

Factors influencing academic participation of undergraduate students

Sari Muthia Silalahi

Diploma 3 Computer Engineering, Institut Teknologi Del, Indonesia

Article Info

Article history:

Received Mar 11, 2020

Revised Jun 4, 2020

Accepted Jul 30, 2020

Keywords:

Classroom conditions

Environmental

Interview

Questionnaire

Student's behavior

Teacher's personality

ABSTRACT

This study aims to examine factors influencing aspects such as teacher's personality, student's behavior, environmental which has influence student's affective and cognitive. The data were obtained using methods: interview and questionnaire. The random participant has been chosen for interviewed and population has been used for the questionnaire. There were 1585 participants have filled the questionnaire and 24 students have interviewed. Interview data were recorded and analyzed. The results have processed, it was classified according to study programs following the indicator. The research finding shows that: factors from lecturers and teaching assistants got 78 - 81%, academic and non-academic facilities got 74.91% - 80.86% and dormitory as living for students got 69.16% which have a big impact on influencing student's affective and cognitive. There were also issues such as teacher's centered-learning, most of students and class situations can often be uncomfortable.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Sari Muthia Silalahi,

Faculty of Informatics and Electrical Engineering

Institut Teknologi Del,

Jl. Sisingamangaraja, Sitoluama, Laguboti, Toba Samosir, Sumatera Utara, Indonesia.

Email: sarimuthiasilalahi@gmail.com

1. INTRODUCTION

Education enables individual and society to participate comprehensively in the process of forming and developing knowledge, abilities, skills, and attitudes. The development of academic abilities are also influenced by the most factor such as lecturer attitudes, student behavior, classroom/laboratory condition, dormitory/residence, and facilities.

Lecturer and staff should have an attitudes in the forming of knowledge and character regarding the content they conveyed using modern technology and innovative method in teaching, managing discipline, and other activities [1]. Besides that, leadership is one of the influence factor changes the institution. Leadership by using knowledge, skill, and talent will produce students with unlimited resources who have good and positive outcomes [2]. The Council for Education Policy, Research, and Improvement [3] state that the influence of quality of education is the lecturer's abilities. So, lecturer characteristics and abilities are the main factors in achieving the quality of education. Not only the resources, the academic rule and changing of the curriculum are also influencing student and lecturer in learning in the class. One example: students have understood instruction and information from the lecturer based on strategies and methods in a curriculum which implied in that institutions. The other site, Kudari [4] describes the other factors like introduced and well-managed lesson plans, teaching strategies, efficiency the classroom as well. The consequences of it, students will have discipline and good communication. It will help the students learn better for improving their academic

performance. The students' attitudes also plays an important role in determining academic value. With it, they will be able to dedicate themselves sincere for learning and achieving the great result [1].

The same thing happened in an academic institution at IT Del. IT Del is an institution that focus on technology and informatics engineering. But in its development, IT Del gets increasing the number of students every year. It brings up some of the problems such as the attitudes, knowledge, and skills from new students. It was also found that most of the students' abilities was very low, and the students' attitudes was also one of the issues need to be a concern as well. It can be seen from grade of students especially in mathematics since 2014 - 2018. This following data will present the academic abilities of IT Del students in Figure 1, Figure 2 and Figure 3 [5].

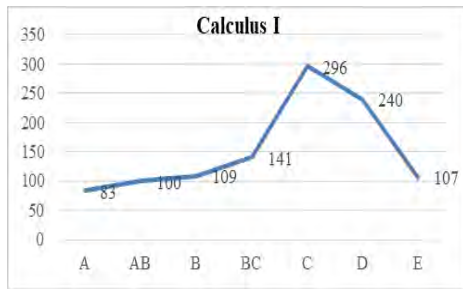


Figure 1. Grade of Calculus I 2014 -2018

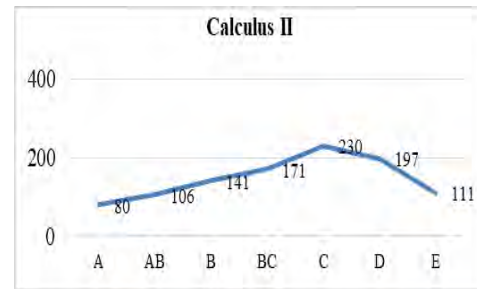


Figure 2. Grade of Calculus II 2014 -2018

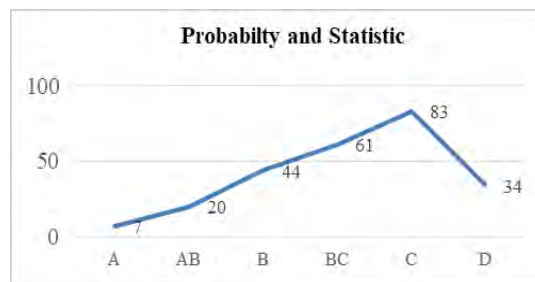


Figure 3. Grade of Probabilities and Statistic 2014-2018

Figure 1, Figure 2 and Figure 3 show the average of the student was still very low, which is C and D interval of 49.5 - 57. Researcher might conclude what kinds of factors which made that score was very low such as self-concept regarding mathematics, value of mathematics in the society, anxiety about mathematics, perception of mathematics teacher, and motivation for mathematics. Besides that, it was found the recapitulation of students who were resigned. The data can be seen in Figure 4 [6].

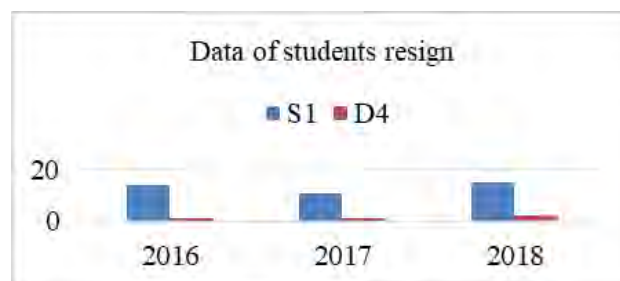


Figure 4. Data of students resign

Figure 4 describes it indirectly that there was a problem in students. So, in the end, they resigned from institution. Many possibilities caused this happened such as dissatisfaction of services from lecturers and staffs, applicable rules/systems, facilities both classroom, and campus environments, and colleagues. Adding more information, students' administration recapitulates data on students who commit transgressions such as smoke and immoral, chatting when the lecturer explained the material, and not obeying the class rules. This showed that there seems to be an internal problem with students.

Based on observation and considerations which have found in IT Del students. The researcher wanted to analyze whether the factors which made students have less academic participation and unfavorable attitudes. The same aims with [7] is to explore the relationship between the quality and value of higher education facilities and assess the extent to which student views coincide with the perceptions of professionals who are involved in the procurement and design of such facilities. Then the researcher wants to identify the main factors which will be found for supporting the advancement of academic institution. All of these variables that affect student academic participation, this is became the focus research in the field of education [8]. This is also in line with Radheshyam, Chandrahas, Rakesh [9] describing several parameters that have a significant impact on student performance and academic results in tertiary institutions such as family background, individual personality, academic background, and student environment. The study aims to investigate and describe the problems that presented about academic participation of students in undergraduate students especially in IT Del based on a conceptual framework.

2. RESEARCH METHOD

For this study, all of the students in IT Del from 2014-2019 in any major became the participants. Data sources included interviews with the students, recording of their conversations to discussed their problem and solution with students. At the end of the semester, students were asked, to fill out an online survey to gather responses about their reflective learning task and their participation. The questionnaire was available on the course CIS site. This allowed students to complete the instrument if they were visiting the site. The data were collected via a questionnaire from 1541 participants in terms of their perceptions of interactivity about quality of learning materials (lecture and tutorial) and school' life. These qualities of students' perceptions of interactivity were ascribed into a quantitative measure for data analysis purposes, which is amenable to statistical analysis. Qualitative and Quantitative method have chosen in this study [10]. The questionnaire would be analysis by using a framework. The conceptual framework build by discussed and revision with other researchers that had been conducted about problems in IT Del. The procedure of the study is shown in Figure 5.

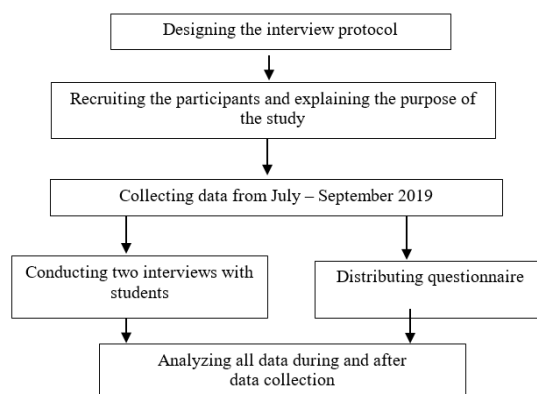


Figure 5. The procedure of the study

3. RESULTS AND DISCUSSION

In In this chapter, the results of the analysis of problems presented from questioner and interviews will be reported. The Table 1 shows that the average number of participant represent in every year from 2014 - 2108. (1) There is increasing new student admissions in every year except in the Electrical and Bioprocess Engineering programs, (2) The highest number of students is in the Information Systems and Informatics Engineering majors while the least is Bioprocess Engineering due to laboratory limitations, (3). When in 2019,

it was seen 0 students in Engineering Management study program that it was not because there was no student admission but there were no students were filling out the questionnaire.

Table 1. Sum of the participant in any major

Studi Program	TI	SI	TE	MR	TB
2014	4	1	8	0	5
2015	49	54	49	57	26
2016	53	53	50	53	26
2017	54	59	47	51	23
2018	57	56	42	60	19
2019	62	62	31	0	16
Total	279	285	227	221	115

To test the internal consistency, Cronbach’s alpha coefficient (α) is used [11]. It can measure the scale reliabilities of the collected data. Table 2 shows the values of Cronbach’s alpha coefficient with all values for the variables being above 0.70, suggesting very good internal consistency reliabilities for the scale in this sample. Table 2 presents that every statement has given is reliable and valid for describing data. There were 42 statements could be able to measure the aims and to answer the question and this study.

Table 2. Reliabilities statistics of the question

Reliabilities Statistics	TI	SI	TE	MR	TB
Cronbach's Alpha	0.984	0.967	0.982	0.977	0.978

3.1 Questionnaire's result

Figure 6 describes for students agreement including Indicator 9 gets 72.99% which containing facilities in the university get the highest responses from students. There is also Indicator 14 which containing dormitory and its facilities get 71.50%. This shows how important it is. As noted Akomolafe et al. [12] school facilities systems range from the blocks of classrooms, libraries, workshops, laboratories, equipment, electricity, water, desks, chairs, audio-visual and visual aids, toilets and storage space that would likely motivate students towards learning. Meanwhile, it had classified school facilities into two types namely facilities for academic and non-academic. Some examples of non-academic are games and sports facilities, farms and gardens. Other non-academic facilities include information and communication technologies (ICT), toilets, transportation and securities.

Furthermore, Asiabaka [13] stated that the purpose of providing a decent facility at school is to enhance the learning activity, and it is a booster to increase students’ achievement. Indirectly academic facilities are a major factor influencing student academic participation. But in fact, there was another factor which influenced the students' academic values [14]. Academic success also refers to academic achievement, competencies, satisfaction and college performance [15]. Then, there would be a responsibility for institution and staff to allocate and prepare what students need to support t their learning in class or individual. There might be included in classrooms (screens, projectors, whiteboards, stationery, and practicum tools and materials used by lecturers), library, and laboratory.

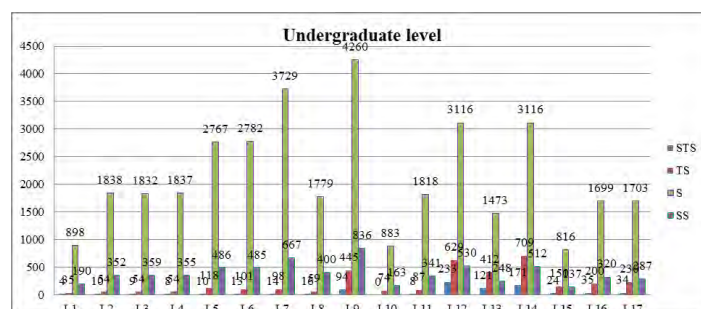


Figure 6. Questionnaire's result for undergraduate level

A student needs to learn and know the purpose of learning. It is when the student accepts those goals that the student becomes intensive and better organized in pursuing those goals [16]. Student engagement and motivation are precious commodities, valuable not only to teacher's academic staff but also to students. Students' school lives are more enjoyable when they are engaged in their classes and home living. Engagement provides an energetic resource for coping with the challenges of schoolwork, promoting students' motivational resilience [17]. But there was low responses in Indicator 13 which containing the attitudes and behaviour dormitory staff get 13.20%. Students shared their opinion what kind of acct what that they have done such as dormitory staff sometimes overlook students, cutting them short, not listening to their perspective. Dislike can also be communicated by an irritated or impatient tone of voice, sarcastic comments, or criticism aimed at a student's personality or abilities. It was one of the reasons what makes students less respect and obey the existing rules. So the consequences were making them a lack of discipline in doing something [18].

Indicator 7 which containing the coherence of assignments, quiz, and examinations get 78.83% in the second position. At IT Del itself, lecturers and teaching assistants will provide assignments and quiz to re-measure their understanding of the learning which has been carried out. Assignments quiz, and examinations increases students' awareness and understanding [19]. However, there are several conditions when lecturers or teaching assistants gave excessive assignments and quiz without consider how much time students have. It makes students have less time to rest and impacts for the next learning process. Assignment, quiz, and examination influence students' learning. It can be used as a measuring tool to review students' abilities in receiving the subject. In the end, they can get the motivation to follow the next subject and they can more understand either. The same explanation from Thorndike [20] who defines in the law of exercise, i.e. the more frequently behavior is repeated or trained, the stronger the correlation will be. However, it would be weakened if the connection is not continued or stopped. It shows the aim of learning is repetition. The more it is repeated, the subject will be increasingly well managed. It also same explanation with Kim [21] it is indeed quite challenging to set quiz questions and grade student papers every week to keep students working as the course progresses.

Besides that, cleanliness and nicety of the class are also included as one of the influencing factors which influence students' health and aesthetic. Therefore, maintaining cleanliness in school is very important. Cleanliness can also improve students' concentration and focus on learning. So, keeping the classroom feel good and clean is the obligation of students for learning activities.

3.2 Interview results

Implementation of the interviews were conducted to supplement the data on students 'understanding of the subject matter presented, and students' perceptions. Here some part of interviewed results. Internet is a collection of millions of computers around the world that are connected between each other. The internet is a window for students to see the world of knowledge. It is a media that does not have the limitation of information on each student, many students are highly dependent on the Internet because it has many advantages that can simplify a lot of work, the internet is helpful for effectiveness and efficiency. The benefits of self online learning are that it 'facilitates communication, provides student-centered, self-paced, and collaborative learning, disseminates shared information and reaches out to global communities'. While, Figure 7 shows some of the deficiencies came out during practicum in class.

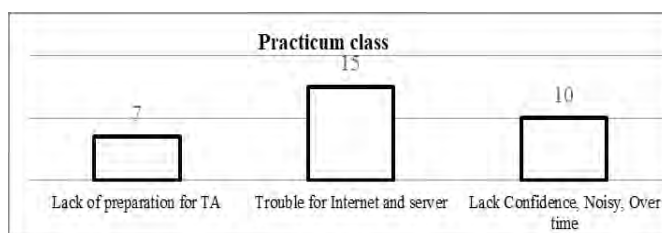


Figure 7. Interview results for practicum class

Most happening are internet problem, trouble in a server, and lack of confidence doing assignment, noisy and loud, and sometimes even assistant does not enough preparation to conduct practicum. Therefore, it was causing student's academic abilities went down. There also the same perception with Chen [22] said that the differences in academic grades and learning satisfaction between heavy and no heavy internet users were statistically significant. The benefits of the internet on academic performance presented by Joo et al. connectedness is a qualitative conceptualization of an individual's relationship with the internet, taking into

consideration the breadth, depth, and the importance of individuals' internet experience [23]. Lecturers and institution need to understand more about college students' needed for internet access and its consequences. Based on the data, academic administration in IT Del will try to solve the problems such as increasing the bandwidth, re-arranging servers and controlling the assistant preparation.

IT Del applies individual learning time for students which are held at night in campus. The academic affair has organized the place, then students are grouped according to class. They start at 8 pm - 10 pm. They are free for using laboratory, library, and internet. With the aims of individual learning, students will be able to repeat or to do homework together. They even can discuss with peers or lecturers/teaching assistants. The same line with Shim, Kiefer, & Wang [24] revealed teachers' encouragement of cooperative learning and skills mastery was directly related to students' help seeking behavior and positive interactions with peers. But sometimes students also faced some problems. It was described in figure 7.

Figure 8 indicates that students still face some problems in their learning, especially for the place. Places which determine by academic affairs are sometimes not appropriate. One of the examples is new students would be placed in canteen. The type of canteen is open which causing interruptions like insects, odor, cold, and noise. Based on the results of interviews, with such conditions it might bring difficult situations for students to concentrate on completing assignments or submissions are given by the lecturers or staff academic. Which will make them lacking time and have consequences for the final results. One of the research explains the correlation between the quality of the building and the extent to which buildings contribute to the satisfaction of student learning, social and practical needs. The significant of the correlations said that facilities have an effect on their learning experience as well [25]. Perhaps, academic affairs or related stakeholders were less controlled about it. Based on those problems, IT Del will try to solve them in several ways such as trying to build a building, re-arranging places in out the academic time, forming teams who will manage and control the independent learning time.

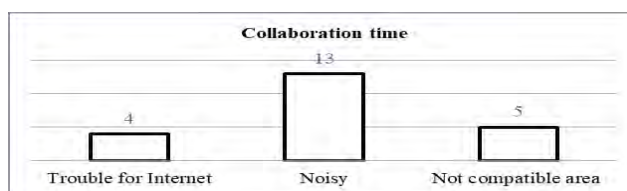


Figure 8. Interview results for the collaboration time

IT Del provides services to students to be able to live in dormitories. The aims are students can focus on their educational activities. Meanwhile, Araujo [26] believed that students can gain academic benefits by living on campus. Living on campus will likely cause students to progress better academically, and they will be more capable of achieving a high level of academic performance. However, with the big number of students around 1500 - 1600, IT Del made policy and academic regulations. Academic regulations applied in the campus and regulations will also be applied in the dormitory. Academic regulations cover all provision which related to students like behaviors, actions, activities as well as prohibitions and sanctions. For dormitory, regulations include 1. Pay boarding fees on time, 2. Obey the rules and guidelines of life in the dormitory, 3. Pay attention to disciplines and security in the dormitory. 4. Participate in all activities programs carried out in the dormitory, both routines or unexpected, 5. Exit and enter the dormitory must be acknowledged by the staff. 6. Maintaining tolerance and cooperation between students. This regulation helps students to be disciplined, carry out obligations and responsibilities, respect each other and be independent.

However, when interviews were conducted there were still has problems and complaints from students about the regulations and policies. Students described too many policies that were not appropriate, activities that exceed the time, the different perspectives between academics and dormitory staff shown in Figure 9 and Figure 10.

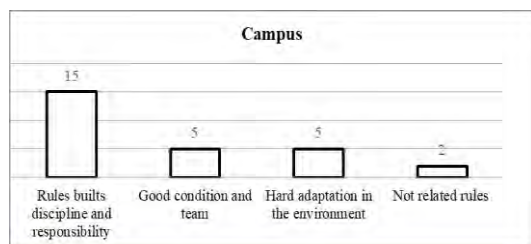


Figure 9. Interview's result describes the role impact on campus

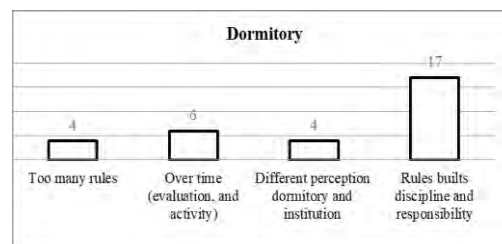


Figure 10. Interview's result describes the role impact in the dormitory

This was what made students felt uncomfortable until they resigned from IT Del. Although every school in the country has a written policy but, several studies have found that strong written policies do not necessarily predict thorough implementation. So, University needs to collaborate with students to assist in the implementation and evaluation of school wellness policies after they have been written and approved [27].

On the other hand, this is very influential in the academic process, self-improvement and final grades of students. That also supported by Spio et al. [28, 29] in the hostel has quite a strong relationship with academic achievement and it significantly contributes to influencing the academic achievement of the students [30]. The hostel is important to all students because the hostel is a vital necessity for all students throughout their studies.

4. CONCLUSION

This study has revealed important insights into factors influencing aspects such teacher's personality, student's behavior, environmental that influence the students' achievement. The results found that facilities and the coherence of assignments, quiz, and examinations are the most important factors to influence academic achievement of IT Del students. Insufficient attention had previously been given to the factors that impact students in achieving academic achievement in higher education, especially in temporary campus such as IT Del. In conclusion, it is possible for students in temporary campuses to achieve good academic achievement as those in the main campus if the institution paid enough attention and provide factors influencing aspects such lecturers and staff academic personality, student's behavior, environmental as well as those in the main campus.

The academic institutions should be aware of it that crucial and most important to students in the teaching and learning and also campus life that directly influences them in achieving excellence in academic. Analysis of the different institutions, entire lecturers, students, staff, material (course), and facilities may show a different picture and problems. But, it still cannot view the full picture in the data presented. More comprehensive analysis factors influencing legitimate peripheral academic participation of students in higher education can be conducted in this way. Follow the coding mechanism and framework of this study (with suitable refinement as suggested) to have a preliminary analysis of the academic participation of students. Another limitation is that we did not analyze how of the class condition. So, for future research, interviews (or by other means) with lecturers, students, staff are required to understand how they perform and go on. We hope that this study can give some insights for further analysis of academic participation of students in higher education.

REFERENCES

- [1] Maina, M.J, *Strategies employed by secondary school principals to improve academic performance in Embu West District*, Kenyatta University, 2010.
- [2] Ackerman, R.H, Moller, G and Katzenmyer, M, *Every Teacher as a leader: Realizing the potential of teacher leadership. No. 1*. San Francisco: Jossey-Bass, 1996.
- [3] Council for Education Policy, Research and Improvement. "Florida Teachers and the Teaching Profession". Teaching Profession Committee. 2003 May 2019. Retrieved online on 29 May 2019 at 10.00 am.
- [4] Kudari, J.M, "Survey on the factors influencing the student's academic performance," *International Journal of Emerging Research in Management and Technology*, vol. 5, no. 6, pp. 30-36, 2016.
- [5] Ritchan, *Data of students resigns in any major*. Medan: Institut Teknologi Del, 2018.
- [6] Ritcahn, *Student academic reports*. Medan: Institut Teknologi Del, 2017.
- [7] Lavy, S, "Facility management practices in higher education buildings: a case study," *Journal of Facilities Management*, vol. 6, no. 4, pp. 303-315, 2008.
- [8] Srinivas, P and Venkatkrishnan, S, "Factors affecting scholastic performance in school children," *IOSR Journal of Dental and Medical Sciences*, vol. 15, no. 7, pp. 47-53, 2016.

- [9] Radheshyam H. G, Chandrahas C. H, and Rakesh L. H, "Factors influencing the academic performance of the students at the university level exam: a literature review," *International Journal of Research in Engineering and Technology*, vol. 6, no. 5, 2017.
- [10] Taylor-Powell, E and Renner, M., "Analyzing qualitative data. Program development & evaluation," *University of Wisconsin-Extension Cooperative Extension, Madison*, vol. 1, no. 04, 2003.
- [11] Pallant, J, *SPSS survival manual A step by step guide to data analysis using the SPSS program*, 4th Edition, Open University Press. 2010.
- [12] Akomolafe, C. O and Adesua, V. O., "The impact of physical facilities on students' level of motivation and academic performance in senior secondary schools in South West Nigeria," *Journal of Education and Practice*, vol.7, no.4, pp. 39-42, 2016.
- [13] Asiabaka, I. P., "The need for effective facility management in schools in Nigeria", *New York: Science Journal*, vol. 1, no. 2, pp. 10, 2008.
- [14] JJ Miana and Ibrahim, R., H, "Socialisation mediates the relationship between learning environments and architecture students' academic performance," *International Journal of Built Environment and Sustainability*, vol. 6, no. 3, pp. 43-52, 2019.
- [15] Aluko, R. O, Adenuga, O. A, Kukoyi, P. O, Soyngbe, A. A, and Oyedeji, J. O, "Predicting the academic success of architecture students by pre-enrolment requirement: Using machine-learning techniques," *Construction Economics and Building*, vol. 16, no. 4, pp. 86-98, 2016.
- [16] Alshammari, F, Saguban, R, Pasay-an, E, Altheban, A, and Al-Shammari, L, "Factors affecting the academic performance of student nurses: a cross-sectional study," *Journal of Nursing Education and Practice*, vol. 8, no. 1, pp. 60-68, 2018.
- [17] Martin, A. J and Dowson, M, "Interpersonal relationships, motivation, engagement, and achievement: Yields for theory, current issues, and educational practice," *Review of Educational Research*, vol. 79, no. 1, pp. 327-365, 2009.
- [18] Iyer, R. V, Kochenderfer-Ladd, B, Eisenberg, N, and Thompson, M, "Peer victimization and effortful control relations to school engagement and academic achievement," *Merrill-Palmer Quarterly*, vol. 56, no. 3, pp. 361-387, 2010.
- [19] Gharib, A and Phillips, W, "Assigning culture: an example of a cross-cultural assignment for teaching introductory Psychology," *Psychology Learning & Teaching*, vol. 11, no. 3, pp. 428-432, 2012.
- [20] Maganga, J.H, *Factors Affecting Student's Academic Performance: A Case Study of Public Secondary Schools in Ilala District, Dar-es-salaam, Tanzania*. The University of Tanzania, 2016.
- [21] Kim, Y, "Learning statics through in-class demonstration, assignment and evaluation," *International Journal of Mechanical Engineering Education*, vol. 43, no. 1, pp. 23-37, 2015.
- [22] Chen, Y and Peng, S, "University students' internet use and its relationships with academic performance, interpersonal relationships, psychosocial adjustment, and self-evaluation," *CyberPsychology and Behavior*, vol. 11, no. 4, pp. 467-469, 2008.
- [23] Jacobsen W C and Forste R, "The wired generation: academic and social outcomes of electronic media use among university students," *Cyberpsychology, Behavior, and Social Networking*, vol. 14, no. 5, pp. 275-280, 2011.
- [24] Shim, S. S, Kiefer, S. M and Wang, C, "Help seeking among peers: the role of goal structure and peer climate," *The Journal of Educational Research*, vol. 106, no. 4, 290-300, 2013.
- [25] Christos Vidalakis, Ming Sun, and Aspasia Papa, "The quality and value of higher education facilities: a comparative study," *Facilities*, vol. 31, no. 11/12, pp. 489-504, 2013.
- [26] De Araujo, P and Murray, J, "Estimating the effects of dormitory living on student performance," *Center for applied economics and policy research*, vol. 30, no. 1, pp. 866-878, 2010.
- [27] Ickovics J.R, Duffany K.O.C, Shebl F.M, Peters S.M, Read M.A, Gilstad-Hayden K.R, and Schwartz M.B, "Implementing school-based policies to prevent obesity: cluster randomized trial," *Am. J. Prev. Med*, vol. 56, no. 1, pp. 1-11, 2019
- [28] Spio-Kwofie, A, Anyobodeh, R and Abban, G, "An assessment of the accommodation: challenges faced by students of Takoradi Polytechnic," *International Journal of Novel Research in Marketing Management and Economics*, vol. 3, no. 1, pp. 64-72, 2016.
- [29] Pamwell, R. N, *Influence Of School Infrastructure On Academic Performance In Public Primary Schools In Ruiru Location-Meru County, Kenya*, Thesis: Master, University Of Nairobi, 2015
- [30] Shamaki, T. A, "Influence of learning environment on students' academic achievement in Mathematics: a case study of some selected secondary schools in Yobe State – Nigeria," *Journal of Education and Practice*, vol. 6, no. 34, pp. 40-44, 2015.