geiser and Santelices (2007) [13]. According to Graetz (1995) [15], educational success depends very strongly on social economic status of the parents. Considine and Zappala (2002) [5] also agree that families where the parents are advantaged socially, educationally and economically foster a high level of achievement in their children. It is because students from high social economic backgrounds are well exposed to scholastic materials, which aid their learning.

Sali-ot (2011) [37] exhibited that obtaining higher academic performance depends upon several factors but most importantly, the mental ability and study skills of the students. The academic performance of students is based on how they spend time in performing the academic work.

Salandanan (2005) [38] showed that teachers are imbued with values, attitudes and dispositions that foster a classroom atmosphere of mutual trust for individual characteristics, especially student's needs, interests, and abilities.

Academic achievement can be reflected by the outcomes of education management. Academic achievement is considered as index of efficiency and quality of education management, or management of learning/ teaching activities (Kamonpattananan, 2000 [20]).

2.2.Factors Affecting Academic Performance

Academic achievement is one of the main factors considered by the employer in recruiting workers especially the fresh graduates (Ali, Jusoff, Ali, Mokhar and Salamat, 2009 [1]). There are various factors inside and outside school that contribute for the quality of academic performance of students. To achieve the objective of educating students effectively with quality performance in academics, it is necessary for the educators to understand better about the factors that may contribute in the academic success of students (Farooq, Chaudhry, Shafiq, and Berhanu, 2011 [11]).

Krashen (2005) [25] concluded that students whose parents are educated score higher on standardized tests than those whose parents were not educated. Educated parents can better communicate with their children regarding the school work, activities and the information being taught at school.

Mushtaq and Khan (2012) [30] carried out a research that is based on student profile that student performance in intermediate examination is linked with students' outline consisted of approach towards communication, learning facilities, proper guidance and family stress.

The students' performance plays an important role in producing the best quality graduates who will become great leader and manpower for the country thus possible for the country's economic and social development because this concern not only to the administrators and educators, but also to corporations in the labor market (Ali, Jusoff, Ali, Mokhar and Salamat, 2009 [1]).

The most prevailing competency was communication with the learners, and the least prevailing is learner reinforcement – involvement. The most prevailing factor was intellectual, and the least prevailing was physical. There was moderate correlation between the competencies of college instructors and the factors affecting the academic performance of students (Sali-ot, 2011 [37]).

Another study revealed that gender was one of the factors affecting academic achievement (Sangkapan & Laeheem, 2011 [39]), while certain factors such as responsibility, and environmental factors such as instruction quality also affected academic achievement.

In addition, students with high degree of anxiety (Sangkapan & Laeheem, 2011 [39]) less responsibility had greater chance to be put on probation than those with low degree of anxiety and greater responsibility which make academic achievement could be predicted through anxiety (Laeheem, 2007 [26]).

The four causes of students' low academic achievement that has been found by Sommai Po-on (2008) [41] were insufficient basic knowledge, parents' inadequate income, helping work of family and parents over strict control on study and commuting distance also affected students' academic achievement. Overload assignments (Jitchinagul, 2009 [19]; Sommai Po-on, 2008) [41], inappropriate assessments (Biggs, 2003 [3]; Lizzio, Wilson, & Simons, 2002 [27]) and high expectations of students' academic achievement also cause to have low academic achievement.

Moreover, lack of achievement motivation, negative study attitudes, health problems, personal problems,

inadequate basic knowledge, family background including parents' low education level, low financial status and poor upbringing can all result in a learner's study problems (Pimthong, 2003 [33]).

2.3.Motivation

Motivation is a very complex phenomenon with many facets Gardner (2006) [12]. This is because the term motivation has been viewed differently by different schools of thought. Brown (2000) [4] identified motivation as quite simply the anticipation of reward, he also asserts that motivation of learners often refer to a distinction between two types of motivation namely, instrumental versus integrative motivation.

External motivation and intrinsic motivation are the two types of motivation. External motivation generally consists of recognition and praise for good work, while intrinsic motivation generally consists of an internal desire to learn about a specific topic. Colleges traditionally give students grades as confirmation that they have achieved the course objectives.

With lack of positive attitudes and motivation in the Astronomy course, most of the engineering graduates have poor background in physics, yet, taking pre-requisite subjects made them difficult to understand more in succeeding topics.

A widely accepted as a key factor which influences the rate and success of learning is the learners' motivation. There are many factors that might cause the students' low proficiency; one might be attributed to students' motivation towards the subject. Moreover, motivation of the students is one of the most important factors influencing their success or failure in learningMcDonough (1983) [28].

A better understanding of students' motivation and attitudes may assist curriculum and instruction designers to devise language teaching programs that generate the attitudes and motivation most conducive to the production of more successful learners.

2.4. Learning

Learning is the development of new knowledge, skills, or attitudes as learners interact with information and the environment. Learning takes place at all times. They learn things while walking down the street, watching TV, conversing with other people, or just observing what goes on around them. However, education is concerned primarily with the learning that takes place in response to our instructional efforts. How educators design and arrange instruction has a great deal to do not only with what is learned but also with how the learner uses what is learned (Heinich, 2002 [18]).

There are studies that indicate that the deep approach learning is positively related to achievement (Amirali, Huon, & Kevin, 2004 [2]; Roman, Cuestas, & Fenollar, 2008 [36]) and several studies have shown a relationship between approaches to learning and study success (Diseth, 2003 [6]; Watters and Watters, 2007 [44]).

Educational services are often not tangible and are difficult to measure because they result in the form of transformation of knowledge, life skills and behavior modifications of learners (Tsinidou, Gerogiannis, & Fitsilis, 2010 [42]). Research on approaches to learning refers mainly to organized studying or organized effort in studying, which emphasizes good time management, self-regulation and effort in studying rather than of the motivation to achieve (Entwistle & McCune, 2004 [9]; Entwistle & Peterson, 2005 [10]).

There are students who are enthusiastic about learning, but there are also students who need to be motivated to perform their best. One of the factors considered is their self-confidence. According to Kanfer (1996) [22], self-confidence or self-esteem is a powerful motivational factor in determining whether an individual will persevere when faced with obstacles.

The amount of time and effort that a learner can put into achieving goals is also important in learning and has significant impacts on how students engage in learning (Reid, Duval & Evans, 2007 [34]). Self-doubts can easily creep in when learners hit obstacles, experience frustration and judge themselves as incompetent.

Students viewed learning mostly as the transmission of information, the collection of facts and the practical use of knowledge, whereas teachers' conceptions emphasized critical thinking, problem solving and independence in learning (Virtanen & Lindblom-Ylanne, 2009 [43]).

A study conducted by Mlambo (2011) [29] shows a survey instrument that was administered to a random sample to generate data on demographics (gender and age), learning preference, and entry qualifications. The effect of learning preference, age, gender, and entry qualifications on academic performance (measured as the final coursework mark obtained) was determined. Relationships/associations between gender and learning styles, gender and entry qualifications, age and learning preferences, and age entry qualifications were analyzed using Pearson's chi-square test.

The said study also illustrates that the investigated factors significantly affected academic performance. This observation could be a consequence of an impressive performance in the coursework exams by a large proportion of students resulting in less variation in the recorded grades and perceptions of the teaching-

learning environment (Diseth, 2007 [7]; Parpala, 2010 [32]; Richardson, 2005 [35]). Learning preferences were found to be independent of both the age and gender of students. It was concluded that more determinants of academic performance need to be investigated.

Karemera (2003) [23] found that students' performance is significantly correlated with satisfaction with academic environment and service received. He also found that the existence of professional development programs and intership opportunities are associated with better academic performance.

Most learning strategy theories are based on the constructivist perspective of learning which contends that meaning and knowledge are constructed by the learner through a process of relating new information to prior knowledge and experience (Olgren, 1998 [31]). Olgren further stated that "the quality of learning outcomes depend on how well the learner organizes and integrates the information". Deep learning occurs when students use a combination of organization and elaboration strategies to analyze and synthesize information in ways that build a mental model linked to prior knowledge in memory.

2.5. Social

According to Maslow, social aspect is the third need. This comprises need for belonging, love and affection. Maslow considered these needs to be less rudimentary than physiological and security needs. Relationships such as friendships, romantic affections and families help realize this necessity for camaraderie and acceptance, as involvement in social, community or religious groups.

Socio-economic status is one of the most researched and debated factor among educational professionals that contribute towards the academic performance of students. The most prevalent argument is that the socioeconomic status of learners affects the quality of their academic performance (Farooq, Chaudhry, Shafiq, and Berhanu, 2011 [11]).

The social assistance of the school personnel, members of the families and communities has a crucial role for the accomplishment of performance goals of students at school (Goddard, 2003 [14]).

Farooq, Chaudhry, Shafiq, and Berhanu, (2011) [11] revealed that socio-economic status and parent's education have a significant effect on students' overall academic achievement as well as achievement in the subjects of mathematics and English. The high and average socio-economic levels affects the performance more than the lower level. Moreover, parents' education means more than their occupation in relation to their children's academic performance at school and it was found that girls perform better than the male students.

On the study conducted by Harb & El-Shaarawi (2009) [17], there have been many studies that sought to examine factors affecting students' performance and most of their findings point out to hardwork, previous schooling, parents' education, family income and self-motivation as factors that have significant effect on the students' grade point average (GPA).

The study further shows that most of the studies focused on students' performance in the western culture. Their study showed that cultural differences may play a role in shaping the factors that affect students' performance, and it is important to examine those relevant factors to the United Arab Emirates (UAE) society.

The study of Harb & El-Shaarawi (2009) [17] cited aims to investigate the socio-economic characteristics of UAEU students in relation to their performance and taking into account variables pertaining to the UAE society. Using regression analysis, results show that the most important factor that affects students' performance is their competence in English. It also shows that students who participate in class discussion and those on leave outperform other students. The factors that negatively affect students' performance the most are missing too many lectures and living in crowded household. Moreover, the results show that non-national students outperform national students and female students outperform male counterpart.

2.6. Students' Life

According to Shaib (2010) [40], college life can be stressful, although it is undoubtedly one of the most memorable experiences in one's life. It represents a critical developmental period for both late adolescents and young adults. Factors such as romantic relationships, organizations and clubs, and sports activities and lack of communication with parents (Kamwang, 2003 [21]) have been found to have effects on students' academic performance. These factors affect academic performance in terms of time demanded and the psychological state they may cause. He also stressed that academic performance is an excellent measure of the transfer of knowledge in modern society. Romantic relationships have the highest impact, and may be a psychological barrier to an effective learning process. Excessive sporting activities and involvement in clubs and organizations may pose a threat, but an insignificant one.

Gwacela (2006) [16] investigated the socio-economic and food security factors that affect academic performance. It appears that parents/guardians' employment has bearing on academic performance. It

suggests that students need more support to overcome food security factors. The study also pointed out that lack of prior university preparation and effective orientation program of the school affect academic performance of 1st year students. Furthermore, transition factors, transfer from rural to urban, personal problems such as lack of confidence, relationships, tuition debts, financial issues, and disabilities have significant effect to academic performance.

Kennedy and Tay (1994) [24] concluded in their survey article that the research on the factors affecting students' performance in economic point out to student's aptitude as the most important determinant of learning. Study effort, age of student, and a good match between student's learning style and instructor's teaching style all have positive effect on student's performance.

Poor academic achievement might result from irregular class attendance, lack of preparation before class, lack of class attention, lack of revision after class, and lack of class participation (Kamwang, 2003 [21]).

3. Methodology

3.1. Research Method

The research indicates the inherent characteristics with the gathering of data. It purports and presents facts concerning the Factors Affecting Academic Performance of BS Astronomy Technology Students. It also involves in the analysis on the assessment of the result of data gathered from questionnaires distributed to the respondents. It gives significance to the quality and standing facts.

A purposive sampling was used in the study because it involves selecting subjects when it is very difficult to locate respondents which show characteristics needed for the study and uses the fastest way of getting their opinion, reaction, responses to the instrument in Factors Affecting Academic Performance of BS Astronomy Technology students. This sampling can provide reliable and dynamic data to facilitate the understanding of a meaningful representation as it enables an initial consideration of the situation of the factors affecting academic performance of BS Astronomy Technology students and to identify and differentiate the needs and produces samples where it is selected based on the explicit features as it reflects to be significant.

3.2. Participants of the Study

With a confidence level of 90%, there are 42 respondents comprised participants from college freshmen up to the graduating class of BS Astronomy Technology in the College of Engineering and Industrial Technology in Rizal Technological University last second semester 2011- 2012.

3.3. Instrument

The instrument used was a researcher-made questionnaire with scale to measure the responses of the students on the formulated factors possibly affect academic performance of BS Astronomy Technology students which are; course, study habits, learning styles, motivation, professor, and social factors. It was designed and patterned to obtain adequate information regarding the possible factors that affect the academic performance of the BS Astronomy Technology students. This was validated by the different professionals and experts in the field.

The instrument was validated through dry-run. Also, the researchers sought advice from the different professionals in the field of astronomy, psychology and education and then fused their comments and recommendations which helped the researchers in enhancing the questionnaire.

The scale of the survey questionnaire has five degrees of intensity with weights of 5 being the highest and 1 being the smallest rating. The scale of the statistical value adopted to assess the factors affecting their academic performance:

Weighted Mean	Arbitrary Value	Verbal Interpretation
4.51 – 5.00	5	definitely true to me
3.51 – 4.50	4	true to me
2.51 – 3.50	3	uncertain
1.51 – 2.50	2	not true to me
1.00 – 1.50	1	definitely not true to me

3.4. Research Procedure

This study entails to the investigation on the factors affecting academic performance of the BS Astronomy Technology students. The factors are delimited with course, study habits, learning styles, motivation, professor, and social aspects. The respondents are the students of Rizal Technological University in the College of Engineering and Industrial Technology taking BS Astronomy Technology and who are officially enrolled in the second semester 2011- 2012.

The questionnaires were distributed to the respondents in the Astronomy Center with a thorough briefing on the objectives of the study and directions in answering the questionnaire.

Retrieval of the questionnaires was done right after the respondents have accomplished them.

3.5. Data Analysis

Student responses to the instrument were coded based on the 5-point Likert Scale determination per criteria so that higher scores embodied more positive responses. Using SPSS program, a one-way analysis of variance (ANOVA) was conducted to determine the significant difference in the responses on the factors affecting academic performance of BS Astronomy Technology students. Pearson's Product Moment Correlation to determine the significant relationship between the general weighted average and the rated factors in the questionnaire.

4. Results and Discussion

4.1.Factor Scales Affecting Academic Performance of BS Astronomy Technology Students

Table 1
Course Factor Affecting Academic Performance of BS Astronomy Technology Students

Course Factors	Year Level					
	1st	2nd	3rd	4th	5th	Mean
1. This course can fulfil my dreams.	3.84	3.75	4.38	4	4	**3.99**
2. This course has very pleasing and conducive facilities.	4.23	4	4.38	4	4	**4.12**
3. I am confident with this course.	3.57	3.5	3.75	4	5	**3.96**
4. I know I can get good academic standing in pursuing this course.	3.38	3	4	4	4.5	**3.77**
5. This course can make my career successful.	3.6	3.5	4.5	4.5	5	**4.22**
Mean	**3.72**	**3.55**	**4.20**	**4.1**	**4.5**	**4.02**

Table 1 shows the mean responses of the students about their course. Third year students responded that their course can fulfill their dreams and perceived that their course has a very pleasing and conducive facilities. The fifth year students responded perfectly that they are confident with their course, they are getting good academic standing, and they perceived their success towards their course.

Table 2
Study Habit Factor Affecting Academic Performance of BS Astronomy Technology Students

StudyHabit Factors	Year Level					
	1st	2nd	3rd	4th	5th	Mean
1. I spend free time doing activities related to astronomy.	3.77	3.5	2.87	1.5	4.5	**3.22**
2. I can think clearly when working with astronomy.	3.73	3.25	4.12	3.5	4.5	**3.82**
3. I enjoy going beyond the assigned work in astronomy.	3.77	3.25	3.75	4.5	5	**4.05**
4. I try solving more than what is expected of me.	3.73	4.25	3.63	4	4.5	**4.02**
5. Astronomy is a subject that I have enjoyed studying.	4	3.5	4.13	4.5	5	**4.22**
Mean	**3.8**	**3.55**	**3.70**	**3.6**	**4.7**	**3.87**

Table 2 presents the responses of the students about their study habits. In first criterion, only fifth year students definitely spend their free time doing astronomy related activities, in the second criterion, they also definitely think clearly when working with astronomy. In the third, fourth and fifth criterion, students enjoy going beyond their assigned work in astronomy and they have enthusiasm in solving astronomy and fervour in studying it.

Moreover, students are confident in their study habit. A study on academic performance was characterized by performance in tests, in course work and performance in examinations of students (Durden and Ellis, 2002 [8]).

Table 3
Learning Style Factor Affecting Academic Performance of BS Astronomy Technology Students

Learning Style Factors	Year Level					
	1st	2nd	3rd	4th	5th	Mean
1. I like to discover the solutions of the problems.	4.12	3.75	3.88	4	4.5	**4.05**
2. I am interested to learn new discoveries in astronomy.	4.15	4	4.38	4.5	4.5	**4.30**
3. In astronomy, you get rewards for your effort.	3.77	4	3.63	4	4.5	**3.98**
4. I am interested in everything related to astronomy.	3.96	3.5	3.5	5	4.5	**4.09**
5. When I work with astronomy problems, I find that my thinking and reasoning are sharpened.	3.77	3.5	4	4.5	5	**4.15**
Mean	**3.95**	**3.75**	**3.87**	**4.4**	**4.6**	**4.12**

Table 3 displays the response of students about their learning styles. In the first criterion, this shows that astronomy students in the higher years like to discover solution from the problems. In the second and third criterion, they are interested to learn new discoveries in their field and believed that there are rewards for every effort in their course. In the fourth criterion, it shows that students are interested in everything related to astronomy and understood that their thinking and reasoning skills are sharpened when working with astronomy problems.

With this aspect, students are assertive with their learning styles. Educational services are often not tangible and are difficult to measure because they result in the form of transformation of knowledge, life skills and behavior modifications of learners (Tsinidou, Gerogiannis, & Fitsilis, 2010 [42]).

Table 4
Motivation Factor Affecting Academic Performance of BS Astronomy Technology Students

Motivation Factors	Year Level					
	1st	2nd	3rd	4th	5th	Mean
1. Whatever I do, I try to do my best	4.38	4.5	4.25	5	5	**4.626**
2. When I am unsuccessful, I study persistently	3.92	3.5	3	4.5	4	**3.784**
3. It is enough for me to have a satisfactory grade to pass the course.	3.15	3.5	3	4.5	4	**3.63**
4. I don't try to learn more than what is taught in class	2.85	3.5	2	2	2.5	**2.57**
5. I study too much when I am having hard time understanding astronomy topics.	3.5	4.25	2.88	4	4	**3.726**
Mean	**3.56**	**3.85**	**3.02**	**4**	**3.9**	**3.67**

Table 4 exhibits the responses of the students about their motivation. Fifth and forth year students rated perfectly in the first criterion which describes that they are very enthusiastic in everything they do. In the second criterion, it describes that students study persistently every time being unsuccessful. In the third criterion, fourth year students definitely believe that having a passing grade is enough for them in their course. It also shows in the fourth and fifth criterion that students are eager to learn more than what is taught in class and that most of them were able to study too much when they are having hard time understanding astronomy topics.

It appears that in this factor, students are emphatic about their motivation. This affirms with the study of McDonough (1983) [28], motivation of the students is one of the most important factors influencing their success or failure in learning.

Table 5
Professor Factor Affecting Academic Performance of BS Astronomy Technology Students

Professor Factors	Year Level					
	1st	2nd	3rd	4th	5th	Mean
1. My professor explains thoroughly and in detail in our class.	3.92	4	4.37	4	5	**4.259**
2. My professor gives us motivation which developed our interest in learning.	4.08	4	4.37	4	5	**4.291**
3. My professor is regularly and punctually attends our class.	4.27	4.25	4.75	4	5	**4.454**
4. My professor gives grades objectively and fairly.	4.12	3.75	4.75	4	4.5	**4.224**
5. My professor is an ethically and morally well-being.	4.07	4.25	4.63	3.5	5	**4.29**
Mean	**4.09**	**4.05**	**4.57**	**3.9**	**4.9**	**4.3**

Table 5 reveals the reactions of students about their professor. In the first criterion, students believed that their professors in the department. In the second criterion, students pronounced that astronomy professors were able to give motivation which students developed their interest in learning. In the third criterion, the students states that astronomy professors regularly and punctually attends classes. The students also expresses that professors in the department were able to give grades objectively and fairly as stipulated in the fourth criterion. The fifth criterion also expresses that professors of astronomy students are ethically and morally well-being.

This shows that professors in astronomy department have shown professional, ethical and moral attitudes towards the students. Kennedy and Tay (1994) [24] concluded in their survey article that study effort, age of student, and a good match between student's learning style and instructor's teaching style all have positive effect on student's performance.

Table 6
Social Factor Affecting Academic Performance of BS Astronomy Technology Students

Social Factors	Year Level					
	1st	2nd	3rd	4th	5th	Mean
1. I am active in Facebook and other social networking sites everyday	3.35	3.25	2.25	4	4.5	**3.47**
2. I always consider playing games as a habit	3	2.5	3.25	3.5	3.5	**3.15**
3. When a friend invites me to a party, I go with them even I have school task to do	2.73	2	2.25	1.5	2.5	**2.19**
4. I go out with friends after school hours	3.04	3.75	2.88	2.5	4	**3.23**
5. I am used to have a form of entertainment to myself while doing home works	3.65	4	3.75	2	5	**3.68**
Mean	**3.15**	**3.1**	**2.87**	**2.7**	**3.9**	**3.15**

Table 6 displays the feedback of the students about a part of their social life. In the first criterion, fifth year students are definitely active in Facebook and other social media or networking sites everyday. But, as the mean of the responses, this criterion appears that astronomy students are uncertain if they are active in social media and networking sites everyday, it is maybe because they might not be able to assess if they have been active everyday. In the second criterion, it also reveals that most of the students were uncertain if playing games for them is part of their habit. In the third criterion, it shows that most of the astronomy students doesn't go out to a party if there are school tasks to do. In the fourth criterion, shows that fifth and second year students go out with friends after school hours, while third, fourth and second year students doesn't go out with friends even after school hours. In the fifth criterion, students said that having a form of entertainment while doing homework is mostly true to them.

Moreover, this shows that astronomy students have more compassion in their studies compared to their social life. Socio-economic status is one of the most researched and debated factor among educational

professionals that contribute towards the academic performance of students. The most prevalent argument is that the socioeconomic status of learners affects the quality of their academic performance (Farooq, Chaudhry, Shafiq, and Berhanu, 2011 [11]).

4.2. Significant Difference in the Factors Affecting Academic Performance of BS Astronomy Technology Students

Table 7
Analysis of Variance on the Factors Affecting Academic Performance of BS Astronomy Technology Students

Sourceof Variation	*SS*	*df*	*MS*	*F*	*P-Value*	*F Crit*
Between Groups	4.1665	5	0.833	4.799	0.003	2.620
Within Groups	4.1667	24	0.173			
Total						

Decision: The value of F = 4.799837 is > F crit = 2.620654, and that P-value = 0.003505 is < P-value of α = 0.05.

Table 7 reveals the ANOVA on the factors affecting academic performance of BS Astronomy Technology Students. This shows that the computed value of 4.799837 is greater than the tabular value of 2.620654 at correlation significance at 0.05 levels and that P-value = 0.003505 is < P-value of α = 0.05. The approximate significance is 0.003505, thus, there are significant differences in the factors affecting academic performance of BS Astronomy Technology students.

This result is associatedwith the study of Sali-ot (2011)[37] which showed that the most prevailing competency was communication with the learners, and the least prevailing is learner reinforcement – involvement. The most prevailing factor was intellectual, and the least prevailing was physical. There was moderate correlation between the competencies of college instructors and the factors affecting the academic performance of students.

4.3. Significant Relationship between General Weighted Average and the rated Factors Affecting Academic Performance

Table 8
Pearson Product Moment Correlation on the General Weighted Average and the rated Factors Affecting Academic Performance

Correlation	*General Weighted Average*	*Rated Factors Affecting Academic Performance*
General Weighted Average	1	
Rated Factors Affecting Academic Performance	-0.12935	1

Table 8 shows the Correlation the general weighted average of the students and their rated factors affecting their academic performance. There is a marked negative relationship between the general weighted average and the factors affecting academic performance. For the relationship between the percentage general weighted average and rated factors affecting academic performance, r = -0.129353. The relationship is negative; as the general weighted average increases, the rated factors affecting academic performance decreases. The coefficient of determination is r^2 = 0.016, this presents the general weighted average improves the prediction of the rated factors by 1.6%. The general weighted average expresses 1.6% of the variation in the rated factors by the students.

5. Conclusion

The findings of the study shows that students are optimistic in their academic performance. It also appears that students are confident in their study habits, assertive with their learning styles, emphatic about their motivation, the professors in their department have shown professional, ethical and moral attitudes towards the students, and it also shows that astronomy students expresses more compassion in their studies compared to their social life.

This also confirms that there is no significant difference in the factors affecting academic performance of BS Astronomy Technology students based on the results of the study. There is a marked negative relationship between the general weighted average and the factors affecting academic performance. The relationship is negative which indicates as the general weighted average increases, the rated factors affecting academic performance decreases.

6. Recommendation

Students are very optimistic about their academic performance; it is recommended that the department of astronomy continue to assign subjects to most qualified professors. Since those in the higher years are the only group of students who understands and expresses the importance of their course, it is recommended that lower years should have a strong background and anticipation about the importance of their course.

Students were not able to assess their social media and networking period as well as their uncertainty of playing games as part of their habit, with this, the students should be aware of their social media and networking period and their habit of playing games to be attentive of time they allotted in their social life.

It is recommended that students should convey and appreciate having high grades and not be satisfied of having just a passing grade. The department should continue reinforcing students' reasoning and thinking skills especially if it is related with astronomy.

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